Catalog and Announcements 2011-12

Admissions Office
1-800-4-ALFRED
or (607) 587-4215
www.alfredstate.edu
admissions@alfredstate.edu

Nothing in this catalog is exempt from change. Tuition, fees, room rent, academic programs, scholarship information, etc. are all subject to modification.

SUNY College of Technology
10 Upper College Drive
Alfred, New York 14802

Alfred State

CAMPUS TELEPHONE DIRECTORY

(Area code 607 unless otherwise noted)

President	587-4010
Vice President for Academic Affairs	587-3913
Vice President for Administration & Enrollment	587-3985
Vice President for Student Affairs	587-3911
Vice President for Institutional Advancement	587-3930
Dean of Arts and Sciences	587-3621
Dean of Management & Engineering Technology	587-4611
Dean of Applied Technology	587-3101
ACES	587-4064
Admissions	1-800-4-ALFRED or 587-4215
Alumni	587-3931
Athletics	1-800-4-ALFRED or 587-4361
Bookstore (Alfred Campus)	587-4020
Bookstore (Wellsville Campus)	(585) 593-6270, ext. 3159 or 587-3159
Career Development	587-4060
Center for Community Education & Training	1-800-4-ALFRED or 587-4015
Communications Office	587-4228
Counseling Services	587-4050
Dining Services	1-800-4-ALFRED or 587-4064
Student Records Financial Services (Financial Aid, Student Accounts, Records)	1-800-4-ALFRED or 587-4253
Health Services	587-4200
Learning Center	587-4122 Alfred 587-3112 Wellsville,
Library	587-4313 Alfred 587-3115 Wellsville
Residential Life	1-800-4-ALFRED or 587-4326
Braddon Hall	587-3236
Burdick Hall	587-3213
Getman Hall	587-4531
MacKenzie East	587-3217
MacKenzie North	587-3214
MacKenzie South	587-3268
MacKenzie West	587-3280
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Peet Hall	587-3245
Robinson/Champlin (R/C)	587-4531
Shults Hall	587-3222
Townhouse Complex	587-3214
Student Accounts	1-800-4-ALFRED or 587-4378
Student Life	587-4371
Tech Prep	587-4016
University Police	587-3999
Wellsville Applied Technology Campus	(585) 593-6270 or 587-3105

ACADEMIC DEPARTMENT DIRECTORY

Agriculture & Veterinary Technology	587-4714
Automotive Trades	587-3117
Building Trades	587-4130
Business	587-3413
Civil Engineering Technology	587-4616
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GENERAL COLLEGE INFORMATION

THE COLLEGE

Alfred State College of Technology is in Alfred, NY, a vibrant community with a permanent population of approximately 2,000 residents and nearly 6,000 students enrolled in three colleges. It is 15 miles north of the Pennsylvania border, 70 miles south of Rochester, and 90 miles southeast of Buffalo.

Alfred State had its beginning as a state school of agriculture in 1908 when it was created by an act of the state Legislature. An important milestone in the history of the College occurred in 1948 when it was incorporated into the newly organized State University of New York (SUNY) system.

In 1951, the College was authorized by SUNY to award the degree of associate in applied science. The associate in arts and the associate in science degrees were authorized in 1967, and the associate in occupational studies was approved in 1973. Bachelor degrees were added to the College's offerings in 1991.

The College enrolls approximately 3,700 full-time students annually. There are some 275 teaching faculty and professional staff supporting the College's more than 70 programs in agricultural, allied health, business, and engineering technologies, plus liberal arts and sciences, and 16 programs in applied technology. The College's programs are registered by the NYS Education Department and have been approved by the NYS Education Department for the training of veterans. The State Education Department can be contacted by writing or calling: NYS Education Department, Office of Higher Education and the Professions, Cultural Education Center, Room 5B28, Albany, New York 12230; (518) 474-5851. The College is accredited by the Middle States Association of Colleges and Schools (3624 Market St., Philadelphia, PA 19104, (215) 662-5606.

COLLEGE VISION

Alfred State will be nationally recognized as the college of choice for students seeking a technology-focused education and the preferred college for employers seeking graduates prepared to "hit the ground running."

COLLEGE MISSION

Alfred State, a residential college of technology, provides career-focused education enriched by the liberal arts to produce job- and transfer-ready graduates.

PRINCIPLES OF COMMUNITY

As members of Alfred State College, we choose to be part of an academic community dedicated to those principles that foster personal and professional integrity, civility, and tolerance.

We strive toward lives of personal integrity and academic excellence – We will encourage in ourselves, and in one another, those responsible actions which lead to lives of productive work, personal enrichment, and useful citizenship in an increasingly interdependent world.

We commit to treat one another with civility – Recognizing that there will be differences of opinion, we will explore these differences in a courteous and forthright manner, always acknowledging individual rights to freedom of expression and association.

We support tolerance – We encourage those of all cultures, orientations, and backgrounds to understand and respect one another in a safe and supportive educational environment.

This set of principles set forth by the College is supported by policies including the Codes of Student Conduct and Academic Integrity.

STATE UNIVERSITY OF NEW YORK (SUNY)

SUNY's 64 geographically dispersed campuses bring educational opportunity within commuting distance of virtually all New York citizens and comprise the nation's largest, centrally managed system of public higher education.

Nearly 400,000 students are pursuing traditional study in classrooms or are working at home, at their own pace, utilizing distance education. SUNY is governed by a board of trustees, appointed by the Governor, which directly determines the policies to be followed by the state-operated campuses.

DEGREES AND ACCREDITATIONS

I. Degrees Granted by NYS Department of Education.

Authorization is granted by the Division of Higher Education of the NYS Department of Education to confer the degree of associate in applied science (AAS), associate in science (AS), and associate in arts (AA). Section 5 of the Commissioner of Education's Regulations, Paragraph 7, reads as follows:

"Courses of Study. The course of study shall cover two years of standard college work, and shall be so organized and conducted and shall be of such scope and content as to warrant acceptance with full credit upon advanced standing by degree-conferring institutions. Such terminal courses as it offers shall be distinctly of collegiate grade. All courses of study shall contain the subject matter implied by the announced objectives of the institution."

Authorization is also granted by the Division of Higher Education to confer the degree of bachelor of science (BS) in engineering technology, the degree of bachelor of technology (BTech), and the degree of Bachelor in Business Administration (BBA).

Authorization is also granted by the Division of Higher Education to confer the degree of associate in occupational studies (AOS) under Section 52.2 of the Regulations of the Commissioner of Education (Chapter II of Title 8 of the Official Compilation of Codes, Rules, and Regulations of the State of New York).

State University criteria state that "a course of study leading to the AOS degree should be an organized post-secondary lower-division program leading to occupational competence. It should have a distinct identity, independent of established associate in applied science degree or certificate offered by an institution. The program must require a minimum of 60 semester credit hours or the equivalent of completion and may consist solely of specialized course work and related subjects."

II. The College is regionally accredited by the Commission on Higher Education of the Middle States Association of Colleges and Schools, 3624 Market St., Philadelphia, PA 19104, (215) 662-5606. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Commission on Recognition of Postsecondary Accreditation.

III. The following associate in applied science degree programs in engineering technology are accredited by the Technology Accreditation Commission (TAC) of the Accreditation Board for Engineering and Technology (ABET), a specialized accrediting agency recognized by the Commission on Recognition of Postsecondary Accreditation. (111 Market Place, Suite 1050, Baltimore, MD 21202-4012; (410) 347-7700):

- Architectural Engineering Technology
- Computing Engineering Technology
- Construction Engineering Technology
- Surveying Engineering Technology
- Electrical Engineering Technology
- Electromechanical Engineering Technology
- Mechanical Design Engineering Technology
- Mechanical Engineering Technology

IV. The following bachelor of science degree programs in engineering technology are accredited by the Technology Accreditation Commission (TAC) of the Accreditation Board for Engineering and Technology (ABET), a specialized accrediting agency recognized by the Commission on Recognition of Postsecondary Accreditation:

- Construction Management Engineering Technology
- Electrical Engineering Technology

Electromechanical Engineering Technology
Mechanical Engineering Technology
Surveying Engineering Technology

V. The court and realtime reporting program is approved by the National Court Reporters Association. This approval indicates that this program has met the general requirements and minimum standards established by the Board on Approved Reporter Training of the National Court Reporters Association [8224 Old Courthouse Rd., Vienna, VA 22182-3808; 1-800-272-6272.]

VI. The nursing program is accredited by the National League for Nursing Accrediting Commission (NLNAC), 3343 Peachtree Rd.NE, Suite 500, Atlanta, GA 30326; 1-404-975-5000. The NLNAC is responsible for the specialized accreditation of all nursing education programs and schools, both postsecondary and higher degree.

VII. The health information technology program is accredited by the Commission on the Accreditation of Allied Health Educational Programs (CAAHEP) [35 East Wacker Drive, Suite 1970 Chicago, IL 60601-2208; (312) 553-9355] in cooperation with the American Health Information Management Association's Council on Accreditation (AHIMA) [233 North Michigan, Suite 2150, Chicago, IL 60601-5519; (312) 233-1100.] The CAAHEP is a nationally recognized specialized accreditor of allied health education programs. CAAHEP is recognized by the Council for Higher Education Accreditation (CHEA) the only non-governmental higher education organization that undertakes recognition of accrediting bodies. CAAHEP works in cooperation with 18 Committees on Accreditation (CoA), representing each of the 18 professions that CAAHEP accredits.

VIII. The following programs in applied technology are ASE Master Certified by the National Institute of Automotive Service Excellence (ASE) [13505 Dullies Technology Dr., Suite 2, Herndon, VA 20171-3421; (703) 713-3800; www.asecert.org]:
Autobody Repair (ASE certified)
Automotive Service Technician (ASE certified)
Heavy Equipment: Truck and Diesel Technician (ASE certified)

IX. The heavy equipment: truck & diesel technician program is one of nine national Association of Diesel Specialists (ADS) TechSmart programs. The heavy equipment: truck & diesel technician program is the only program in New York and New England that is approved by the ADS [International Headquarters, 9140 Ward Parkway, Kansas City, MO 64114; (816) 444-3500, fax: (816) 444-0330.]

X. The drafting/CAD (computer-aided drafting) program in applied technology is certified by the American Design Drafting Association (ADDA).

XI. The welding technology program in applied technology is certified by the American Welding Society (AWS).

XII. The veterinary technology program is accredited by the American Veterinary Medical Association's (AVMA) Committee on Veterinary Technician Education and Activities (CVTEA), 1931 N. Meacham Rd., Suite 100, Schaumburg, IL 60173-4360; 1-800-248-2862. The AVMA CVTEA is responsible for the specialized accreditation of all veterinary technician education programs in the United States. It has also extended its accreditation to Canadian veterinary technician education programs.

GENERAL POLICIES

Civil Rights Policy

The laws concerning civil rights include: Title VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, Section 303 of the Age Discrimination Act of 1975, and the March 1979 "Guidelines" promulgated by the United States Office of Civil Rights.

Questions may be directed to the Director of Human Resources/Affirmative Action Officer and Title IX Coordinator, Alfred State College, Alfred, NY 14802.

Policy of Non-Discrimination

Alfred State College, in recognition of its educational mission, its social concern, its responsibility for the personal development of individuals, and its concern for the rights of the individual, hereby expresses this policy of non-discrimination:

All programs and services of the College are administered without discrimination on the basis of age, sex, marital or military status, race, color, creed, religion, national origin, disability, or sexual orientation. This policy of non-discrimination extends to admission, financial aid, housing, counseling, educational programs, athletic activities, and placement as well as to all aspects of employment.

In support of this policy, the College affirms its right to take appropriate action if it or other duly constituted authority should determine that applicable Federal and State Non-Discrimination Laws and Regulations have been violated, or that the effect and intent of this policy have been willfully or habitually abrogated. This policy is an affirmation of the College's commitment to making non-discrimination a reality.

Family Education Rights and Privacy Act (FERPA)

Student Records

The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. FERPA gives parents certain rights with respect to their children's education records. These rights transfer to the student when he or she reaches the age of 18 or attends a school beyond the high school level. Parents or eligible students have:

1. The right to inspect and review the student's education records maintained by the school;
2. The right to request that a school correct records which they believe to be inaccurate or misleading;
3. The right to consent to disclosures of personally identifiable information contained within the student's education records, except to the extent that FERPA authorizes disclosure without consent. Schools may disclose records, without consent, to the following parties or under the following conditions:
   a. School officials with a legitimate educational interest as defined in detail on the Records Office Web site under "Disclosure of Educational Records" within the "Student Records" information;
   b. Other schools to which a student is transferring;
   c. To comply with a judicial order or lawfully issued subpoena.
4. The right to file a complaint concerning alleged failure by Alfred State College to comply with the requirements of FERPA. Written complaints may be addressed to the Family Compliance Office, U.S. Department of Education, 400 Maryland Ave. SW, Washington, DC 20202-4605.
5. The right to obtain a copy of Alfred State College's student records policy. A complete copy of this policy and a complete copy of the FERPA Law are available at www.alfredstate.edu under the link to current students and then Records Office.

Directory Information

Directory information (as defined by Alfred State College) includes name, Alfred State College e-mail address, address and telephone number, dates of attendance, date and place of birth, college major, expected date of graduation, degrees and awards received, photographs, enrollment status, participation in officially recognized sports and activities, weights and heights of athletes, and most recent previous educational institution attended. The College can release this information without the student's written request. However, under the Family Educational Rights and Privacy Act (FERPA), students have the right to refuse to permit disclosure of any or all of those items without their prior written consent. Students who prefer not to have their directory information disclosed must sign a statement so attesting. This can be done in the Student Records and Financial Services Office before 11 a.m. of the census date (last day to register) and to continue in effect, must be done each and every semester of the student's attendance. Under FERPA, if the Student Records and Financial Services Office does not hear from a student by that time, the student's directory information may be released.

Other Information

It should be noted that any parent/guardian who proves that he/she claims a student as a dependent for income tax purposes has the same rights to access. Each time a specific record is requested by a parent, the request must be in writing. All other requests for student educational records must have the written consent of the individual with the exceptions recognized by FERPA.

If you desire further details, a copy of the law is on file in the Student Records and Financial Services Office, Agriculture Science Building.

Alfred State College's policy is that student directories will be available for internal use only. These directories will be issued by the Student Records and Financial Services Office to offices upon request. Distribution of student directories (labels) to third parties is prohibited. This is in compliance with provisions of FERPA. Further, the Student Records and Financial Services Office will provide directory information to the military upon written request as mandated by the Solomon Amendment.

Student Right-To-Know and Campus Security Act

On July 1, 1992, the Student Right-to-Know and Campus Security Act went into effect requiring institutions receiving federal student aid funds to make available to prospective students information regarding graduation, retention, and attrition rates beginning in July 1993. Successful outcomes of students' academic performance are measured by graduates, transfers, persisters, and those receiving a certificate.

Of the 986 associate-level students who entered Alfred State College in the fall of 2006, 404 (40.97%) graduated within three years; 305 (30.93%) graduated within two years; 199 (20.18%) transferred to another SUNY institution without a degree; 46 (4.66%) transferred to a non-SUNY institution without a degree; 80 (8.11%) were still enrolled in the fall of 2009; and one student (0.10%) received a certificate.

In summary, 730 of the 986 students (74.03%) who enrolled at Alfred State College in the fall of 2006 achieved a successful outcome. Alfred State College has the highest on-time graduation rate of all non-specialized two-year postsecondary institutions in New York State.

Disclosure of Completion, Persistence, & Transfer Rates
For Full-Time, First-Time Associate-Level Students Entering in Fall 2006
(PURSUANT TO TERMS OF THE STUDENT RIGHT-TO-KNOW ACT)
(STATUS AS OF THE FALL 2009 SEMESTER)

Sex	Race		Entering Institution		Transfers to SUNY (without a degree)		Non-SUNY Transfers (without a degree)				
		Initial Cohort Entering Fall 2006 (1)	Grads Within Two Years (2)	Grads Within Three Years (3)	Four-Year Institution (4)	Two-Year Institution (5)	Four-year Institution (6)	Two-Year Institution. (7)	Number Persisters Enrolled Fall 2008 (8)	Attrition, Including Non-SUNY Transfers (9)	Received Certificate or Diploma Only (10)
FEMALE	WHT	251	61	106	14	41	4	2	13	71	0
	BLK	20	5	6	1	2	3	1	2	5	0
	HSP	6	1	1	0	4	1	0	0	0	
	API	4	2	3	1	0	0	0	0	0	0
	NRA	2	0	0	0	0	0	0	0	2	0
SUBTOTAL		283	69	116	16	47	8	3	15	78	0
MALE	WHT	591	222	263	27	80	15	4	51	150	1
	BLK	68	9	18	5	18	3	5	8	11	0
	HSP	21	1	2	0	2	3	3	2	9	0
	API	9	2	3	0	1	1	0	4	0	0
	AIA	9	2	2	0	3	1	0	0	3	0
	NRA	5	0	0	0	0	0	0	0	5	0
SUBTOTAL		703	236	288	32	104	23	12	65	178	1
TOTAL		986	305	404	48	151	31	15	80	256	1

Data Source for Non-SUNY Transfers is Transfer Track Services from the National Student Loan Clearinghouse. Available for participating institutions only.
Column 1 = Columns 3+4+5+6+7+8+9+10 Students shown in Columns 4, 5, 6, & 7 transferred spring 2007 through fall 2009.

Of the 166 baccalaureate level students who entered Alfred State College in Fall 2003, 57 (34.34%) graduated within four years; 74 (44.58%) graduated within five years; 78 (46.99%) graduated within six years; 40 (24.10%) transferred to another SUNY institution without a degree; 14 (8.43%) transferred to a non-SUNY institution without a degree; 1 (0.60%) was still enrolled in the Fall of 2009. In summary, 133 of the 166 students (80.12%) who enrolled at Alfred State College in Fall of 2003 achieved a successful outcome.

Disclosure Of Completion, Persistence, & Transfer Rates
For Full-Time, First-Time Baccalaureate-Level Students Entering in Fall 2003
(PURSUANT TO TERMS OF THE STUDENT RIGHT-TO-KNOW ACT)
(STATUS AS OF THE FALL 2009 SEMESTER)

Sex	Race		Entering Inst.			Transfers to SUNY (without a degree)		Non-SUNY Transfers (without a degree)			
		Initial Cohort Entering Fall 2003 (1)	Grads Within Four Years (2)	Grads Within Five Years (3)	Grads Within Six Years (4)	Four-Year Institution (5)	Two-Year Institution (6)	Four-year Institution (7)	Two-Year Institution (8)	Number Persisters Enrolled Fall 2008 (9)	Attrition, Including Non-SUNY Transfers (10)
FEMALE	WHT	18	5	7	8	1	3	1	1	0	4
	BLK	1	0	1	1	0	0	0	0	0	0
	HSP	1	0	0	0	0	0	1	0	0	0
SUBTOTAL		20	5	8	9	1	3	2	1	0	4
MALE	WHT	140	50	62	65	12	24	9	1	1	28
	BLK	2	1	1	1	0	0	0	0	0	1
	HSP	3	0	2	2	0	0	1	0	0	0
	API	1	1	1	1	0	0	0	0	0	0
SUBTOTAL		146	52	66	69	12	24	10	1	1	29
TOTAL		166	57	74	78	13	27	12	2	1	33

Data Source for Non-SUNY Transfers is Transfer Track Services from the National Student Loan Clearinghouse. Available for participating institutions only.
Column 1 = Columns 4+5+6+7+8+9+10 Students shown in Columns 5, 6, 7, & 8 transferred spring 2004 through fall 2009.

The 2005 Campus Awareness and Safety Report includes Alfred State College's summaries of the College's personal safety and security procedures in addition to the three-year summary for the Campus Crime Report which is excerpted on the following pages. The information is available in its entirety for review and/or duplication on the College's Web site (www.alfredstate.edu), on the University Police Web site at www.alfredstate.edu/UP, on reserve in both the Hinkle and Applied Technology campus libraries, and from the following campus offices: Admissions, Student Life, University Police, and the Vice President for Student Affairs.

The Advisory Committee on Campus Safety will provide, upon request, all campus crime statistics as reported to the U.S. Department of Education.

You may also visit the U.S. Department of Education's Web site which contains all campus crime statistics at www.ope.ed.gov/security to obtain more information.

Campus Crime Statistics

The Advisory Committee on Campus Safety and/or the University Police Department will provide, upon request, all campus crime statistics as reported to the US Department of Education. The US Department of Education maintains campus crime statistic information at the following Web address: http://www.ope.ed.gov/security. You may also obtain the full annual security report, which includes all campus crime statistics, through the University Police Department at (607) 587-3999 or access it through the college Web site at: http://www.alfredstate.edu/student-services/annual-security-report.

ADMISSION TO ALFRED STATE

Admission into one of Alfred State's more than 70 academic programs is based on the academic qualifications of the applicant without regard to age, sex, marital or military status, race, color, creed, religion, national origin, disability, or sexual orientation. Admission will be offered to qualified applicants whose academic preparation has prepared them for success in their chosen field.

APPLICATION PROCESS

All applicants (except international student applicants) must complete a SUNY application (including the supplemental application) which may be completed online at:

- Alfred State Web site (www.alfredstate.edu) or the State University of New York Web site (www.suny.edu)

A paper copy of the application may be obtained by contacting the Alfred State College Admissions Office or by downloading a copy from the SUNY Web site.

A high school transcript must be supplied to the Alfred State Admissions Office. The preferred way to meet this requirement is by completing the SUNY Online Academic Record (SOAR) through the SUNY Web site.

High school seniors may apply at any time during their senior year. Fall semester application decisions are mailed starting Nov. 1 and continue on a rolling basis according to space availability. Spring semester applications for those programs open for spring admission (see SUNY Application Viewbook) are also considered on a rolling basis according to availability of space.

Students with disabilities should contact the Admissions Office to inquire about special accommodations to assist them with the application process and paperwork.

Consistent with college policy, any deliberate falsification or omission of data on any admissions document may result in denial of admission, revocation of acceptance decision, or administrative dismissal from the College.

INTERNATIONAL STUDENTS

Alfred State College welcomes applications for admission from international students and is authorized under Federal Law to enroll non-immigrant students.

International students must complete the International Student Application packet which may be obtained from the Alfred State International Education Office. The application materials are also available on the Alfred State Web site (www.alfredstate.edu). In addition to the admission application, international students must also submit official academic and financial records. For students whose native language is not English, evidence of English proficiency must be shown by taking the Test of English as a Foreign Language (TOEFL) or another exam which measures English proficiency. Scholastic Aptitude Test (SAT) scores (critical reading and math) are required for entrance into the four-year, baccalaureate programs unless the student has successfully completed college-level course work following high school graduation. All application materials must be submitted well in advance of the intended first semester at Alfred State College.

Students who have completed college/university level course work and would like to have their courses evaluated for possible transfer credit must submit to Alfred State College an official college transcript and course descriptions (written in English) for courses to be evaluated. In addition, it is strongly recommended that students also provide a course-by-course credential evaluation completed by an approved credential evaluation service. The link to Josef Silny & Associates, Inc., www.jsilny.com, provides information on the service we feel best meets the needs of the applicant and Alfred State College. However, we will accept a course-by-course credential evaluation from an approved member of the National Association of Credential Evaluation Services (NACES), www.naces.org. Please note that course descriptions and the course-by-course evaluation are not necessary if an articulation agreement exists between your previous college/university and Alfred State College.

HOME-SCHOOLED STUDENTS

Alfred State College admits as matriculated students only persons who have a high school diploma or its recognized equivalent. Because of this requirement, Alfred State College has established a specific admission policy with respect to home-schooled students. The purpose of the policy is to ensure that home-schooled students are treated fairly yet in accordance with the requirements set forth by the College. The policy deals exclusively with the criteria for eligibility to be considered as an applicant for admission. Once eligibility for consideration is established, the applicant must also meet both campus and curriculum-specific admissions requirements.

Applicants 16 years of age or over (i.e., beyond the age of compulsory attendance)
These home-schooled students will be eligible for further consideration as an applicant to matriculated status if they can provide one of the following: 1) a letter from the superintendent of the school district in which the student resides, attesting to the student's completion of a program of home instruction meeting the requirements of Section 100.10 of the Regulations of the Commissioner of Education, 2) a passing score on the general comprehensive examination for the state high school equivalency diploma (GED) and the diploma itself if the student is eligible to receive one, 3) official verification of successful completion (a grade of C or better) of 24 college credit hours in the following distribution--6 credits in English language arts, 3 credits in natural science, 3 credits in humanities, 3 credits in mathematics, 3 credits in social science, and 6 credits in approved general education courses; confirmation of appropriate courses may be verified with the Alfred State Admissions Office, 4) official verification of having earned a degree from an accredited college or university, 5) evidence of having passed with a grade of 65 or better the following five New York State regents exams--English language arts, mathematics, US history, a science, and global history--**please note that students admitted through this option are not eligible for financial aid**.

Applicants under the age of compulsory attendance (i.e., below 16 years of age)
These home-schooled students will be eligible for consideration as applicants for admission to a matriculated status only if the student can provide a letter from the school district in which the student resides, attesting to the student's completion of a program of home instruction that is the substantial equivalent of a four-year high school course of instruction meeting the requirements of Section 100.10 of the Regulations of the Commissioner of Education.

TRANSFER STUDENTS

Students who have attended other colleges following high school graduation, either full- or part-time, are classified as transfer students and may receive advanced standing. In addition to completing the SUNY application and providing an official high school transcript, transfer students must submit official transcripts. These transcripts should be sent to the Alfred State Admissions Office at the time of application. It is recommended that students who have completed college-level course work during high school submit official transcripts so that appropriate transfer credit may be awarded.

Parallel and equivalent courses passed at a grade “C” or above will be given transfer credit on approval of the department chair in whose department the course is registered. Credit may be given for courses passed with a grade of “C-” if the overall index of the courses being transferred remains at “C” or higher. Only credit hours and honor points earned at this College will be considered when computing a student’s index.

TRANSFER AGREEMENTS

Agreements have been established between Alfred State and two-year colleges which permit a student to complete an associate degree at the two-year college and transfer to Alfred State to complete a baccalaureate degree. Transfer is guaranteed if the student successfully completes, in accordance with the specific articulation agreement, the prescribed schedule of courses. Any questions regarding transfer of courses should be directed to the transfer adviser within the Student Records and Financial Services Office at Alfred State.

The student must provide an official transcript from the two-year college to Alfred State.

Two-year College Associate in Applied Science	Alfred State College Baccalaureate Program
Broome Community College	Construction Management Engineering Technology
Corning Community College	Electrical Engineering Technology Financial Planning Human Services Management
SUNY College of Technology at Delhi	Architectural Technology
Dutchess Community College	Architectural Technology
Erie Community College	Architectural Technology Information Technology: Applications Software Development Information Technology: Network Administration Information Technology: Web Development
Finger Lakes Community College	Architectural Technology
Hudson Valley Community College	Architectural Technology
Jamestown Community College	Computer Engineering Technology Electrical Engineering Technology Electromechanical Engineering Technology Financial Planning Forensic Science Technology Information Technology: Applications Software Development Information Technology: Network Administration Information Technology: Web Development Technology Management
Jefferson Community College	Forensic Science Technology
Mohawk Valley Community College	Digital Media and Animation Surveying Engineering Technology
Monroe Community College	Business Administration Construction Management Engineering Technology Electrical Engineering Technology Financial Planning Information Technology: Applications Software Development Information Technology: Network Administration Information Technology: Web Development Technology Management
Niagara County Community College	Mechanical Engineering Technology
Onondaga Community College	Architectural Technology Computer Engineering Technology
Orange County Community College	Architectural Technology
Suffolk County Community College	Digital Media and Animation
Sullivan County Community College	Financial Planning Technology Management
SUNY College of Agriculture & Technology at Morrisville	Architectural Technology
Westchester Community College	Information Security & Assurance

ONE-PLUS-ONE TRANSFER PROGRAM

Agreements have been established between Alfred State and several community colleges which permit a student to complete the first year of a two-year program at a community college and then transfer to Alfred State for the second year. Transfer is guaranteed if the student successfully completes the prescribed first year schedule of courses at the community college with a 2.0 cumulative index and then transfers to Alfred State for the second year.

The student must file an application to the community college for the first year. During the first semester, the student must then file a SUNY Application to Alfred State as a one-plus-one transfer student. There is no filing fee for the one-plus-one application to Alfred State.

Upon completion of the prescribed freshman year program at the community college and the filing of the SUNY application as indicated above, the student is guaranteed automatic transfer acceptance with full credit provided the student successfully completes the required academic program with grades of "C" or higher and a cumulative index of at least 2.0.

The student must provide evidence of the above by assuring that an official transcript from the community college is provided to Alfred State's Admissions Office.

College	Program
Corning Community College	Health Information Technology
Genesee Community College	Health Information Technology
Jamestown Community College	Biological Science Court & Realtime Reporting Health Information Technology Veterinary Technology

OTHER TRANSFER PROGRAM

An agreement exists whereby students who have completed course work at the following institution can receive advanced standing at Alfred State:

Institution	Program
St. James Mercy Hospital	Individual Studies

JOINT ADMISSIONS

Alfred State has established Joint Admission Agreements from several of our associate degree programs into our 19 baccalaureate degree programs as well as from our certificate programs into our own associate degree programs. Alfred State students interested in pursuing an advanced degree should complete a SUNY Joint Admissions/Intent to Enroll form which is available from the Alfred State Admissions Office. This form should be filed during the final semester of the student's associate degree or certificate program.

VESID

Students who may be working through VESID should contact their VESID counselor prior to beginning the application process at Alfred State.

CONCURRENT ADMISSIONS PROGRAM (CON AP)

The Concurrent Admissions Program (CON AP) is conducted by colleges and universities that are members of the Service Members Opportunity Colleges (SOC). Concurrent with their enlistment in the Army, new soldiers are encouraged to express an interest in attending Alfred State following completion of their military obligation.

After completing a two-, three-, or four-year enlistment, the new veteran will be encouraged to enroll at Alfred State. This program also applies to soldiers enlisting in the Army Reserve.

Those interested in the CON AP program are encouraged to contact their military recruiter.

READMISSION

Students who have not yet graduated from the College and wish to apply for readmission must complete a Readmission Application available from the Alfred State Admissions Office or from the Alfred State Web site (www.alfredstate.edu). The completed application, along with official transcripts from any colleges attended since enrollment at Alfred State, must be forwarded to the Admissions Office. Applicants who are or will be graduates of the College and wish to apply to return must complete the SUNY Application and process it through the SUNY Application Processing Center for a new program of study. The new program must be significantly different from the program from which the student graduated. (Please contact the Admissions Office for further information on this requirement.)

EX-OFFENDERS

Individuals who are ex-offenders will have their application for admission reviewed under a college policy established in accordance with section 23A of the New York State Correction Law. Copies of this policy are available from the Admissions Office. Individuals who are ex-offenders and who wish to apply should identify themselves as such and request a copy of the policy.

ADMISSION REQUIREMENTS

1. Applicants must possess a recognized high school diploma or its equivalent. (Please note that distance learning degrees/diplomas do not satisfy this requirement for New York State residents.) Verification must be supplied to the Admissions Office. (Home-schooled applicants should refer to the Home-Schooled Students section on page 14.) **Applicants with an IEP certificate/diploma will not be accepted. These students are advised to take the GED exam and earn a 2500 or better to be considered.**
2. Individual program requirements must be satisfied as indicated. In addition, to be considered for admission into programs taught on the Alfred campus, the overall high school average must be at least a 76. For programs taught in the School of Applied Technology, Wellsville campus, the overall average must be a 74 to be considered. Applicants with averages lower than these may be considered with additional documentation. Applicants who do not meet specified program requirements but who show potential for success may be considered for admission through the Alfred State Opportunity Program (ASOP) or the Educational Opportunity Program (EOP). (See page 23.)
3. Applicants with previous college experience must submit an official college transcript(s).
4. Standardized test score (ACT or SAT) results are required for baccalaureate degree programs as well as for some scholarship considerations. They are not required, but are strongly encouraged, for associate degree and certificate programs as well as for applicants to the baccalaureate degree programs who have successfully completed college-level course work following high school graduation. If a student entering an associate degree or certificate program submits standardized test scores, they are used as a supplement to the educational background studied during the application review process. When multiple score reports are submitted, the highest composite score (critical reading and math) is used.
5. Additional information to explain special or extenuating circumstances is also encouraged.
6. If a student has a gap of more than six months in his/her educational experiences, the student will be required to complete an educational gap form in order to supply information on what he/she did during that time.
7. Financial need is not considered as part of the admissions process.
8. Alfred State College participates in one of New York State's five local, regional Career Pathways in Tech Prep programs. Students who participate in other tech prep programs should contact the Admissions Office to ensure proper consideration of secondary courses and credit-bearing courses, if applicable.

PROGRAMS OF STUDY

Applications are filed for admission into one of the following programs rather than a general freshman year program. Enrollment in other than registered or otherwise approved programs may jeopardize a student's eligibility for student aid awards. Detailed program information is found in the catalog, alphabetically. References for items with asterisks may be found on the page at the end of the Programs of Study listing. In addition to course entrance requirements listed, students must meet overall high school average requirements (76 for Alfred campus programs and 74 for Wellsville campus programs) to be considered for admission. Students with averages lower than these may be considered with additional documentation.

Program	Page No.	Application Code No.	Required Courses	Recommended Courses	Degree	Hegis Code
Accounting	83	0630	Algebra (Math A)	Geometry and Algebra 2/ Trigonometry (Math B)	AAS	5002
Agricultural Business	84	0511		Algebra (Math A)	AAS	5402
Agricultural Technology	86	0510	Algebra (Math A)	Geometry, Algebra 2/Trigonometry (Math B), Biology, Chemistry	AAS	5402
Air Conditioning and Heating Technology	88	0464		Algebra (Math A)	AOS	5317
Architectural Engineering Technology	90	0443	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)	Physics	AAS	5317
Architectural Technology	92	1452	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)*	Pre-calculus, Physics	BS	0925
Autobody Repair	95	0453		Algebra (Math A)	AOS	5306
Automotive Parts Technology	96	1929		Algebra (Math A)	AAS	5306
Automotive Service Technician	97	0451		Algebra (Math A)	AOS	5306
Biological Science	98	1554	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B), Biology, Chemistry		AAS	5407
Building Trades: Building Construction	100	0420		Algebra (Math A)	AOS	5317
Business Administration	102	0280	Algebra, Geometry, Algebra 2/ Trigonometry (Math A & B)**		BBA	0506
Business Administration	104	0671	Algebra, Geometry (Math A)	Algebra 2/ Trigonometry (Math B)	AS	5004
Business Management	105	1306	Algebra (Math A)	Geometry, Algebra 2/Trigonometry (Math B)	AAS	5004
CAD/CAM Technology	106	1337	Algebra, Geometry (Math A)	Algebra 2/ Trigonometry (Math B), Physics	AAS	5303
Coding & Reimbursement Specialist	108	1671	Biology	Keyboarding, Knowledge of Microsoft Office Professional	Cert	5213
Computer Engineering Technology	110	1602	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)	Physics	AAS	5104
Computer Engineering Technology	113	1357	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)**	Physics	BS	0925
Computer Information Systems	116	0581	Algebra, Geometry (Math A)	Algebra 2/ Trigonometry (Math B)	AAS	5101
Computer Science	118	0532	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)	Pre-calculus, Physics	AS	5101

Construction Engineering Technology	119	0577	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)	Physics	AAS	5317
Construction Management Engineering Technology	121	1603	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)**	Physics	BS	0925
Court and Realtime Reporting	123	0647	Algebra (Math A)		AAS	5005
Court Reporting and Captioning	124	2152	Algebra (Math A)		Cert	5005
Culinary Arts	125	0578		***	AOS	5404
Culinary Arts: Baking, Production and Management	127	0423		***	AOS	5404
Digital Media and Animation	129	1212	Algebra, Geometry (Math A)	Algebra 2/ Trigonometry (Math B)	AAS	5606
Digital Media and Animation	130	2018	Algebra, Geometry (Math A)**	Algebra 2/ Trigonometry (Math B)	BS	0699
Drafting/CAD	132	0450		Algebra (Math A)	AOS	5303
Drafting/CAD: Model Bldg and Process Piping Drawing	133	0419		Algebra (Math A)	AOS	5303
Drafting/CAD: Technical Illustration	134	0418		Algebra (Math A)	AOS	5303
Electrical Construction and Maintenance Electrician	135	0498		Algebra (Math A)	AOS	5310
Electrical Engineering Technology	137	0699	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)	Physics	AAS	5310
Electrical Engineering Technology	139	0216	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)**	Physics	BS	0925
Electromechanical Engineering Technology	140	0557	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)	Physics	AAS	5311
Electromechanical Engineering Technology	141	0236	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)**	Physics	BS	0925
Engineering Science	143	0530	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B); Pre-calculus; Physics or Chemistry	Both Physics and Chemistry	AS	5609
Entrepreneurship	145	1362	Algebra (Math A)	Geometry, Algebra 2/Trigonometry (Math B)	AAS	5004
Entrepreneurship	146	1192	Algebra (Math A)	Geometry, Algebra 2/Trigonometry (Math B)	Cert	5004
Financial Planning	147	1938	Algebra, Geometry, Algebra 2/ Trigonometry**		BBA	0599
Financial Services	149	0641	Algebra, Geometry (Math A)	Algebra 2/ Trigonometry (Math B)	AAS	5003

Forensic Science Technology	150	2023	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B), Biology, Chemistry**	Physics	BS	1999
Health Information Technology	152	1969	Biology	Keyboarding, Knowledge of Microsoft Office Professional	AAS	5213
Heavy Equipment Operations	155	1908		Algebra (Math A)****	AOS	5317
Heavy Equipment: Truck and Diesel Technician	156	0452		Algebra (Math A)	AOS	5306
Human Services	157	1175	Algebra (Math A)		AS	5501
Human Services Management	158	2153	Algebra (Math A)**		BS	2101
Individual Studies	160	0688	Algebra (Math A)	Geometry, Biology	AS	5699
Information Security and Assurance	161	2085	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)**		BTech	0799
Information Technology: Applications Software Development	163	1502	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)**		BTech	0799
Information Technology: Network Administration	165	1505	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)**		BTech	0799
Information Technology: Web Development	167	1506	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)**		BTech	0799
Interior Design	169	0656	Algebra, Geometry (Math A)		AAS	5012
Liberal Arts and Sciences: Adolescent Education (Teacher Education Transfer)	170	1804	History/Social Studies and English concentrations: Algebra (Math A); Biology and Chemistry concentrations: Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B), Biology, Chemistry; Math and Physics concentrations: Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B), Biology, Chemistry or Physics		AA	5649
Liberal Arts and Sciences: Humanities	173	0201	Algebra (Math A)	Geometry, Biology	AA	5649
Liberal Arts and Sciences: Math & Science	176	0645	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B); Biology; Chemistry or	Both Chemistry and Physics	AA	5649

			Physics			
Liberal Arts and Sciences: Social Science	177	0212	Algebra (Math A)	Geometry, Biology	AA	5622
Machine Tool Technology	178	0551		Algebra (Math A)	AOS	5312
Marketing	180	0633	Algebra (Math A)	Geometry, Algebra 2/Trigonometry (Math B)	AAS	5004
Masonry	181	0401		Algebra (Math A)	AOS	5317
Mechanical Design Engineering Technology	182	1336	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)	Physics	AAS	5303
Mechanical Engineering Technology	184	0493	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)	Physics	AAS	5315
Mechanical Engineering Technology	185	0235	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)**	Physics	BS	0925
Motorsports Technology	187	1619		Algebra (Math A)	AOS	5306
Nursing	188	0622	Algebra (Math A), Biology, Chemistry	Combined SAT score of 900 (critical reading & math)	AAS	5208
Nursing	191	0291	Graduation from an approved associate degree nursing or certified diploma program		BS	1203
Pre-Environmental Science and Forestry (option within Liberal Arts & Sciences: Math & Science program)	193	0645 (Indicate P-ESF on Special Campus Project line)	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B); Biology; Chemistry or Physics	Both Chemistry and Physics	AA	5649
Sports Management	194	1396	Algebra, Geometry (Math A)	Algebra 2/ Trigonometry (Math B)	AS	5099
Sport Management	195	0182	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)**		BBA	0599
Surveying Engineering Technology	197	1039	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)	Physics	AAS	5309
Surveying Engineering Technology	198	1046	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)**	Physics	BS	0925
Technology Management	200	1318	Successful completion of an associate's degree		BBA	0599
Undeclared Major	202	0000	Algebra (Math A)	Biology	N/A	N/A
Veterinary Technology	203	0521	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B), Biology, Chemistry	Physics	AAS	5402
Welding Technology	206	0666		***	AOS	5308

* SAT and/or ACT scores also required with a recommended combined SAT score of 1000 (critical reading and math) or a composite ACT score of 21. Portfolio is required to enter junior year studio courses.

** SAT and/or ACT scores also required with a recommended combined SAT score of 1000 (critical reading and math) or a composite ACT score of 21.

*** It is recommended that a student have an in-depth knowledge of basic math skills

**** Letters of recommendation, a personal essay, and a resume indicating related work experience and/or knowledge of field are highly recommended

SPECIAL ADMISSIONS PROGRAMS

The Honors Program at Alfred State College

The Honors Program at Alfred State College was created to encourage motivated, curious, academically superior students to explore some aspect of their program in greater depth and to broaden and deepen their awareness of themselves as responsible, contributing members of a larger community. Honors Program participants complete a series of seminars, as well as a substantial honors project and 10 hours of volunteer community service. The permanent college transcript of students completing program requirements will read "Honors Program Graduate."

Application

The honors program coordinator reviews academic records of current and incoming freshmen and invites students with a record of strong academic achievement to apply for Honors Program status. The coordinator makes the final decision based on the application, including the required student essay, letters of recommendation from two educators, and meeting with the student. Any current Alfred State student with a GPA of 3.5 (of a possible 4.0) or better and at least one year remaining at the college is welcome to apply to the program. Students accepted into the Honors Program remain in the program of their choice for degree purposes.

Program Requirements

Honors Program participants are required to

- earn an overall 3.25 GPA by graduation, with no more than one semester's GPA falling below 3.0;
- enroll in honors courses offered by various departments, schedules permitting;
- work with a faculty or staff member to complete an honors project, usually a technical or research project related to the student's personal or career plans;
- participate in at least two honors seminars per semester—short, informal opportunities to interact with some of the college's most respected teachers;
- attend and participate in the college's speakers series, especially those sponsored by the Honors Program;
- complete 10 hours of volunteer, unpaid service of genuine benefit to the community or individuals in the community.

Program Benefits

The Honors Program coordinator will

- offer interesting, challenging, credit-bearing honors courses, informal honors seminars, and speakers of interest from the professional world;
- facilitate arrangements for the honors project and community service requirements, if requested;
- negotiate special Honors Program privileges: one-week laptop loans, "faculty" library borrowing privileges, and first-day course registration privileges;
- write letters to transfer colleges explaining ASC's honors program and recommending students to the honors program at those colleges;
- indicate "Honors Program Graduate" on the students' permanent college transcripts.

Interested students should contact:

Professor Terrence Morgan, Honors Program Coordinator
Hunter Student Development Center
Alfred State College
Alfred, NY 14802
(607) 587-4187; morgantm@alfredstate.edu

Educational Opportunity Program (EOP)

The Educational Opportunity Program (EOP) offers higher education opportunities to high school graduates or to holders of high school equivalency diplomas who do not meet normally applied admission criteria but who have the potential for college success. Students must also meet family income guidelines printed in the SUNY application viewbook.

EOP is typically an extended program with course work paced to enhance student success. Students study full-time, enrolling in at least 12 credit hours per semester. The first-year schedule will include courses in English; math; college skills and/or reading; social, physical, or life science; and/or program course(s). To comply with program requirements, EOP students may be required to repeat courses in which they have earned a "D" or "D+".

Students are required to participate in regular tutoring and academic advising sessions.

Essential to EOP is direct financial aid. For each student, a financial aid package is planned which may include grants from EOP, Pell, and Tuition Assistance Program (TAP). All EOP students must submit the Free Application for Federal Student Aid (FAFSA).

Alfred State Opportunity Program (ASOP)

The Alfred State Opportunity Program (ASOP) is a special admissions program which offers higher education to high school graduates or holders of high school equivalency diplomas who do not meet traditional admission criteria, but who possess the potential for college success. Unlike the Educational Opportunity Program (EOP), students are not required to meet financial need criteria. The program is designed to help prepare students in meeting chosen program prerequisites and allows for lighter course loads, college preparatory and developmental courses based on college course placement, and support services.

Course work is paced to enhance student success. The first semester schedule is comprised of 12 to 15 credit hours which might include courses in English; math; reading and/or college skills; social, physical, or life science; and/or program course(s). Assistance is available for tutoring, counseling, and academic advising. To comply with program requirements, ASOP students may be required to repeat courses in which they have earned a "D" or "D+".

Advanced Standing

Previous Credit

A student who has taken college-level courses after high school is considered a transfer student. (See Transfer Students)

Students who are taking college courses while in high school must submit official transcript(s) in order to receive transfer credit.

Course Challenges

Any student wishing to challenge a course is responsible for furnishing material, approved by faculty administering the exam, to be used in the challenge examination. The challenge exam fee includes a $15 recording fee and $10 per contact hour compensation fee. A student cannot challenge a course he/she is currently registered for after the registration deadline.

Credit by Advanced Placement Examination (AP) and College Level Examination Program (CLEP)

Students who successfully complete either Advanced Placement (AP) or College Level Examination Program (CLEP) examinations shall be granted transfer credit, as predetermined by the respective department chairs. Students must request that an official transcript of their grades (a copy of a grade report is not acceptable) be sent to this College. Students contemplating taking an AP or CLEP examination should be aware that Alfred State College requires the student to take the "Subject" examination and, if applicable, the optional essay section. Alfred State is a testing center for CLEP; for further information regarding the testing center, please contact the Center for Community Education & Training.

Credit from U.S. Armed Forces Institute (USAFI)

The College may grant credit, upon the recommendation of a department chair, for courses of study satisfactorily completed under this program in those cases where such courses have application to a student's program. Credit is treated as transfer credit.

Registration Process

In order to finalize enrollment at Alfred State College, students should refer to the following information:

Orientation

Orientation programs are designed to assist new students in adapting to the College and heightening their level of success. Positive relationships among students and faculty/staff are nurtured through numerous opportunities. Orientation is a college-wide initiative, inclusive of academics, student services, and support services of the College.

Immunizations

Prior to registration, students must have a completed health form on file with the Alfred State College Health Services and all immunizations completed as stated on the form. A meningitis response page must be read and the appropriate box checked and signed by the student. Accepted students receive a health form in their acceptance materials which can then be taken to their family physician for completion.

Academic Advisement

Each student is assigned a faculty adviser within his/her program of study. The adviser helps students plan their program of course work, reviews interim grades with students, and answers questions about personal academic goals, requirements, and academic regulations.

Class Schedule/Course Registration

A tentative schedule, based on the students' Math/English placement recommendations, will be prepared during orientation. Final class schedules will be available for new, transfer, and readmit students on final registration day.

Continuing students will meet with their academic adviser during a designated time each semester to discuss course selection for the next semester and to receive their Registration Authorization Code. Before meeting with their adviser, they will print their Course Selection Form found in Banner Web under "Student Forms" within the Student Services and Financial Aid link, and begin choosing classes for the upcoming semester. Registration is done online in Banner Web. Available classes can be accessed by going to Banner Web and clicking on "Class Schedule" prior to entering the secure area.

Continuing students will print their own schedules from Banner Web and adjustments to this schedule may be made during Add/Drop.

New, transfer, and readmit students will meet with their academic faculty advisers on registration day to pick up and discuss their "final" schedules. These final schedules will indicate if students need to process their bills with the Student Records and Financial Services Office. Students are not considered "registered" until they have picked up their final schedule and paid/processed their bill. Completed student health forms must also be turned into the Health Center at this time.

Note: Courses are dropped for students who do not process their bills by the due date.

COMMUNITY EDUCATION & TRAINING

E-mail - ccet@alfredstate.edu
(607) 587-4015

CONTINUING EDUCATION/PART TIME STUDENTS

Credit courses are open to all who might benefit from study and are qualified by previous education or work experience. High school graduation is not required. Financial aid is not available.

The College's refund policy is followed for all credit courses.

Students may enroll in regular day and evening courses, online, summer school, winter session, or a combination of all. Advising and referral services are available.

SUMMER SCHOOL/WINTER SESSION

Summer sessions provide students the opportunity to take courses in preparation for entering their freshman semester, getting ahead in their program, or lightening their semester load. Courses are conducted on an accelerated schedule allowing the student to take multiple courses.

Summer housing is available for those students from out of the area who are attending summer sessions.

Winter session provides students with the opportunity to take online courses to get ahead in their program or to lighten their semester load. Courses are conducted on an accelerated schedule.

COOPERATIVE COLLEGE-LEVEL PROGRAM FOR HIGH SCHOOL STUDENTS

This program is an opportunity for high school juniors and seniors to take college-level courses on the Alfred Campus with college students. This is a collaborative program and is open only to participating high schools. Financial aid is not available.

Course availability is based on classroom seat availability. A GPA of 85 is required and must be verified by the high school guidance counselor.

NON-CREDIT

CCET coordinates and oversees all non-credit academic, personal development, and contract programs offered by the College. These programs are open to all with no requirements of previous education or work experience.

INTERNET

CCET offers online courses in medical coding and billing, RHIT/coding exam prep, essentials of anatomy and physiology, veterinary medical terminology, small animal anatomy and physiology, computer, writing, personal enrichment, test preparation, small business, paralegal, health care professional, large business/management, project management, and more through a Web-based delivery system. Internet access, e-mail address, and Web browser are needed.

CLEP-CBT

CCET administers CLEP-CBT (College Level Examination Program-Computer Based Testing) examinations which allow students to receive transfer credit for specific courses upon attaining the required scores.

BUSINESS/INDUSTRY PROGRAMS

The Center for Community Education and Training (CCET) provides training and consulting services to support economic and personal development throughout the Southern Tier. CCET contracts with small to large business, industry, and government agencies to provide pre-employment skills training, job skills upgrade, and programs to increase competitiveness and retain employees.

NYSDOT and the QC/QA Task Force of New York Construction Materials Association collaborate with the College through CCET to conduct the Quality Control/Quality Assurance Technician Certification Program

for Hot Mix Asphalt in New York State. This program is held every spring on the Alfred State College campus.

Alfred State College and the Associated General Contractors of America collaborate through the Center for Community Education and Training to conduct the NYS HMA Density Inspector Certification program. This program is scheduled multiple times per year around New York State.

Alfred State College and the NYSDOT collaborate through the Center for Community Education and Training to conduct the NYSDOT welding certification program. This program is scheduled multiple times per year in Wellsville, NY, as well as other sessions around Western New York.

The College, through CCET, is a training provider for the NYS Office of Alcoholism and Substance Abuse Services. The program provides training for those who wish to maintain or begin a career in the field of alcohol and chemical dependency counseling; Credentialed Alcoholism and Substance Abuse Counselor (CASAC) designation and the Credentialed Prevention Professional (CPP) and Credentialed Prevention Specialist (CPS). For more information on CASAC visit: http://www.oasas.state.ny.us.

FINANCIAL INFORMATION

COLLEGE COSTS

Alfred State College strives to keep tuition and fees at reasonable rates. Charges may vary due to different room and meal choices, program costs, and fees selected. The chart below is designed to give you an idea of the average student's charges and expenses.

2011-12 College Costs (Subject to change - costs listed are based on the latest information available at the time of printing)

BILLED CHARGES	FALL	SPRING	YEAR
TUITION			
NYS Resident	$ 2635	$ 2635	$ 5270
Non-resident (Associate)	4870	4870	9740
Non-resident (Bachelor)	7160	7160	14320
COMPREHENSIVE FEE	624	624	1248
ORIENTATION FEE Full time, new students excluding online			100
ROOM RENTAL			
Double	3050	3050	6100
Small Single	3270	3270	6540
Large Single	3435	3435	6870
Townhouse	3600	3600	7200
MEAL PLAN (18-meal plan shown, other options available)	2175	2175	4350
FOREIGN STUDENT MEDICAL INSURANCE	477	667.75 (spring/summer)	1144.75
CLINICAL LIABILITY INSURANCE	$ 15	$15	
OPTIONAL FEES			
CAMPUS SPENDING ACCOUNT (For textbooks, supplies, and misc. - approx.)	550	550	1100
FITNESS CENTER FEE	45	45	90
GRADUATION FEE		50 (per degree)	
VEHICLE REGISTRATION	95 (yearly fee)		
MEDICAL INSURANCE	506 (yearly fee)	340 (if entering in spring)	
LATE REGISTRATION FEE**	40		

**Students who registered or paid their bill after the initial billing due date for each term are subject to this fee.

POSSIBLE ADDITIONAL EXPENSES (Not included in college's billed costs):

Clinical Internship	Tools	Personal Expenses
Books and Supplies	Telephone	Computer Hardware and Software
Transportation	Uniforms	

PART-TIME STUDENTS

NYS residents enrolled in day or evening programs carrying fewer than 12 credit hours are charged $220 per credit hour. Tuition for non-residents is $406 per credit hour for associate degree programs or $597 per credit hour for bachelor degree programs. Part-time students are also charged mandatory fees (pro-rated per credit hour).

New York State Residency: The Student Records and Financial Services Office will determine New York State residency per SUNY guidelines. If NYS residency status is in question, the student will be charged out-of-state tuition until the student provides proof of NYS residency. Forms are available in the Student Records and Financial Services Office and online.

Certain non-resident students may be eligible for the resident tuition rate if they meet the following requirements:
1. are not non-immigrant aliens within the meaning of 8 USC §1101(a)(15)(See Other Related Information below), and
2. attended an approved New York State high school for two or more years, graduated from an approved New York State high school and applied for admission to the University within five years of receiving a New York State high school diploma; or
3. attended an approved New York State program for a General Equivalency Diploma (GED) exam preparation, received a GED and applied for admission to the University within five years of receiving the GED; and
4. if the student is without lawful immigration status, the student submits to the campus a notarized affidavit stating that the student has filed an application to legalize his or her immigration status, or will file such an application as soon as he or she is eligible to do so. (See NYS Education Law §355(h) (8)).

*** *All costs are subject to change.*** The above costs are based on the latest information available at the time of printing.

EXPLANATION OF FEES & PAYMENT OPTIONS

Student Comprehensive Fee - This fee is paid by all students in order to provide quality services to everyone. The services are available to students whether or not the student chooses to take advantage of them. The fee is comprised of:

- ***Activities Fee*** - Established by students through their incorporated student government. The fee covers student activities such as the weekly newspaper, student organizations, social activities, cultural events, films, and recreational programs.
- ***Athletic Fee*** - Supports the College's 18 intercollegiate sports teams and entitles students to free admission to all campus sporting events.
- ***College Fee*** - Established by the SUNY Board of Trustees.
- ***Health Fee*** - Allows students to receive medications, physician consultations, and all available health services for no additional fee.
- ***Technology Fee*** - Supports computer technology operations, upgrades, and improvements in laboratories and classrooms.
- ***Transcript Fee*** – Guarantees students unlimited copies of their transcripts.
- ***Transportation Fee*** - Supports student transportation services.

Orientation Fee - A $100 mandatory one-time orientation fee is billed to all full-time new and transfer students (excluding Internet students) to cover the cost of programs, food, and registration requirements.

Clinical Liability Insurance - Provides malpractice insurance coverage for students participating in specific clinical programs.

Optional Fees:

Fitness Center Fee - (if used) For use of the Fitness Center (located on the ground floor of Orvis). It offers top-of-the-line selectorized weight machines, computerized fitness and aerobic equipment, and a free weight area.
Graduation Fee - Commencement Policy - All students must pay a non-refundable fee in order to participate in the Commencement Ceremony. This fee will be imposed per ceremony attended. Students receiving more than one degree may also be charged for additional accoutrements at the Campus Store. All students graduating from a bachelor program must pay an additional cost for the bachelor hoods. Students must attend the ceremony to receive diploma cover and/or honor cord. Please note: bachelor graduates will be required to pay $30 at the Campus Store for their bachelor hoods when they pick up

their regalia. Please plan ahead and if you have any questions contact Nancy Shearer, Commencement Committee Chair (x 3959 or shearenb@alfredstate.edu)
Vehicle Registration Fee - Mandatory on all vehicles parked on campus. Vehicles must be registered at the Parking Registration Office (located in the Theta Gamma House) where window stickers are issued. (A sticker for an additional vehicle for the same student is $11.)
Medical Insurance - Enrolls student in an accident and health insurance program. If you have questions about this optional plan, you may call ACES at (607) 587-4064. (For international students, enrolling in the Foreign Insurance Program is mandatory.)
Meal Plans - Students living on campus MUST have a meal plan. Meal plans are also available for commuters. Carefully review your plan choice and change the amount if necessary. If you have specific meal plan questions, you may call the ACES Office at (607) 587-4064.

PAYMENT OPTIONS

Fall semester bills are available online July 1; spring bills are available online in November. Both are given a due date well before classes begin. Payment is due on this date for the students to be pre-registered and to avoid a $40 late registration fee and cancellation of their course registrations.

Bills not processed before the "due date" will be assessed a $40 late registration fee. Bills processed after the due date must include the $40 late fee to be processed and must be received by Final Registration Day. All bills must be signed to assure identity. This may be done by signing the bill on the line indicated and mailing or faxing it to Student Records and Financial Services or by processing online. Due to signature requirements, we are unable to process bills over the phone.

Temporary deferment of payment may be granted at bill-processing time for students who have proof of financial aid or scholarships that will cover the billed amounts. Balances can be paid by cash, check, MasterCard, VISA, Discover, or wire transfer. As financial payments are received by the College, they will be first applied to any outstanding balance. Refunds will be issued only when the bill is paid in full. In a continuing effort to assist our customers, Alfred State also offers monthly payment plan options. Information regarding the plan is available online.

Students Receiving Title IV aid need to know: Students need to authorize the use of Title IV financial aid (federal grants and loans) to pay non-institutional charges (optional fees and vehicle registration). If you choose not to provide this authorization, you will be responsible for paying your optional fees even if you have a credit balance from Title IV financial aid. You will be asked your preference for this authorization during bill processing.

STUDENT CONSUMER INFORMATION

BILL PAYMENT

The College may receive funds for a student from various sources. All monies are applied to the student's account as received until the bill is satisfied. If the College receives funds that result in a refund for the student, the refund will be available for pick up in the Student Records and Financial Services Office for one week. Any remaining refund checks not picked up after one week will be mailed to the student's home address. Go to Banner Web, click on Student Services and Financial Aid, click on Student Accounts, click on Display Refund Detail to see if a refund has been generated.

Importance of Proper Registration - Students must properly register and pay by the appropriate deadlines for all courses for which they expect to receive credit. Students are cautioned that simply attending classes and completing course requirements does not entitle anyone to register after the deadlines have passed or to claim credit for a course in which s/he has participated as an unregistered or a de-registered student. Students must resolve all problems regarding registrations with the Student Records and Financial Services Office. Questions about payments are handled in the Student Records and Financial Services Office.

Late registrants are students who are registered or have processed their bill after the initial billing due date each term. Late registrants will be subject to a late registration fee of $40. This fee is non-refundable.

De-registration/Blocking - Students who do not comply with published tuition payment deadlines or who have other major obligations to the College may be de-registered--automatically dropped--from the courses for which they have registered prior to the new academic period. They may also be blocked from receiving College services such as official transcripts and placement records.

Deadlines - Courses may be added during the first week of a regular semester or during the first three days of a summer session. The drop period for full-semester courses is during the first four weeks of classes. Courses dropped during the drop period do not appear on the student transcript. Withdrawals from courses must occur prior to the last week of classes. Courses dropped after the drop/add week will incur a liability, according to the liability policy which follows.

LIABILITY POLICY

All tuition and fee liabilities are calculated based on the date of separation as recorded in the Student Records and Financial Services Office. Students who will be separating from the College must file the appropriate paperwork with the Student Records and Financial Services Office. Following is a liability schedule based upon the "official" withdrawal date or date the class is dropped. Students begin incurring charges the first day of the semester, not the day they complete the registration process.

A student who is dismissed from Alfred State College for academic or disciplinary reasons prior to the end of the academic term, shall be liable for all costs for that term and shall not be eligible for a reduction of charges or a refund of payment made.

Tuition, Student Activity Fee, Athletics Fee, Technology Fee, Health Fee:

*1st week	0% liability
2nd week	30% liability
3rd week	50% liability
4th week	70% liability
5th week	100% liability

**For liability purposes, the first day of class session shall be considered the first day as reported on the academic calendar. The end of the first week shall be figured as of the close (at 4 p.m.) of five business days.*

Orientation Fee: Non-refundable.

College Fee, Late Registration Fee, and Transcript Fee: Non-refundable after the first week.

Fitness Center Fee, Graduation Fee, and Vehicle Registration Fee: Charges are removed only if the student withdraws during the first four weeks of classes. (The vehicle sticker must be returned; Fitness Center fee will only be removed if not registered.) After the fourth week all charges will remain on the student's bill.

Room Rent:

1st week	0% liability
2nd - 8th week	50% liability
After 8th week	100% liability

Medical Insurance: Requests for refunds should be written to the insurance company. Questions may be directed to the ACES Office at (607) 587-4040.

Meal Plan; Campus Spending Account: **Unused portions are refunded by the ACES office or credited to the student's bill.**

RETURN OF TITLE IV FUNDS

If a student withdraws, is dismissed, or takes a leave of absence prior to the 60 percent point of the semester, Title IV funds must be returned to the source based on federal regulations. For the purpose of the return of Title IV funds, Title IV aid is PELL, SEOG, Federal Perkins Loans, Federal subsidized and

unsubsidized Stafford Loans, and Federal PLUS loans. Students who do not complete at least 60 percent of the semester and are receiving Title IV aid may owe a bill after funds are returned to the source.

ADJUSTMENTS TO BILL

Removal of charges from a student's bill must be made before or at the time of processing. Any student not requesting a correction to the bill prior to the end of the first week of classes will be liable for those charges.

Any appeal of a fee must be in writing, with justification, and submitted to the director of the appropriate department by the end of the first week of the semester.

Late Registration Fee: Any students who have not registered for classes, paid their bill, or **processed their bill** by the bill due date, will be assessed a $40 late registration fee. This fee is non-refundable.

Penalties for Non-payment: Non-payment of charges will result in current semester registration being dropped, late fees assessed, the holding of transcripts, and possible denial of future registration. Unpaid accounts will be forwarded to a collection agency or to the Attorney General's Office.

Late Payment Fee: A monthly late payment fee of up to $50 is assessed to any account with an outstanding balance. (This fee will be added to any account turned over for collection purposes.)

Returned Checks: A fee of $20 will be charged for checks returned for insufficient funds.

Disbursement of Loans, Grants, Scholarships: The College may receive funds for a student from various sources. All monies are applied to the student's account as received until the bill is satisfied. If the College receives funds that result in a refund for the student, the refund will be available for pick up in the Student Records and Financial Services Office for one week. Any remaining refund checks not picked up after one week will be mailed to the student's home address.

FINANCIAL AID

Financial aid comes from a variety of sources. Students must file a Free Application for Federal Student Aid (FAFSA) as soon after Jan. 1 as possible for each academic year in which they want to receive federal Title IV financial aid. The FAFSA can be completed online at www.fafsa.ed.gov. Once the form is submitted, students can print a confirmation page as receipt of the application. While on the FAFSA confirmation page, New York State residents who plan to enroll full time can apply for "TAP on the Web." TAP can also be applied for online at www.tapweb.org. Alfred State's school codes for financial aid are:

002854 for the FAFSA
3005 for TAP associate degree programs
6005 for TAP baccalaureate degree programs

Links to these online applications and other financial aid information can be found at www.alfredstate.edu/my-finaid.

Your Financial Aid Award

All students are considered for all types of aid, and financial aid packages are made according to a student's eligibility in each program as determined by federal and state regulations. Awards are determined by financial need based on data provided by the student on the FAFSA. The offer of financial aid is conditional based upon continuation of legislative authority and availability of appropriated funds. Financial need is calculated using the following formula:

Cost of Attendance (tuition, room, meals, fees, books, transportation)- Expected Family Contribution (EFC determined by FAFSA)= Financial Need

Electronic Financial Aid Award Letters are sent to accepted students with paid deposits via their Alfred State College e-mail account beginning in early spring for those with a valid FAFSA on file with the college. Detailed instructions are provided to students on how to accept and apply for their aid. Generally, financial aid can be categorized into three types:

1. **Scholarship and grant aid** are considered gifts and ***do not need to be repaid.*** These include the Federal Pell Grant, Federal Supplemental Educational Opportunity Grant (SEOG), NYS Tuition Assistance Program (TAP) for NYS residents enrolled full-time, Aid for Part-time Study (APTS) and part-time TAP for NYS residents enrolled part-time, and the Educational Opportunity Program (EOP) for NYS residents who meet established academic and economic guidelines.
   Students should contact the NYS Higher Education Services Corp. for information on scholarships for volunteer firefighters, victims of the World Trade Center disaster, and certain types of military and public service. The phone number is 1-888-697-4372. Information can also be found on the Web at www.hesc.com.
   Students receiving veterans' educational benefits through the Department of Veterans' Affairs must provide a certified copy of their Certificate of Release or Discharge from Active Duty (DD214) to the veterans' certifying official in the Student Records and Financial Services Office. Here students will receive required forms and enrollment certification for the completion of their application for veterans' educational benefits. Alfred State College is a participating member of the Yellow Ribbon Program. Campus scholarships are primarily given out by the Admissions Office. Scholarship opportunities and requirements can be viewed on the Web at www.alfredstate.edu/paying-for-college. Links to outside scholarship searches are also provided. Students are encouraged to seek scholarships and grants through their local high schools, civic organizations, and employers.
2. **Loans *do need to be repaid*** and should be considered as serious commitments. These include the Federal Subsidized and Unsubsidized Stafford Loans, Federal Perkins Loan, and Federal Nursing Loan. These loans are in the student's name and eligibility is determined by financial need based on results of the FAFSA. Students are directed by the college to complete an electronic Master Promissory Note (MPN). Under an MPN students can receive subsequent loan disbursements at the same school for up to 10 years without having to complete another promissory note. Interest rates and terms are set by the federal government and students must be enrolled a minimum of six credit hours per semester in a matriculated degree-granting program. These loans have a grace period before repayment begins once the student is no longer enrolled or drops below half-time enrollment.
   The Federal Parent PLUS Loan is taken out in the parent's name on behalf of the student. Repayment begins 60 days after the loan is fully disbursed. This loan is also applied for using an electronic Master Promissory Note (MPN). Interest rates and terms are set by the federal government and students must be enrolled a minimum of six credit hours per semester in a matriculated degree-granting program. The Federal Parent PLUS Loan can be deferred while the student is enrolled. Parents interested in deferment should contact their lender directly.
   Private Alternative Loans are non-federal loans made by commercial lenders and should be considered loans of last resort. Alternative Loans have higher fees and interest rates. Terms can vary by lender and loan product. Students must be at least 18 years old to apply in their own name and usually require a credit-worthy cosigner.
3. **Employment and Federal College Work-Study** is a way for students to earn money through a part-time job in order to contribute to their college costs. Work-study awards are offered to students with demonstrated financial need based on FAFSA results. Students are paid at an hourly rate every two weeks for the hours worked. Work Grant is a limited funding source that is not based on financial need; however, specific skills may be required for some jobs.

Student Loan Counseling

Entrance counseling – First-time borrowers under the Federal Stafford Loan Program are required to complete an online loan counseling session before loan funds can be disbursed. The session is designed to inform student borrowers of their rights and responsibilities under the Federal Stafford Loan program. Entrance counseling for new borrowers under the Federal Perkins Loan is done at the time students sign their electronic Federal Perkins Loan Master Promissory Note (MPN). Nursing Student Loan borrowers must also complete online student loan counseling.

Exit counseling – Students separating from the college due to graduation, withdrawal, leave of absence, dismissal, or less-than-half-time enrollment are required to complete an online loan exit counseling session. The session is designed to help students avoid the pitfalls of default by informing them of their repayment obligations as well as their deferment and forbearance rights under the loan programs from which they borrowed.

Income Verification and Other Requests for Information

Under the guidelines of established selection criteria, some students who apply for federal Title IV aid will be required to provide copies of parent and/or student federal income tax returns and/or other income documentation to the Student Records and Financial Services Office for the purpose of income verification. Other requests may include verification of family size, signatures on the FAFSA, or requests for assets to name a few. All documentation submitted must be signed by either the taxpayer or preparer and should clearly reference the student's name and ID number. Title IV aid will not be processed until all requested documents have been received and reviewed by the Student Records and Financial Services Office.

Quality Assurance Program (QAP)

Alfred State College is a participant in the federal Quality Assurance Program. Through this program, a random sample of students is selected for additional verification of FAFSA data. Students are required to provide requested documentation to the Student Records and Financial Services Office. The purpose of QAP is to ensure that federal Title IV funds are being awarded to the students entitled to those funds.

Selective Service Registration

Prior to receiving Title IV funds, the Higher Education Act mandates that males between the ages of 18-25 register with the Selective Service System. Registration can be completed on the FAFSA or at www.sss.gov. Male students who fail to register will be ineligible for Title IV financial aid.

Methods of Notification

Accepted students with paid deposits are provided with an active Alfred State College e-mail account. Award letters, requests for information, and changes to a financial aid package are sent to students' Alfred State College e-mail accounts. It is the students' responsibility to regularly check their campus e-mail for such updates and requests. Students should also be aware that they can view the status of their financial aid and requests for information anytime using the college's Banner Web student information system.

Overaward Policy

Overawards occur when students receive financial aid resources in excess of the college's cost of attendance. In this instance, the Student Records and Financial Services Office is required under federal student aid regulations to reduce or cancel any resources affected by the overaward. Students receive written notification by the Student Records and Financial Services Office when an overaward is identified and are advised which funds need to be adjusted. In some cases, this could leave a student owing a balance on the semester bill. Students are encouraged to notify the Student Records and Financial Services Office in writing immediately if they receive additional funds that were not included in their original financial aid package.

Consortium Agreements

Alfred State College will process financial aid for its matriculated students who are also attempting course work as a "visiting" student at another college or university. Prior approval is required by the student's academic department to ensure that the course work will transfer into Alfred State College and meet the student's graduation requirements. Complete procedures and consortium agreement forms are available by contacting the Student Records and Financial Services Office.

Academic Criteria for Financial Aid

Alfred State College is required to monitor the academic progress of students receiving federal and state financial aid. Students who are not maintaining satisfactory academic progress (SAP) and pursuit of program (POP) according to established guidelines are not eligible for federal Title IV and/or state financial aid. In addition, students cannot receive federal and/or state financial aid for courses not applicable to the major in which they are matriculated.

New York State Criteria/Requirements for TAP (full-time enrollment): Reviewed at end of each semester.

Category	Minimum for initial enrollment payment	After 1 TAP payment	After 2 TAP payments	After 3 TAP payments	After 4 TAP payments	After 5 TAP payments	After 6 TAP payments	After 7 TAP payments	After 8 TAP payments	After 9 TAP payments	After 10 TAP payments

TAP - POP (Pursuit of Program)	Enroll full-time	6 hours taken	6 hours taken	9 hours taken	9 hours taken	12 hours taken	12 hours taken	12 hours taken	12 hours taken	12 hours taken	12 hours taken
TAP - SAP (Satisfactory Academic Progress)	AAS, AA, AS, AOS Bachelor	Earn 6 hours 1.30 cum. Earn 6 hours 1.50 cum.	Earn 15 hours 1.50 cum. Earn 15 hours 1.80 cum.	Earn 27 hours 1.80 cum. Earn 27 hours 1.80 cum.	Earn 39 hours 2.00 cum. Earn 39 hours 2.00 cum.	Earn 51 hours 2.00 cum. Earn 51 hours 2.00 cum.	Earn 66 hours 2.00 cum. Earn 66 hours 2.00 cum.	Earn 81 hours 2.00 cum.	Earn 96 hours 2.00 cum.	Earn 111 hours 2.00 cum.	2.00 cum.

Students Receiving Tap Need to Know That:

TAP Aggregate – Students enrolled in associate degree programs can receive up to six semesters of TAP (six payment points per semester) for a total of 36 payment points. Bachelor degree students can receive up to eight semesters of TAP or 48 payment points. Students who qualify under the Educational Opportunity Program (EOP) can receive up to 10 semesters or 60 payment points. TAP payments received at other schools are still counted in the aggregate when students transfer schools.

Repeating Courses – Students must enroll in a minimum of 12 new credit hours each semester to qualify for TAP. Under many academic programs, repeating a course that previously received a passing grade cannot be included as part of the required credit hours for that semester when determining TAP eligibility. However, the following exceptions apply: 1) when a failed course is repeated, 2) when a grade received is passing at the institution, but is unacceptable in a particular program as stated in the college catalog by the academic department, and 3) when a course may be repeated and credit is earned each time. The Student Records and Financial Services Office determines if students are out of SAP-POP compliance as part of the TAP certification process. Students are notified of their ineligibility by the Student Records and Financial Services Office.

Withdrawal or Leave of Absence – Students who received TAP for a semester from which they withdrew or took a leave of absence and did not earn any academic credit are not considered to be fulfilling the pursuit of program requirements and would be made ineligible for TAP for the next enrollment period.

2.0 GPA – Students having received four semesters of TAP (24 payment points) must have a 2.0 cumulative GPA (out of a possible 4.0) to continue receiving TAP. This includes students who may have received TAP payments at another college prior to enrolling at Alfred State College.

Sit-Out – Students who become ineligible to receive state financial aid for a semester due to poor academic performance or failure to meet pursuit of program requirements may sit out for one year. Students would then be eligible to receive the state financial aid for which they qualify upon their return. Sit-out does not apply to the TAP 2.0 requirement.

Aid to Part-Time Students (APTS) – Although part-time students are not eligible for TAP, APTS is deducted from a student's available TAP payments. Two APTS payments (three points each) equal one TAP payment (six points).

Part-Time TAP – Similar to APTS, part-time TAP is also deducted from a student's total available TAP payments. However, instead of using three points for each semester of part-time enrollment, points are used according to the actual number of part-time credit hours taken against the percentage of a full TAP award.

Federal Criteria/Requirements: Reviewed at the end of each semester.

Credit Hours Attempted	Completion of Credit	Minimum GPA
0 - 19	67 percent	1.30
20 - 36	67 percent	1.75
37 - 50	67 percent	1.90
over 50	67 percent	2.00

Students Receiving Federal Title IV Aid Need to Know:

Degree Completion – Students must complete their degrees or certificates within 150 percent of the normal credits required for completion. Students who change programs are considered to be at the semester level based on the number of transfer credits accepted by the new program. Example: If an AAS student needs 60 credit hours to complete a degree, he/she cannot receive aid after 90 credit hours have been attempted.

Federal Warning – Students found to be below the academic standards for federal aid eligibility will be placed on federal aid warning for one semester. Students who have not regained eligibility by the end of the warning semester will be ineligible for federal aid.

Waiver Procedures

Students who experienced extenuating circumstances that affected their academic progress resulting in the loss of their financial aid eligibility may file a waiver to appeal the SAP-POP and/or Title IV requirements. Students interested in filing for a waiver are encouraged to contact the Student Records and Financial Services Office for instructions. Waiver procedures are also provided to students in writing when they receive their notice of ineligibility.

Remedial Courses

Alfred State College offers credit and non-credit remedial courses which will be counted toward the number of credit hours attempted and taken for the purpose of financial aid. However, remedial courses may not be counted in the number of credit hours earned.

Incomplete Course Work, Withdrawals, and Repeated Course Work

Course work that has not had a grade issued will not count in credit hours earned and may impact financial aid eligibility. Withdrawal from courses that will have a grade of withdrew passing/failing will be counted in hours attempted and/or earned. Courses repeated due to a failing grade will have the highest earned grade count in hours attempted and/or earned.

Questions

Questions in regard to any of the above information can be directed to: Alfred State College, Student Records and Financial Services Office, 10 Upper College Drive, Alfred, NY 14802. Phone 1-800-4-ALFRED or e-mail sfs@alfredstate.edu.

SCHOLARSHIPS AVAILABLE AT ALFRED STATE

Alfred State College is proud of its commitment to recognize outstanding students by offering numerous scholarships. Since it is the desire of Alfred State College to award scholarships to as many students as possible, students do not receive more than one scholarship. Acceptance deposits must be paid by the due date in order to be eligible for scholarship consideration as well as to maintain any scholarship awards. The following scholarships are available while funding exists, to incoming students who have been accepted for the fall semester into a regular program for full-time study:

Academic Distinction Scholarship - $1,000 awarded to academically talented students; students must maintain required GPA to receive funding in subsequent semesters.[1]

Accentuate Alfred State Regional Scholarships - Awarded to academically talented incoming freshmen who reside in school districts defined as the residences of Alfred State College faculty and staff.[2]

Agricultural Scholarship Fund - Awarded to students enrolling in an agriculture program.[2]

Alfred State College Distinguished Scholars Program: *(Please note that the Distinguished Scholars Program Scholarships are for first-time freshman students only. Students must live on campus and be U.S. citizens or permanent residents to receive these three scholarships. Scholarships are guaranteed to qualified students who are accepted and meet the necessary criteria by March 1.)*

> ***Excellence in Education Scholarship*** - Free tuition (equivalent to NYS tuition rate), room (standard room, double occupancy), and board (choice of meal plan); multiple scholarships available; students must possess a 93 or better cumulative high school average through their junior year; at least a

1200 (critical reading and math) combined SAT or 26 composite ACT score is required, and students must apply for financial aid with any TAP award applied toward costs of tuition; must maintain required GPA to receive funding in subsequent semesters.[1]

Presidential Scholarship - Free room (standard room, double occupancy); multiple scholarships available; students must possess a 90 or better cumulative high school average through their junior year; at least a 1150 (critical reading and math) combined SAT or 25 composite ACT score is required; must maintain required GPA to continue to receive free room in subsequent semesters.[1]

All-American Scholarship - Free board (choice of meal plan); multiple scholarships available; students must possess an 88 or better cumulative high school average through their junior year; at least a 1100 (critical reading and math) combined SAT or 24 composite ACT score is required; must maintain required GPA to continue to receive free board in subsequent semesters.[1]

Allegany County School Food Service Association Scholarship - $200 awarded to a student with a financial need from Alfred-Almond, Andover, Bolivar-Richburg, Friendship, or Wellsville school districts who is entering the culinary arts program; letter of interest should be sent to the Culinary Arts Department.[5]

ALSTOM Power Inc., Air Preheater Company Scholarships - $300 awarded to students enrolling in the electrical construction & maintenance electrician, machine tool, and welding programs.[2]

Alumni Scholarship - $500 a year awarded to child or grandchild of an Alfred State College alumnus; multiple scholarships available; student must have at least an 85 high school average (through end of junior year); a letter must be sent to Admissions Office indicating student's name as well as the alumnus' name at graduation, the year graduated from Alfred State, and the student's relationship to the alumnus.[4]

Alumnus 1939 Scholarship - Awarded to academically talented incoming freshmen.[2]

Association of Diesel Specialists (ADS)/Ortner Scholarship - Up to $500 awarded to students enrolling in heavy equipment: truck & diesel technician; applications available from www.automotivescholarships.org.[3]

Athletic Talent Grants

These grants are awarded to outstanding athletes on a very competitive basis. Selection is made by the Athletics Department:[5]

Basketball (Men's) Talent Grant
Basketball (Women's) Talent Grant
Football Talent Grant
Lacrosse (Men's) Talent Grant.

BG Scholarship - Awarded to incoming and current students; information and application available at www.bgscholarship.com.[3]

Lee Brasted Engineering Science Endowed Scholarship - Awarded to students enrolling in the engineering science program.[2]

Evelyn C. and Rumsey C. Billings Scholarship - Awarded to incoming students from Steuben and Otsego counties.[2]

Bully Hill Vineyards Award - $1,000 awarded to incoming students enrolling in the culinary arts or culinary arts: baking, production and management programs; scholarship application available on the Alfred State College Web site.[3]

Anthony C. Cappadonia Scholarship Fund - Awarded to an incoming student with a musical background who was a member of his/her high school choir; must have an 80 or better high school average through the end of the junior year; letter of interest should be sent to the Admissions Office.[5]

Cross Connection Control Foundations of the Niagara Frontier, Inc., Scholarship - Awarded to student enrolling in air conditioning and heating technology program.[2]

Culinary Arts Scholarship - $1,000 awarded to incoming students enrolling in culinary arts or culinary arts: baking, production and management program; students must have an 80 or better high school average through the end of their junior year and be in the top 50 percent of their class; scholarship application available on the Alfred State Web site.[3]

Daniel DiFrancesco Memorial Scholarship - Awarded to an incoming student enrolling in an agriculture program who exhibits leadership and/or service to school and/or the community, exhibits a strong sense of responsibility to self and dedication to family, and possesses a love of the outdoors and demonstrates an appreciation of nature; letter of interest should be sent to the Admissions Office.[5]

Max & Marian Farash Foundation Scholarship - Awarded to students enrolling in mechanical engineering technology or air conditioning and heating technology programs.[2]

Friendship Designated Scholarship - $500 awarded to graduates of Friendship Central School accepted into a regular program at Alfred State.[2]

Vernon Gleasman SAE Scholarship - One $500 scholarship awarded to academically talented incoming or returning engineering technology student; preference will be given to student enrolling in mechanical engineering technology or mechanical design engineering technology; application available from SAE Web site (www.sae.org/scholarships/); completed application deadline is March 1.[3]

Michael K. Gowdy Memorial Scholarship - Awarded to academically talented students from Wellsville High School.[2]

W.R. Grace Scholarship - Awarded to a student accepted into the biological science program.[2]

Graham Nursing Scholarship - Awarded to incoming nursing students; preference given to students from LeRoy Central or Warsaw Central School districts, then to students from Wyoming County, then to students from the rest of New York State.[2]

International Excellence Scholarship - Awards $7,000 to international students who meet two of the following three criteria: 213 TOEFL exam score (79-80 on Internet-based exam, 550 on paper exam), 3.25 college cumulative grade point average (a 90 overall high school average may be substituted), and/or 1200 (critical reading and math) combined SAT score.[1]

International Merit Scholarship - Awards $3,000 to international students who meet two of the following three criteria: 195 TOEFL exam score (71 on Internet-based exam, 525 on paper exam), 3.0 college cumulative grade point average (an 88 overall high school average may be substituted), and/or 1100 (critical reading and math) combined SAT score.[1]

Eugene Jacobs Memorial Educational Foundation Scholarship - $1,000 awarded to student enrolling in a baccalaureate degree program; student must have at least an 85 overall high school average through the junior year or a 3.0 cumulative grade point average to be considered.[2]

John J. Lorenzen Memorial Scholarship Fund - $1,000 awarded to incoming student who is a resident of New York State and is committed to a career in the automotive industry; applications available from www.automotivescholarships.org.[3]

Rudolf "Rudy" Mazourek Memorial Annual Scholarship - Awarded to incoming student enrolling in the autobody repair program; preference given to students from Newfield High School or another high school in Tompkins County.[2]

Lawrence “Bud” McCarthy Educational Foundation Scholarship - $1,000 awarded to incoming student with demonstrated skills in a related technology area; students must have at least an 80 high school average through the end of their junior year to be considered.[2]

Miller-Neverett Scholarship - Awarded to an academically talented student who demonstrates potential for campus leadership as evidenced by previous involvement in organizations and activities; letter of interest should be sent to the Admissions Office by March 1.[3]

Ortho-Clinical Diagnostics, Inc., Scholarship - Awarded to an academically talented student entering the forensic science technology program.[2]

Out-of-State Scholarship - $2,000 awarded to out-of-state students who will be studying on campus; students must possess an 85 or better cumulative high school average through the end of the junior year and be accepted by March 1.[1]

John Plail Work Ethic Scholarship - Awarded to students enrolling in the accounting, business administration, business management, or financial services programs; students must have an 80 or better high school average through the end of their junior year and exhibit leadership achievements in high school; letter of interest as well as a written document identifying student's goals for pursuing business as a career and the importance of having a strong work ethic should be submitted to the Admissions Office by April 1.[4]

Praxair Designing the Future Scholarship - $1,000 awarded to academically talented incoming students enrolling in one of the Drafting/CAD programs; students must possess an 85 or better cumulative high school average to be considered.[2]

Floyd and Eleanor Rose Scholarship - Awarded to academically talented students from Western New York State and Northern Pennsylvania enrolling in either the agricultural technology or building trades: building construction programs; students must have an 85 or better high school average through their junior year to be considered.[2]

Russo Family Scholarship - Awarded to academically talented incoming students.[2]

Salvation Army Annual Scholarship - Awarded to an incoming student enrolling in the nursing or human services programs; must be in the top 50 percent of class and demonstrate positive relationships with other students, contribute to the community, demonstrate a good work ethic as well as financial need; high school/college transcript or GED, two recommendations (one academic and one character reference), and an essay (not to exceed 500 words) describing yourself and why you wish to pursue your chosen career as well as a statement of need and any community volunteer service should be forwarded to the Student Records & Financial Services Office, Alfred State College.[3]

Adele Schieder Memorial Scholarship - Awarded to academically talented incoming student.[2]

Shaw Family Scholarship - Awarded to incoming freshman enrolling in an agriculture program.[2]

Ernest and Fern Snyder Scholarship - Awarded to student enrolling in an agriculture program; student must be from Western New York State (west of Rte. 81).[2]

Steuben Trust Company Annual Award - Awarded to academically talented student(s) from Allegany or Steuben counties enrolling in the accounting, business administration, or financial services programs.[2]

Richard D. Stillman Memorial Scholarship - Awarded to incoming student who was a member of his/her high school band or choir; must have an 80 or better high school average through the end of junior year; letter of interest should be sent to the Admissions Office.[4]

Albert and Judith Styrcula Endowed Scholarship - Awarded to academically talented students from Dundee High School or Yates County.[2]

Robert A. Sweeney Scholarship - Awarded to student from Steuben County enrolling in a business program.[2]

Top Hat Scholarship - $1,200 awarded to an incoming student enrolling in culinary arts or culinary arts: baking, production and management program; must have an 80 or better high school average through the end of the junior year and be in the top 50 percent of class; scholarship application available on the Alfred State Web site.[3]

Transfer Scholarship - $1,000 awarded to transfer students with preference given to associate degree graduates entering a corresponding baccalaureate degree program; competitive academically; students must have a 3.25 cumulative GPA and demonstrate continuous full-time college attendance for consideration.[1]

Evelyn Turner Culinary Arts Annual Scholarship - $1,000 awarded to academically talented students entering the culinary arts and culinary arts: baking, production & management programs.[2]

Uni-Select USA Scholarship - $2,000 per year for two years awarded to students enrolling in the automotive parts technology program; a letter of interest explaining why the student feels he/she should be granted a scholarship should be submitted to the Office of the Dean, School of Applied Technology.[5]

Vocational Excellence Scholarship - $1,000 per year for two years to students entering a program taught at the School of Applied Technology, Wellsville; multiple scholarships available on a selected basis. To be considered, students must have at least an 83 high school average through the end of their junior year and demonstrate vocational excellence through a combination of education, employment, competition, military experience, and other verifiable activities. Students should submit a letter to the Admissions Office indicating how they have excelled in the vocational area as well as two letters of recommendation from qualified individuals verifying skill level; students must maintain at least a 2.5 GPA to continue funding; this scholarship may not be awarded to a President's Scholarship recipient and is available while funding exists.[4]

Bea L. Williams Scholarship - $1,000 awarded to student attending school in Western Steuben County; applications available in high school guidance offices in early spring; academics as well as school and community activities will be considered in the evaluation process.[3]

The following scholarships are awarded by the appropriate academic department to continuing Alfred State students based on performance while at Alfred State College:

Alstom Power Inc., Air Preheater
American Institute of Architects Southern New York Chapter Annual Scholarship
Animal Welfare Institute Annual Scholarship
Anthony Carino Memorial Endowed Scholarship
Automotive Service Excellence (ASE) Scholarship
Barbara Londrey Memorial Scholarship
Bethesda Scholarship Fund
Bully Hill Vineyard Culinary Arts Award
Butera Scholarship in Business Technology
Carroll J. Locke Memorial Scholarship
Comstock Memorial Scholarship
Creative Writing Award
Culinary Arts Alumni Scholarship
Culinary Arts Award
Culinary Arts Continuing Education Award
Culinary Arts Perfect Attendance Award
Culinary Arts Performance Award
Dalrymple Companies Annual Scholarship
Donald Holzer Scholarship
Donald Simons Award
Dr. Khalid Ashraf Memorial Award
Doris Harriger Memorial Scholarship
Drafting Achievement Award
Drafting/CAD Freshman Subsidiary Annual Award
EJ Brown Memorial Scholarship

Eddy E. Foster Memorial Fund
Educational Foundation of Alfred, Inc., Scholastic Scholarship
Eleanor Graves Memorial Scholarship
Evelyn Turner Culinary Arts Annual Scholarship
Frank and Mary Beaton Memorial Award
Henry and Rosa Gabriel Scholarship
Hunter Family Scholarship
Information Technology Award
Joel French Memorial Scholarship
Kathy Barnes Honorary Guardian of Nursing Scholarship
Laird Severance Memorial Award
Margaret A. Pfuntner Scholarship
Marilyn Lusk Award for Clinical Excellence in Nursing
Mary Heider Memorial Award
Matthew Burzycki Memorial Scholarship
Norman A. Diedrich Award
Nursing Scholarship
Odelphia A. Vander Linde Memorial Scholarship Fund
Paul Buckman Memorial Scholarship
Phi Theta Kappa Scholarship
Phyllis S. Jones Memorial Award
Praxair Designing the Future Scholarship
Professor Brian Gillespie Scholarship
Prose Writing Award
Ralph B. Harmon Memorial Scholarship
Rauhe Annual Award
Reynolds Family Mathematics Achievement Award
Robert and Janet Love Nursing Scholarship
Robert Sullivan Culinary Arts Award
Saccone Memorial Scholarship
Senior Award for Academic Distinction – English & Humanities
Shirley Hellwig Annual Scholarship
Stephens Mills Grange Scholarship
Suzanne Malachesky Memorial Scholarship
Top Hat Scholarship
Vincent Lockwood Memorial Scholarship
Wallace "Pete" and Kathleen MacDonald Scholarship
Western NY Veterinary Medical Association Scholarship
Will Arlow Motorsports Annual Award

The following scholarships are awarded by the Student Records and Financial Services Office based on financial need. There is no application process other than completing the Free Application for Federal Student Aid (FAFSA):

Alumni Association Advancement Scholarship
Charles A. Orlando Scholarship
Dr. Charles Spinelli Annual Award
Dr. David H. Huntington Scholarship
George Whitney Scholarship
Hornell Association Scholarship
Koller Student Service Endowed Scholarship
Lyle McCaffery Memorial Scholarship
Middleton Memorial Fund
Mike Taylor Scholarship
Northern Lights Scholarship
Paul B. Orvis Scholarship
Radia Khouri Rezak Family Scholarship
Robert E. Wood Jr. Memorial Scholarship

Roland D. Hale Need Based Scholarship
William H. MacKenzie Memorial Scholarship

[1]***No scholarship application necessary.***

[2]***No scholarship application necessary; awarded by specific criteria; students must have minimum high school average of 80 through end of junior year unless otherwise noted; scholarships awarded in March.***

[3]***Scholarship application necessary.***

[4]***Send letter of interest and any other information as indicated to the Admissions Office; decisions ongoing while funding exists unless otherwise indicated.***

[5]***Send letter of interest to specified individual and/or department.***

Please note that students studying through the Internet are not typically eligible for scholarships.

Scholarships are made possible by the generosity of the Alfred State College Development Fund, Inc., the Educational Foundation of Alfred, Inc., the Alumni Council, private donors, and Alfred State College faculty and staff.

RESIDENTIAL LIFE

RESIDENTIAL LIFE

Residential Life believes that a student's residence hall experience should be as individually suited to his/her needs and interests as possible. On this basis, Alfred State offers a life-style approach to residence hall living. Within the limits of College policy, various life-style areas are offered, and students may choose the area which best suits them. The following styles are located in designated areas of certain residence halls:

No Smoking – All of our residential facilities are smoke-free.

Baccalaureate Lifestyle – Available in Peet Hall only. This lifestyle option provides an opportunity for students in the baccalaureate programs to reside together.

Wellness Lifestyle – This lifestyle is designed for the student interested in living within a tobacco-free and alcohol-free area. All guests and visitors are also required to abide by the substance-free lifestyle while visiting the area. Each student signs a contract pledging to remain substance free while living in this area. If you are not totally committed to the restrictions, this lifestyle is not for you. Specialized holistic programs occur throughout the year in these areas.

24 and Over Lifestyle – This lifestyle option was created to address the special needs of non-traditional students, e.g., self-governed quiet hours and the ability to stay in the residence hall during breaks. Available in Main Gate B only.

Quiet Study – Guarantees a student a quiet area to study and reside. Mandatory 24-hour quiet. Stereos and radios are allowed but kept at a minimal noise level. Areas are available in certain residence halls.

Over 21 – A student must be 21 or older at the beginning of the academic year. MacKenzie West, North, and Main Gate A offer this lifestyle option.

Living and Learning Community -- First-year student community in Burdick Hall. As a first-year student, you have the opportunity to become a member of our Management Living and Learning Community (LLC) and take the knowledge you are acquiring in the classroom and connect it with experiences outside the classroom, making you more prepared to tackle your college experience than other students! For more information - http://www.alfredstate.edu/LLC.

Townhouse Style Living -- Apartment-style living for sophomores, juniors, and seniors.

Services available in the residence halls include laundry and vending machines, kitchenette, a recreational room, study areas, and computer labs.

ON-CAMPUS HOUSING REQUIREMENTS/CAMPUS WAIVER PROCEDURES

SUNY – Board of Trustees' Policy

Every student in full-time attendance at a state-operated unit of the university, other than married students or students residing with a parent or parents, shall be required to live in a dormitory maintained and operated by such a unit or to have the permission under such provisions as may be made therefore by the chief administrative officer of such unit to live off campus.

Local Campus Policies

I. WAIVERS

Any full-time student who wishes to live off campus must request a waiver of the Board of Trustees' Policy. This waiver form is available from the Office of Residential Life and online. All waiver requests will be considered in accordance with the SUNY policy and the Board of Trustees' intent to maximize the educational process. Certain conditions, if met, assure an individual of permission to live off campus. These specific exceptions are as follows:

General Eligibility: Married students, students providing direct care for a legal dependent, students 23 years of age or older, students already possessing a baccalaureate degree (reviewed for verification), or a student residing with a parent, grandparent, or court-appointed legal guardian at that person's permanent home address who is commuting fewer than 60 miles, one way (notarized statement and supplemental statement required).

Honorably Discharged Veterans of the U.S. Armed Forces: DD-214 must be provided as documentation.

Academic Eligibility: Fourth-year students in baccalaureate programs are eligible for off-campus status subject to the following minimum requirements: Good academic standing, with a minimum cumulative grade point average of 3.00, and no current disciplinary status through the time of off-campus occupancy.

Greek Organization Eligibility: Information relative to organization eligibility is available from Residential Life. Individual members of eligible Greek organizations may apply for a housing waiver if all criteria are met:

- Individual members must possess a 2.00 cumulative grade point average and a 2.00 semester grade point average (prior semester) at the time a housing waiver is requested.
- Individual members may not be on any disciplinary sanction and must have completed any special conditions as a result of a past sanction (e.g., alcohol assessment, Signals, community restitution projects, etc.) at the time a housing waiver is requested.
- The organization in which they are a member maintains continuing authorization for off-campus communal residency.

All other reasons will be reviewed according to the Reasons for Waiver stated on the form, and will be considered according to uniformity and intent of the Board of Trustees' policy. Submission of false or intentionally misleading statements may result in waiver revocation, campus disciplinary sanctions, and other penalties. All waivers are granted for the academic year or the remaining portion thereof. Each student must resubmit a waiver application each year (s)he is in attendance.

II. DETERMINATION OF FULL-TIME STUDENT STATUS

1. A full-time student is an individual enrolled for 12 or more credit hours (including credit hours added after registration day).
2. Students initially registered in a part-time status who add sufficient courses to attain full-time status are subject to campus housing policies unless a waiver is approved.

III. WAIVER PROCEDURE

1. Waiver processing will begin Feb. 15 or as soon as predictable thereafter for fall semester consideration. Waiver processing will begin Nov. 1 or as soon as predictable thereafter for spring semester consideration.
2. The License for Residence is a full academic year agreement and takes precedence over any waiver application. Interim requests for release are processed according to current campus policy.
3. At the time a housing waiver application is submitted and approved, any pre-determined housing assignment is released.
4. ***Initial Request:*** Any individual who is not living with parents and who wishes to live off campus must attend and participate in a required "living off-campus" educational seminar prior to the submission of a housing waiver application.
5. If the reason for off-campus waiver is not one of the three general exceptions noted above, a detailed explanation of the reason(s) must be provided to the director of college housing at the time of submission.
6. ***Review:*** The director of college housing or his/her designee will review all requests and with the intent of the Policy of the Board of Trustees and the stated purpose of the College Policy render a decision. This decision will be given within five (5) business days, when possible. Note: Missing documentation will delay processing.
7. Decisions based upon health or psychological grounds require consultation with and recommendation of campus personnel in the appropriate professional areas. Permission for disclosure authority is granted by the submission of the application.
8. ***Appeal****:* A denied waiver may be appealed to the associate vice president for Student Life. The appeal must be in writing and address the reason(s) given for the denial of the initial request. The appeal must be sent within five (5) business days of receipt of the initial decision.

9. ***Appeal Decision:*** All appeals will be reviewed in accordance with the intent of the Policy of the Board of Trustees and the stated purpose of the College Policy. A written decision will be given within five (5) business days, when possible. There is no appeal of the associate vice president's decision.

STUDENT ACTIVITIES and ORIENTATION

Life at Alfred State College is more than classes, papers, books, and tests. Some 80 percent of a student's time is spent outside of the classroom. Toward that end, Alfred State College offers numerous co-curricular activities.

Each student at ASC pays a mandatory activities fee which is administered by the Student Senate. The Office of Student Life assists nearly 70 campus clubs and organizations which exist specifically for you. The key is YOU! Your involvement, your fun, your personal growth.

Students in search of leadership opportunities will benefit from the Office of Student Life and the Student Senate-sponsored Leadership Development series, along with countless other leadership development activities.

AUXILIARY CAMPUS ENTERPRISES AND SERVICES

Auxiliary Campus Enterprises and Services (ACES) is a not-for-profit corporation responsible for many services on campus. A board of directors consisting of faculty, students, and administrators governs activities of the corporation. ACES manages campus food service, special events and catering, snack bars, campus stores, food/beverage and laundry vending services, an amusement arcade, Lake Lodge, telephone, and cable TV services, transportation services, and accounting and bookkeeping services.

DINING SERVICES

Students living in residence halls are required to participate in a dining program. All dining programs are controlled by a computer system using encoded Campus ID Cards. Individuals may elect a program based on their specific needs from a variety of meal plan options as described in promotional material appearing on College Web sites and the student billing. Participants are allowed considerable flexibility as they may eat in the dining hall or by using Dining Dollars in the fast-food operations.

Visit the College Web site www.alfredstate.edu/aces for up-to-date details on dining and other ACES services, along with their hours of operation.

COUNSELING SERVICES

The Office of Counseling Services provides a wide array of services to the students at Alfred State.

COUNSELING

Counseling can complement the academic life of students by helping them to gain personal insights and to more clearly define educational and career life plans. Counseling offers students the opportunity to explore their feelings and to discuss any concern in a confidential setting. All records and counseling communications are confidential and will not be released without the student's written consent. Programs can also be developed for residence halls or classroom presentations on such topics as: test anxiety, eating disorders, substance abuse, and relationships. Visit www.alfredstate.edu/counseling for more information.

CAREER EXPLORATION

Specialized services are offered in career and educational planning, including individual and group career counseling, vocational testing, and the use of computerized guidance programs. These services assist those students who find it necessary to re-evaluate or modify their educational plan. Career Development also maintains a Career Resource Library with a wide range of career materials, college catalogs, and transfer information for those students who wish to continue their education. Online assistance is also available at www.alfredstate.edu/career-development.

CAREER DEVELOPMENT

Career Development offers a wide variety of services for students who are implementing their career plans. These services include assistance with developing career plans and goals, resume development, interview preparation and workshops. This area also maintains job postings for full, part-time, and summer employment as well as schedules campus recruitment opportunities.

Students are encouraged to participate in experiential education opportunities. Experiential education, in the form of internships and co-ops, provides a competitive edge when it comes time to search for a job. Experiential education opportunities for students are listed on our Web site. Students should begin searching for these opportunities early in the fall semester.

Many of the services offered through this office can also be accessed through its Web site, www.alfredstate.edu/career-development. All students and alumni are encouraged to take advantage of the services offered.

STUDENT DISABILITY SERVICES

Academic and non-academic assistance is provided to students with self-identified disabilities (permanent or temporary) who have provided appropriate documentation to the Office of Student Disabilities Services (Hunter Student Development Center, Alfred campus; Student Services Building, Wellsville campus.)

Academic services may include faculty conferencing, tutoring, assistive technology, notetakers, and testing accommodations. Non-academic services may include residence hall accommodations and agency referrals. Attendant care is not provided. Accommodations are decided by the counselors from Student Disabilities Services after reviewing the appropriate documentation and talking with the individual student. Please remember that self-advocacy is essential to receiving assistance.

MULTICULTURAL AFFAIRS

Alfred State College is a community which promotes diversity and strives to create an atmosphere free of bias and prejudice in order to prepare students to lead successful and socially useful lives in a diverse society. Many organizations work toward this goal by providing educational, cultural, and social events.

HEALTH SERVICES

Health Centers on each campus provide health education as well as treatment for student illness and accidents. A doctor, nurse practitioner, and registered nurses are available at posted hours. A mandatory fee allows the student to obtain medicines and medical supplies provided by Health Services without further cost. Health Center records are kept strictly confidential.

Health Services at Alfred State College is accredited by the Accreditation Association for Ambulatory Health Care, 9933 Lawler Ave., Skokie, IL 60077-3708; (847) 676-9610

CAMPUS SHUTTLE SERVICE

The College provides a bus service which circles the main campus continuously throughout each class day from 8 a.m. - 5 p.m. including traveling to the Anderson Horticulture Center. The College also provides a shuttle service back and forth each day to the Wellsville Campus. These buses have various morning departure times from the Alfred campus and afternoon departures from the Wellsville campus.

STUDENT/VISITOR MOTOR VEHICLES

All vehicles, including automobiles, trucks, motorbikes, motorcycles, and other motor vehicles to be operated or parked on College property must be registered. In Alfred, motor vehicles are registered at the University Police Office. On the Wellsville campus, vehicles are registered at the Student Services Office in the Student Services, or “H” Building. Temporary parking permits and guest parking permits may be obtained at either office.

SAFETY

THE COLLEGE’S EXPECTATIONS

Alfred State College has established high expectations for all members of the College community. These are summarized by the Principles of Community which have been adopted by the Student and Faculty Senates. More detailed information on these, and on the processes associated with addressing individuals whose actions are not consistent with the Principles, is spelled out in the Codes of Student Conduct and Academic Integrity. The College encourages all students to review these items before enrolling at the institution.

THE CAMPUS ENVIRONMENT AND SAFETY

The Alfred State College family is not immune or isolated from the issues which impact colleges and our nation in general. These include the use of illegal substances and alcohol, personal safety, and other activities which are detrimental to all members of the community. Acknowledging this, Alfred State College continues to be proactive in responding to behaviors which jeopardize members of the College community and provides a variety of support services to assist students having difficulty in adjusting to the College environment.

A few examples which are indicative of the College's response include the following:

- All residence halls are locked from 10 p.m. until 7 a.m., with residents using their building keys for entry; student security staff is available in each hall from midnight until 3 a.m.
- Residence halls are staffed by trained student staff members living on each floor and a professional staff member assigned to each hall
- University Police staff is available on a 24-hour, seven-days-a-week basis to address emergency safety- and health-related problems
- Campus Health Services (Alfred and Wellsville locations) provide students access to health care professionals including physicians at no cost during scheduled hours.
- Violations of the College's Code of Student Conduct are addressed by all members of the Student Life and University Police staffs.
- Services are available to assist students who are attempting to address a variety and complexity of personal, financial, and vocational issues.

UNIVERSITY POLICE

The University Police Office is located on Lower College Drive in the Theta Gamma (TG) House on the Alfred campus. It is open 24 hours a day, seven days a week. The University Police Office on the Wellsville campus is open Monday through Friday from 8 a.m. to 4 p.m. and is located in the "H" Building.

The University Police Office provides all law enforcement including criminal, traffic, or environmental law for the campuses at Alfred and Wellsville. This department is also responsible for handling all emergencies and assisting our campus and visiting population with multiple services. Examples of services are assisting with vehicle unlocks and helping locate the proper campus resources with electrical, plumbing, or other maintenance needs. University Police is also the "depository" for all lost and found items.

If you are in need of service, you can contact the University Police Office at 3999 on the Alfred campus. In an emergency, you can dial 911 or use any of the blue light emergency telephones located throughout the campus.

ALUMNI COUNCIL

Organized in 1961, the Alfred State Alumni Council has more than 38,000 life-time members. Its mission is to promote and enhance the successful future of Alfred State College, its students and alumni by providing programs and services which build relationships, foster personal and professional growth, and support excellence in education.

The major objectives of the Alumni Council are

1. Promoting and increasing the fellowship of students and alumni of Alfred State College.
2. Serving as a liaison between Alfred State College, its alumni and students in order to foster and maintain close and mutually beneficial ties.
3. Maintaining and promoting loyalty of the alumni of Alfred State College.
4. Assisting and promoting the interest of Alfred State College, its students and alumni.
5. Developing programs that support the goals and objectives of the campus, including campus fundraising, in conjunction with the Office of Institutional Advancement.

The Alumni Council provides a variety of programs and services to students and the general membership. Some of these are

- Newsletter - *Transitions*
- Alumni Records Update Service
- Annual Alumni Reunion - Homecoming

- Assistance with Program-specific Events
- Regional Alumni Events, including chapters in Buffalo, Rochester, Southern Tier
- Scholarship Program

The Office of Alumni Relations is located on campus in the Huntington Administration Building. All alumni and current students are eligible to fill respective positions on the Alumni Board through the annual election process. For more information related to the above programs, please stop in or call (607) 587-3931.

COLLEGE LIBRARIES

The libraries on the Alfred and Wellsville campuses are strongly committed to serving the information and research needs of students and faculty. The collections on both campuses encompass materials in a variety of formats - electronic, print, and visual media. To access the libraries' holdings, visit the library Web page at www.alfredstate.edu/library. Materials not available locally may be requested through the interlibrary loan service.

The Walter C. Hinkle Memorial Library on the Alfred campus houses a collection of approximately 64,000 book volumes and 2,500 video titles, and has print subscriptions to 16 newspapers and some 200 journals and magazines. The Wellsville campus library holds about 3,700 volumes, 48 current journal titles, and five daily newspapers. The library contains an extensive collection of automotive manuals in print and microfiche, as well as materials in a variety of audio-visual formats.

Students and faculty on both campuses have access to more than 64,000 electronic journals and magazines available from 48 online databases. A good number of these are provided through SUNY*Connect*, an initiative to share library collections and services across most of the 64 SUNY campuses.

Also located in Hinkle Library is the Jean B. Lang Western New York Historical Collection, a unique repository of historical and genealogical materials that focuses on Alfred, Allegany County, and western New York State.

Both the Alfred and Wellsville campus libraries provide public access computers and printers. Laptop users in Alfred may take advantage of the wireless connectivity in the library, using their own laptops or those available for loan. Both the Alfred and Wellsville campus libraries are accessible to those with disabilities, and are open to the general public at no charge.

The effective use of information is a challenge facing everyone in this electronic age. To help meet this challenge, Alfred State's library faculty offer a range of programs, from individualized reference service to classroom instruction on research techniques and sources.

ACADEMIC INFORMATION

Alfred State College offers more than 70 majors in programs based in the arts and sciences, applied technology, and management and engineering technology.

Administratively, the College is broken down into three schools:

- School of Arts & Sciences
- School of Management & Engineering Technology
- School of Applied Technology

Faculty and staff focus on programs within their areas of expertise. Depending on major, each student will find most courses taught within a particular area of study. However, most students will also be required to take some courses within other disciplines.

INTERNSHIPS AND CAREER DEVELOPMENT

The time to begin thinking about your career is in your freshman year! Career development assistance begins with the identification of career goals and the development of a plan to meet those goals. Plans frequently include résumé assistance, identification of available experiential education opportunities, individual employment/career counseling, interview preparation, and workshops.

Students have the opportunity to meet with employers at fall and spring career fairs, information sessions, and on-campus interviews.

Job opportunities are posted daily for current students and alumni on the Career Development Web page.

ACADEMIC MINORS

An academic minor at Alfred State College is an optional program of study available to matriculated baccalaureate students. A minor may be used to complement the major course of study, broaden and enhance career opportunities, gain expertise in an area of interdisciplinary studies, or provide an in-depth study in a subject of special interest.

A minor is described as a thematically related set of academic courses, consisting of no fewer than 18 credit hours. A minor will be officially recorded on the transcript when a student has satisfied all requirements for the major baccalaureate program and the minor, and has attained a 2.0 grade point average in the courses approved for the minor.

The following academic minors are available to students studying in a baccalaureate program: **Applications Software Development, Business Administration, Computer Technology, Construction Management, Digital Media and Animation, Information Security, Information Technology, and Interior Design.**

Students wishing to pursue minors should first discuss options with their advisers and meet with the department chair where the minor resides to determine specific course requirements. Students must apply for minors on degree application forms.

EMPLOYMENT AND TRANSFER

The Career Development Office surveyed the members of the May 2010 graduating class. A 73 percent college-wide response was realized from the survey. Alfred State College Technology Services generated the statistical information utilized in the preparation of this report in June 2011.

Highlights:

- 62 percent of the graduates were employed after graduation.
- 94 percent of the employed graduates were employed in jobs related to their field of study at Alfred State College.
- 37 percent of the graduates transferred to four year colleges and universities.

ARTICULATION AGREEMENTS

The following is a listing of agreements which exist between Alfred State College and other institutions. For information on two-plus-two transfer agreements into Alfred State's baccalaureate programs and one-plus-one transfer programs on page 15.

ARTICULATION AGREEMENTS WITH PRIVATE INSTITUTIONS:

Alfred University
Accounting, Business Administration, Athletic Training

American Samoa Community College
Health Information Technology

Bermuda College
Air Conditioning and Heating Technology, Building Trades: Building Construction, Masonry

Canisius College
Financial Services, Business Administration, Marketing

Elmira Business Institute
Health Information Technology

Hilbert College
Accounting, Financial Services, Business Administration, Marketing

Niagara University
Accounting, Business Administration, Marketing

New York Chiropractic College
Liberal Arts & Sciences: Math & Science

Rochester Institute of Technology
Accounting, Financial Services, Business Administration, Marketing

St. James Mercy Health School
Individual Studies

Stephens College
Health Information Technology

ARTICULATION AGREEMENTS WITH SUNY INSTITUTIONS:

Broome County Community College
Construction Management Engineering Technology

Corning Community College
Financial Planning, Health Information Technology, Human Services

Dutchess Community College
Architectural Technology

Erie Community College
Architectural Technology, Court and Realtime Reporting, Information Technology,

Finger Lakes Community College
Architectural Technology

Genesee Community College
Health Information Technology

Hudson Valley Community College
Architectural Technology

Jamestown Community College
Biological Science, Court and Realtime Reporting, Computer Engineering Technology, Electrical Engineering Technology, Electromechanical Engineering Technology, Financial Planning, Forensic Science Technology, Health Information Technology, Information Technology, Nursing, Veterinary Technology

Jefferson Community College
Forensic Science Technology

Mohawk Valley Community College
Surveying Engineering Technology, Nursing

Monroe Community College
Construction Management Engineering Technology, Information Technology, Mechanical Engineering Technology, Nursing

Onondaga Community College
Architectural Technology, Computer Engineering Technology

Orange County Community College
Architectural Technology

Sullivan County Community College
Financial Planning, Technology Management

SUNY Brockport
3+1 Nursing BS degree

SUNY Cortland
Physical Education

SUNY Delhi
Architectural Technology

SUNY Morrisville
Architectural Technology

SUNY Oswego
Financial Services, Business Administration, Marketing

SUNY Plattsburg
Human Services, Liberal Arts & Sciences: Social Science

* Denotes existence of at least one joint admission program in addition to articulation agreements.

CROSS-REGISTRATION

Under agreements with Rochester area colleges and Western New York Consortium, full-time (12 credits or more) Alfred State College students may take courses at these institutions without additional tuition charges. Students interested in cross-registration must seek the advice of their academic adviser before entering the program. The course cannot be taught at Alfred State College. If the student drops below full-time status, s/he will be required to pay tuition and fees at the host school. Registration begins on the opening day of the term and is available on a space-available basis. Cross-registration forms are available in the Student Records and Financial Services Office.

ROTC

The US Army ROTC program at Alfred State College is an affiliate of the Seneca Battalion program headquartered at nearby St. Bonaventure University.

DEAN'S LIST

To be named to the semester Dean's List, a student must have taken a minimum of 12 credit hours of course work that count toward graduation requirements and have earned at least 3.5 semester index.

PHI THETA KAPPA

To qualify for membership in this international honor society, candidates must have earned at least 24 semester hours of credit at Alfred State College maintaining a grade point average (GPA) of 3.5 or above, or a student must have earned at least 12 semester hours of credit at Alfred State College maintaining a GPA of 3.75 or above.

The goal of Phi Theta Kappa is to recognize and encourage scholarship among associate degree students by providing opportunities for leadership, fellowship, and service.

Founded in 1918, Phi Theta Kappa currently numbers some 1,000 chapters worldwide. Alfred State's chapter was chartered in spring 1991.

SIGMA TAU EPSILON

To qualify for membership in this scholastic honor society, a chapter of the National Vocational Technical Honor Society, a person must be a full-time student with a 3.5 (based on 4.0) cumulative index and be enrolled in an applied technology program. Students are elected by members of the society.

TAU ALPHA PI

The Tau Alpha Pi National Honor Society was founded in 1953 and is now chartered at 133 colleges and universities. Its purpose is to recognize desirable personal and intellectual qualities of engineering technology students. Student nominees must have at least a 3.5 quality point average index in a Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC/ABET) accredited program.

PSI BETA

Since 1987 Alfred State College has been a charter member of Psi Beta, the National Honor Society in Psychology for Community and Junior Colleges. Annually, the Department of Social and Behavioral Sciences has inducted members into this society, which includes over 130 chapters and 12,000 members nationwide.

To be eligible, candidates must possess both an interest in, and have completed nine credit hours in psychology (taken at Alfred State College). They must also possess a 3.0 GPA in these courses and a 3.0 GPA overall. In addition, they must also have the recommendation of a Social and Behavioral Sciences faculty member. If the inductee is transferring to a four-year college which has a sister chapter of Psi Chi, the member is usually enrolled in that society with only a letter of introduction from the Psi Beta adviser.

ACADEMIC ASSISTANCE

TUTORING SERVICES

Alfred State College offers free peer tutoring services for most courses. Peer tutors are students who have earned an "A" or "B" in a course and have received special training.

Professional Writing Tutor

Professional tutoring is available in writing and grammar for any course offered at Alfred State College.

Math Lab

Many members of the Math and Physics Department volunteer in the Math Lab. Student proctors are also available in the Math Lab for drop-in help.

Professional ESL Tutor

A professional ESL tutor is available on a part-time basis.

COURSE CANCELLATION POLICY

Alfred State College reserves the right to cancel any course without prior notice due to insufficient enrollment or unforeseen circumstances.

STUDENTS UNABLE TO ATTEND CLASSES

1. No person shall be expelled from or be refused admission as a student for the reason that he or she is unable, because of religious beliefs, to attend classes or to participate in any examination, study or work requirements on a particular day or days.
2. Any student who is unable, because of religious beliefs, to attend classes on a particular day or days shall, because of such absence on the particular day or days, be excused from any examination or any study or work requirements.
3. It shall be the responsibility of the faculty and of the administrative officials to make available to each student who is absent from school, because of religious beliefs, an equivalent opportunity to make up any examination, study or work requirements which may have been missed because of such absence on any particular day or days. No fees of any kind shall be charged for making available to the said student such equivalent opportunity.
4. If classes, examinations, study, or work requirements are held on Friday after 4 p.m. or on Saturday, similar or makeup classes, examinations, study or work requirements shall be made available on other days, where it is possible and practicable to do so. No special fees shall be charged to the student for these classes, examinations, study, or work requirements held on other days.
5. In enforcing the provisions of this section, it shall be the duty of the faculty and administration to exercise the fullest measure of good faith. No adverse or prejudicial effects shall result to any students who avail themselves of the provisions of this section.
6. Any student, who is aggrieved by the alleged failure of any faculty or administrative officials to comply in good faith with the provisions of this section, shall be entitled to maintain an action or proceeding in the county Supreme Court.

LEAVE OF ABSENCE POLICIES

Students who need to interrupt their studies during a semester already in progress or for a future semester can protect their matriculated status by applying for a leave of absence for up to one year. Leaving without officially withdrawing from college will result in the student's receiving all "Fs" for his/her course work and will show on the official Status Report of the College as an academic dismissal. Complete information on applying for a leave of absence can be found at www.alfredstate.edu and click on Current Students, then go to Services on the Records Office Web pages.

WITHDRAWALS

Students who need to withdraw from the College before the end of an academic term must officially withdraw from classes. Leaving without officially withdrawing from college will result in the student's receiving all "Fs" for his/her course work and will show on the official Status Report of the College as an academic dismissal. Complete information on applying for a withdrawal can be found at www.alfredstate.edu. Click on Current Students and then on Services on the Records Office Web pages.

CURRICULUM CHANGES

Continuing students will use a Curriculum Change Form to switch from one program to another or to include or exclude previously earned credits into a new program. Once the decision has been made to change programs, students must notify both their present department chair and the department chair of the new program. Both department chairs will sign the request and the new department chair will specify which classes to exclude from the new program. Only courses not required in the new program may be excluded. General Education courses cannot be excluded. The form must be received and processed by the Student Records and Financial Services Office. Students may not process a curriculum change after the fourth week of classes for the current semester. New students who wish to change their program after applying for admission but prior to enrollment must do so in writing to the Admissions Office.

COURSE AUDITING

Course auditors must secure permission to take a class from the instructor of the class. Approval forms are available from the Student Records and Financial Services Office or can be printed from our Web site under Forms at web.alfredstate.edu/records. Return the approved form to the Student Records and Financial Services Office before the last day to register (census date).

Course auditors will be permitted to audit courses on a space-available basis. Enrolled students receiving credit will be given priority. Auditors will not be enrolled or listed in the registrar's rosters, will attend without credit or grade, will attend without formal recognitions, and will not be required to meet the course requirements. Audited courses are not eligible for financial aid. Auditors are responsible for all associated costs of the course. A student may retake such a course for credit in a subsequent semester.

Course auditors who are currently enrolled at the College will not be charged tuition. A non-refundable $50 registration fee will be charged to auditors who are not enrolled at the College. Special auditors, individuals over the age of 60, are invited to audit classes with no registration fees. Texts and/or class materials are at the expense of the auditor. Contact the Student Records and Financial Services Office for more information.

ADD/DROP

Students wishing to add or drop a course after the start of classes must submit the appropriate Course Change Notice form with the required signatures to the Student Records and Financial Services Office. Courses will not be dropped by simply not attending classes. Additional information may be found on the Course Change Notice form available from the student's adviser or department chair. If classes are not added or dropped appropriately, a grade of "F" will be received for the course. Dropping below full-time enrollment may affect current or future financial aid eligibility. Contact the Student Records and Financial Services Office for details.

BANNER WEB

Alfred State College student software is Banner Web for students. Students will use this to view and update information as well as perform a number of functions. You can obtain instructions by going to http://web.alfredstate.edu/banweb/. Functions and information available on Banner Web include:

- Register for classes and add or drop courses
- View/print student schedules
- Apply to graduate
- Check to see if you have registration holds
- View interim and final grades and academic standing
- View your unofficial academic transcript
- Learn the status of your financial aid award package
- Check your personal information and learn how to change it
- View bill processing information

DEVELOPMENTAL/REMEDIAL COURSES

SUNY policy states, "Courses designated developmental/remedial shall not be awarded academic credit (non-credit) and thus cannot be applied as credit toward a college degree." These courses will not be included in students' GPAs.

Developmental/remedial courses and grades in such courses are designated with an asterisk (*).

STUDENT DEMOGRAPHIC INFORMATION

Students must update their personal/demographic information electronically via Banner Web for Students. This can be done by logging in to the Secure Area of Banner Web for Students and selecting the Personal Information menu. If the data reflected in the Personal Information on Banner Web is accurate, updates need not be submitted. Only inaccurate information should be updated. Information that students should check includes mailing address, telephone number, emergency contact information, and marital status. Changes can also be made in writing via the form available at www.alfredstate.edu; at Current Students; Records Office; Forms; Student Data Change Form. Students who wish to change their name or correct

their Social Security number must present legal documentation to the Student Records and Financial Services Office.

GRADUATION REQUIREMENTS

Individual programs are listed in the College catalog, and these listings include both the general and technical components necessary for completion of degree requirements. Each degree, except the AOS, has certain minimum requirements that must be met in the liberal arts and sciences, typically social science, natural science, mathematics, humanities, and physical education. Further, with the exception of AOS degree programs, all programs have specific SUNY General Education requirements. These are included in the Academic Regulations contained on the Alfred State College Web site. For more information regarding the specific graduation requirements for your program, contact your adviser or department chair. Further information regarding SUNY General Education requirements as well as the list of courses approved for General Education and the list of courses approved for Liberal Arts and Sciences can be found at www.alfredstate.edu under "Current Students" followed by "Records Office."

In addition, all students who plan to graduate must apply for graduation online through Banner Web which can be found through a Quick Link on www.alfredstate.edu or must submit a Degree Application Form to the Student Records and Financial Services Office. Online access and forms are available to all students during restricted times throughout the semester in which they expect to graduate.

Students are expected to meet regularly with their academic advisers who will assist with academic problems and monitor progress toward satisfaction of graduation requirements for the degree. Degree evaluations can be viewed within the secure area of Banner Web for students.

It is important for students to know the current graduation requirements for their program. Per Academic Regulation 102, "Each individual student has ultimate responsibility for understanding and adhering to each of these regulations and for meeting the requirements for graduation as stated herein." Please see Academic Regulation 200 Graduation Requirements for complete information. Further, students who readmit must comply with degree requirements at the time of readmission. Students should direct specific questions to their advisers/department chairs.

The graduation eligibility of expected graduates is checked and finalized by academic departments during status meetings. The date when status meetings are held is considered to be the date the degree is awarded and all course work must be completed by this date. Any credit hours earned after this date cannot be counted toward the current graduation term. Final graduation lists are submitted to the registrar by academic departments per the published End of the Semester Timetable.

TRANSFER CREDIT

REGULATIONS:

- Transfer credit procedure shall be initiated in the Student Records and Financial Services Office.*
- Evaluation of transfer credit from another institution shall be made by the course discipline department chair or designated appointee.
- Credit will be given for courses passed with a grade of "C" or better. In the evaluating of transfer credit, a grade of S or P will be considered equivalent to a grade of "C".
- Credit will be given for courses passed with a grade of "C-" or better if the overall index of the courses being transferred remains at 2.0 or higher.
- Credit hours granted will be equivalent to the corresponding course hours in this College. Partial credit may be granted with the approval of the department chair in whose department the course is offered.
- Transfer credits from other institutions will not be included in the calculations of indexes.
- Evaluation of transfer credit from one major to another within the College shall be made by the department chair or designated appointee(s) in the department to which the student transfers. Grades, including Fs, for courses that have been taken and that are required in the new program, shall be transferred as earned.
- Transfer from one program to another requires consultation with the department chair or designee of the department in which the student is registered and approval of the department chair or designee of the department to which the student wishes to transfer.

- A student may satisfy degree requirements by taking courses at another college and transferring no more than 12 credit hours within a seven-year period after leaving this College. This transfer program shall have prior written approval by his/her department chair. Courses transferred in this manner may replace comparable courses already taken at this College, thereby removing such courses from the calculation of index.

**** The above rules and regulations are listed under ACADEMIC REGULATIONS-305 on page 60 and on the ASC Web site www.alfredstate.edu/academic-regulations."***

- To receive an associate's degree, at least 30 lower-division credit hours (not including challenge credit) must be completed at this College.**
- To receive a bachelor's degree, at least 30 upper-division credit hours (not including challenge credit) must be completed at this College.***

***** The above regulation is listed under ACADEMIC REGULATIONS-201.7 on page 58 on the ASC Web site www.alfredstate.edu/academic-regulations."***

******The above regulation is listed under ACADEMIC REGULATIONS-202.4 on page 59 on the ASC Web site www.alfredstate.edu/academic-regulations."***

TRANSFER CREDIT MANUAL:

- Courses will be transferred in per the College's Transfer Credit Manual. All courses in the manual have been evaluated by the course discipline department chair.
- Once a student's official transcript is received, a transfer credit evaluation is completed and students are notified through their Alfred State College e-mail account as courses are transferred in. Students can also review transfer credits on their unofficial transcript in Banner Web for Students.
- The transfer evaluation of a course within a specific discipline may be changed on an individual student basis if the discipline department chair is willing to do so.
- If the discipline department chair is not willing to change the transfer evaluation of a course on an individual student basis, that student may appeal to the dean where the course resides.

ACADEMIC TRANSCRIPTS

Students planning to attend another college after leaving Alfred State must submit a signed transcript request to the Student Records and Financial Services Office. The transcript request form can be found at www.alfredstate.edu, under Current Students; Record Office; Forms; Transcript Request Form. Transcripts cannot be sent without the student's written permission each time one is requested. Transcripts can be faxed upon request but are usually considered unofficial and a second one may have to be sent. Transcripts cannot be sent for students who have financial holds. See section on holds for further information.

Alfred State College cannot release copies of a student's transcript from other institutions. These must be requested from the schools previously attended.

VETERANS' INFORMATION

If you are a veteran and are eligible for the GI Bill, you should contact the Student Records and Financial Services Office. That office will provide you with an application for benefits which you must complete and return to the Student Records and Financial Services Office along with a certified copy of your DD214. If you have already filed an application for benefits online, bring a copy of that application or your certificate of eligibility to the Student Records and Financial Services Office. Staff will then supply the Veterans' Administration with the enrollment certification that indicates you are a student so you can receive your monthly benefits.

The following procedures to monitor attendance have been approved by the State Education Department Bureau of Veterans' Education:

- Veterans are required to attend classes in order to receive educational benefits.
- Veterans receiving benefits must go to the Student Records and Financial Services Office once a month when classes are in session to "sign in," attesting they are attending classes. Failure to do so will result in the Student Records and Financial Services Office notifying the VA, and benefits will be terminated.

Further, veterans must contact the certifying official in the Registrar's Office to insure paperwork is properly completed whenever they drop a course, change their major, withdraw from the College, and/or are enrolled in courses that have non-punitive grades (S or U).

RECORDS OFFICE WEB SITE

Web pages for the Student Records and Financial Services Office are available on the Intranet at https://my.alfredstate.edu/academic-affairs/records-office.

Listed below is some of the information provided on these Web pages:

- Academic Calendar
- Schedule of Classes
- Courses approved for completing General Education degree requirements
- Courses approved for completing Liberal Arts & Science degree requirements
- Final Exam Schedule matrix

ACADEMIC REGULATIONS

DISCLAIMER: Printed versions of these regulations are for general reference purposes. The only official copy of the Academic Regulations is to be found on the Alfred State College Web site at www.alfredstate.edu/academic-regulations.

100 Jurisdiction, Changes, and Distribution of Academic Regulations

101 Jurisdiction
The regulations contained herein have been adopted by the Faculty Senate and approved by the college president and will apply to all College students, faculty, and administration, except where variation of these regulations has been adopted herein for the Applied Technology campus.

102 Responsibility
Each individual student has ultimate responsibility for understanding and adhering to each of these regulations and for meeting the requirements for graduation as stated herein.

103 Changes
Changes in these regulations must originate as recommendations by the Committee for Academic Affairs. Before becoming an official part of the "Academic Regulations," proposed changes must be adopted by the Faculty Senate and approved by the president of the College. Approved changes will go into effect immediately unless otherwise stated.

104 Official Copy and Distribution
The vice president for academic affairs will maintain the official copy of the "Academic Regulations." Upon approval by the college president, official changes will be transmitted to the vice president for academic affairs by the college president. At the beginning of each academic year the vice president for academic affairs will distribute a copy of the official "Academic Regulations" in electronic form. Any changes effective during the academic year will be published by the vice president for academic affairs upon notice from the college president.

105 Interpretation
In any case where a question arises regarding the interpretation of these regulations, the vice president for academic affairs or his appointed representative will have the final authority in resolving such matters.

106 Waiver
Requests for a waiver of any particular provision of these regulations will be made in writing to the Committee for Academic Affairs. Requests that are received by the chair of the committee following the last scheduled committee meeting of the semester will be considered during the following semester. The Committee for Academic Affairs has the authority to grant such a waiver only if it deems that unusual or extenuating circumstances warrant such action. The vice president of academic affairs (or appointee), in consultation with the appropriate department chair, will make decisions on waivers that need immediate attention when school is not in session. NOTE: high school students enrolled in credit bearing courses should submit written appeals directly to the vice president for academic affairs for decision.

200 Graduation Requirements

200 Requirements for Certificate

200.1 To be eligible to receive a certificate in an approved program, a student shall satisfactorily complete the requirements for the certificate program with a cumulative index of 2.00 and shall have an academic status of good standing.

200.2 A student shall satisfy the requirements of the program in which he/she is matriculated and be recommended by his/her department faculty to the department chair, vice president for academic affairs, and the college president for action by the College Council.

200.2a To graduate, a student shall satisfy the requirements of the program in which he/she is matriculated and must apply, or the student can be recommended by his/her academic department.

200.2b Students matriculated in an associate program that also satisfy requirements of the corresponding certificate program must apply, or the student can be recommended by his/her academic department.

200.3 To receive an approved certificate, at least 50 percent of the credit hours (not including challenge credit) must be completed at this College.

200.4 To be eligible to receive an approved certificate, a student must complete and submit to the registrar a Degree Application Form by the date established by the registrar, or the student can be recommended by his/her academic department.

201 Requirements for AAS, AS, AA, and AOS Degrees

201.1 To be eligible to receive the degree of Associate in Applied Science, a student shall satisfactorily complete a minimum of 61 credit hours of which a minimum of one credit hour must have an HPED prefix with a cumulative index of 2.0, shall have passed COMP 1503, and shall have an academic status of good standing. For students entering prior to the fall semester 2002, at least 20 credit hours shall be in the fields of liberal arts and sciences, and shall include social science (6 hours), natural sciences and/or mathematics (6 hours), humanities (6 hours – including COMP 1503), and electives in the aforesaid fields (2 hours). For students entering in the fall semester of 2002 and thereafter, at least 20 credit hours shall be in the fields of liberal arts and sciences, the student shall have achieved competency in at least five of the following 10 knowledge areas (as prescribed by the student's academic department): mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilizations, arts, foreign language, and basic communication (which must include COMP 1503 or transfer equivalent). For students entering in the fall semester 2003 and thereafter, students who enroll in program 530 (Nursing) at least 20 credit hours shall be in the fields of liberal arts and sciences, the student shall have achieved competency in at least 3.5 of the following 10 knowledge areas (as prescribed by the student's academic department): mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilizations, arts, foreign language, and basic communication (which must include COMP 1503 or transfer equivalent). In addition, all students receiving an AAS degree shall achieve competency in the following two skill areas: critical thinking and information literacy. The method by which this competency shall be achieved will be prescribed by the student's department.

201.2 To be eligible to receive the degree of Associate in Science, a student shall satisfactorily complete a minimum of 61 credit hours of which a minimum of one credit hour must have an HPED prefix with a cumulative index of 2.0, shall have passed COMP 1503, and shall have an academic status of good standing. For students entering prior to the fall semester of 2000, at least 30 credit hours shall be in the fields of liberal arts and sciences and shall include COMP 1503, humanities, natural sciences and mathematics, and the social sciences. The exact balance within the 30 credit hours will be prescribed by the department. There should be reasonable distribution of work in these three categories as well as appropriate depth in one. For students entering in the fall semester of 2000 and thereafter, at least 30 credit hours shall be in the fields of liberal arts and sciences and shall have achieved competency in at least seven of the following 10 knowledge areas (as prescribed by the student's academic department): mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilizations, arts, foreign language, and basic communication (which must include COMP 1503 or transfer equivalent). In addition, students shall achieve competency in the following two skill areas: critical thinking and information literacy. The method by which this competency shall be achieved will be prescribed by the department.

201.3 To be eligible to receive the degree of Associate in Arts, a student shall satisfactorily complete a minimum of 61 credit hours of which a minimum of one credit hour must have an HPED prefix with a cumulative index of 2.0, shall have passed COMP 1503, and shall have an academic status of good standing. For students entering prior to the fall semester of 2000, at least 48 credit hours shall be in the fields of liberal arts and sciences and shall include COMP 1503, humanities, natural sciences and mathematics, and the social sciences. The exact balance within the 48 credit hours will be prescribed by the department. There should be reasonable distribution of work in these three categories as well as appropriate depth in one. For students entering in the fall semester of 2000 and thereafter, at least 48 credit hours shall be in the fields of liberal arts and sciences and shall have achieved competency in at least seven of the following 10 knowledge areas (as prescribed by the student's academic department): mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilizations, arts, foreign language, and basic communication (which must include COMP 1503 or transfer equivalent). In addition, students shall achieve competency in the following two skill areas: critical thinking and information literacy. The method by which this competency shall be achieved will be prescribed by the department.

201.4 To be eligible to receive the degree of Associate in Occupational Studies, a student shall satisfactorily complete a minimum of 60 credit hours with a cumulative index of 2.0 and shall have an academic status of good standing.

201.5 A waiver of the one HPED credit hour requirement may be granted by the chair of the Health and Physical Education Department. In such cases, the student must complete a minimum of 60 credit hours for graduation.

201.6 A student shall satisfy the requirements of the program in which he/she is matriculated and be recommended by his/her department faculty to the department chair, vice president for academic affairs, and the college president for action by the College Council.

201.6a To graduate, a student shall satisfy the requirements of the program in which he/she is matriculated and must apply, or the student can be recommended by his/her academic department.

201.6b Students matriculated in a bachelor program that also satisfy the requirements of the corresponding associate program must apply, or the student can be recommended by his/her academic department.

201.7 To receive a degree, at least 30 lower-division credit hours (not including challenge credit) must be completed at this College.

201.8 To be eligible to receive a degree, a student must complete and submit to the registrar a Degree Application Form by the date established by the registrar, or the student can be recommended by his/her academic department..

202 Requirements for BS, BTech and BBA Degrees

202.1 Effective for students matriculating spring 2011 and after, to be eligible to receive the degree of Bachelor of Science, a student shall satisfactorily complete a minimum of 121 credit hours of which a minimum of one credit hour must have an HPED prefix. The student shall have a cumulative index of at least 2.0, shall have passed COMP 1503, and have an academic status of good standing. Of the 121 credit hours 60 college-level credit hours must be in the liberal arts and sciences with at least thirty credit hours from general education approved courses. The general education core must contain basic communication (written and oral) and mathematics plus additional courses from at least five of the following eight other general education knowledge areas: natural sciences, social sciences, humanities, Western civilization, American history, other world civilizations, the arts, and/or foreign language. The general education core must also include proficiency (at the program level) of the following two general education competencies: critical thinking and information management. Additional credit hour requirements may be necessary to meet specific accreditation standards.

202.2 Effective for students matriculating spring 2011 and after, to be eligible to receive the degree of Bachelor of Technology or Bachelor of Business Administration, a student shall satisfactorily complete a minimum of 121 credit hours of which a minimum of one credit hour must have an HPED prefix. The student shall have a cumulative index of at least 2.0, shall have passed COMP 1503, and have an academic status of good standing. Of the 121 credit hours 30 college-level credit hours must be in the liberal arts and sciences with at least thirty credit hours from general education approved courses. The general education core must contain basic communication (written and oral) and mathematics plus additional courses from at least five of the following eight other general education knowledge areas: natural sciences, social sciences, humanities, Western civilization, American history, other world civilizations, the arts, and/or foreign language. The general education core must also include proficiency (at the program level) of the following two general education competencies: critical thinking and information management. Additional credit hour requirements may be necessary to meet specific accreditation standards.

202.3 To graduate, a student shall satisfy the requirements of the program in which he/she is matriculated and must apply, or the student can be recommended by his/her academic department.

202.4 To receive a degree, 45 upper-division credit hours (not including challenge credit) are required, of which 30 (not including challenge credit) must be completed at this college.

202.5 To be eligible to receive a degree, a student must complete and submit to the registrar a Degree Application Form by the date established by the registrar, or the student can be recommended by his/her academic department..

202.6 Waiver of the one HPED credit hour requirement may be granted by the chair of the Health and Physical Education Department. In such cases, the student must complete a minimum of 120 credit hours for graduation.

202.7 To be eligible to receive a baccalaureate degree with a minor, a student shall have completed the required credit hours in his/her major, and a student shall have completed a minimum of 18 credit hours in the minor. A maximum of six of the total credit hours can be applied to both the major and the minor.

202.8 To receive a second minor, a student shall have completed at least 12 credits that were not used in either the major or first minor.

202.9 A student must declare the minor(s) no later than the submission of the graduation application.

203 Program Requirements

When a student changes his/her program or graduates and immediately readmits from a certificate to an associate program or from an associate to a bachelor program, provided that there is continuous enrollment, the student must meet graduation requirements in effect when the student first matriculated to the college. In all other cases, the student must meet graduation requirements for the program effective when he/she was admitted/readmitted to the college.

205 Requirements for Earning Two Degrees

205.1 In order for a student to receive two associate degrees, he/she must have earned a minimum of 90 credit hours at Alfred State College or transferred in 30 credit hours but earned a minimum of 60 credit hours at Alfred State College (not including challenge credit). The two associate programs must differ by a minimum of 30 credit hours.

205.2 In order for a student to receive two baccalaureate degrees, he/she must have earned a minimum of 150 credit hours or transferred in 90 credit hours but earned a minimum of 60 upper-division credit hours (not including challenge credit). The two baccalaureate programs must differ by a minimum of 30 credit hours.

205.3 A baccalaureate-level student may receive an associate degree in a related program or an associate-level student may receive a certificate in a related approved program, provided that he/she applied for both degrees prior to the completion of the baccalaureate or associate degree respectively.

300 Credits, Grades, and Indexes

301 Credit Hour Definition

301.1 A credit hour signifies 45 hours of student time involvement per semester per course credit hour. This may consist of 15 hours of lecture and 30 hours of preparation; 45 laboratory hours with no outside preparation; 15 hours of lecture and 30 laboratory hours; or other combination of lecture, laboratory, and preparation to 45 hours.

301.1a One credit for directed study and/or independent study will be awarded for the equivalent of forty-five 50 minute sessions of student academic activity.

301.2 Honor points signify the quality of a student's performance for each credit hour in courses graded A through F. The number of honor points awarded per credit hour will vary from 4.0 to 0.0, depending upon the final grade earned in the course. The number of honor points is multiplied by the course credit hours to calculate the honor points earned in that course. The sum of the honor points earned is used in calculating the semester and cumulative indexes.
(Note: 302.1 and 304)

302 Grade Designation

302.1 The following grade designations will be used:

Grade	Honor Points	Meanings
A	4	Excellent
B+	3.5	High B
B	3	Good
C+	2.5	High C
C	2	Satisfactory

D+	1.5	High D
D	1	Minimal passing
F	0	Failing
S	0	Passing-not included in index
U	0	Unsatisfactory
E	0	Incomplete (See Sec. 302.2)
G	0	Withdrew or took leave of absence from college while passing
H	0	Withdrew or took leave of absence from college while failing
N	0	Grade not yet issued
P	0	Successful challenge
Q	0	Course taken on non-credit basis
NG	0	No grade
T	0	Transfer course
W	0	Dropped from course by instructor (See Sec. 502.9)
*	0	This symbol with a grade designates a developmental/remedial course.

A grade of E is a temporary designation that indicates incomplete work due to circumstances beyond the student's control. It shall not be issued when the student fails to meet requirements due to his/her laxity.

302.2 A grade designation of E will automatically be changed to F by the registrar if not removed during the next semester. **A grade designation of E may not be changed to an N grade.** A student with an E grade on his/her record will not be eligible for graduation.

302.3 Use of N Grade

302.4 1. The use of the N grade shall be restricted to those cooperative work experience professional practice courses, where completion of the course requirement does not adhere to the College calendar.
2. The N grade signifies the course is still in progress.
3. Use of the N grade for any course other than those described in 1 must have the approval of the student's department chair and the chair of the department in which the course is offered.
4. A student with an N grade on his/her record will not be eligible for graduation.
5. A grade designation of N will automatically be changed to F by the registrar if not removed during the following semester.
A maximum of one open elective course may be taken for a grade of S or U each semester at the student's option with his/her department chair's approval. Such a selection will be made at the time of registration for the course, and conversion of the letter grade (A-F) will be made by the registrar, using the following scale:

302.5 A. Grades of A through D will become S
B. Grade F will become U. An "open elective course" as referred to in this section is any course not specified in the student's program by name or subject area. This regulation does not apply to programs in Applied Technology, which have no provision for "open elective courses."

Grade Changes

303 A grade may be changed by the instructor of the course in which the grade is given. After one full semester has elapsed, any grade change must have the approval of the instructor's department chair. The registrar will notify the department chair(s), in which department student is enrolled and in which department the course is taught, of the grade change.

303.1 Upon graduation, grades in courses used to complete degree requirements can not be changed except in cases where 303.1 applies. Further, such courses can not be repeated or transferred, thereby changing the student's grade point average.

303.2 Calculating Index

304 Only courses completed at this College for which a grade A through F is earned will be used in computing a student's index. All other grade designations will appear on the student's permanent record, but will not be used in calculating index.

304.1 The semester index shall be calculated by dividing the total honor points earned by the total credit hours completed in that semester as specified in Sec. 304.1.

304.2 The cumulative index shall be calculated by dividing the total honor points earned by the total credit hours completed at this College as specified in Sec. 304.1.

304.3 Upon transfer from one program to another, grades for courses which are not transferred shall not be used in calculating the cumulative index. (See Sec. 305.3)

304.4 When a course is repeated, the credit hours shall be used only once, and the honor points corresponding to the highest grade earned shall be used in calculating the cumulative index. If the course cannot be repeated because it has been deleted or the department has revised the program requirements, a course of similar content may be taken in place of the original course and recorded as a "repeat." Such course substitutions must have the approval of the student's department chair and the course department chair.

304.5 Transfer Credit

305 Transfer credit procedure shall be initiated in the Enrollment Services Office.

305.1 Evaluation of transfer credit from another institution shall be made for matriculated students by the department chair or designated appointee(s) in whose department the student is enrolled using the following grades:

305.2 A. Credit will be given for courses passed with a grade of C or better **(credit for a C minus shall not be given).** In the evaluating of transfer credit, a grade of S or P will be considered equivalent to a grade of C.
B. Credit will be given for courses passed with a grade of C minus or better if the overall index of the courses being transferred remains at 2.0 or higher.
C. Credit hours granted will be equivalent to the corresponding course hours in this College. Partial credit may be granted with the approval of the department chair in whose department the course is offered.

D. Transferred credits from other institutions will not be included in the calculation of indexes.
Evaluation of transfer credit within the College shall be made by the department chair or designated appointee(s) in the department to which the student transfers. Grades, including Fs, for courses that have been taken and that are required in the new program shall be transferred as earned. If the student has already completed a degree at the College, no grades that were earned for that degree can be excluded from the student's academic transcript during the transfer evaluation.

305.3 Transfer from one program to another requires approval of the department chair or designee of the department in which the student is registered as well as approval of the department chair or designee of the department to which the student wishes to transfer. Such changes must be processed by the end of the fourth week of classes for the current semester. Changes after the fourth week will be effective for the subsequent semester.

305.4 A student may satisfy degree requirements by taking courses at another college and transferring no more than 12 credit hours within a seven-year period after leaving this College. This transfer program shall have prior written approval by his/her department chair. Courses transferred in this manner may replace comparable courses already taken at this College, thereby removing such courses from the calculation of index.

305.5 Challenge Credit

306 A challenge credit is a request by a matriculated student to take an examination for course credit in a subject in which he/she has competence. The challenge must be approved by the department chair or designee in which the course is offered. A student may not challenge a course for which he/she has already earned a final grade at the College.

306.1 In order to receive challenge credit, the challenger shall successfully pass a comprehensive examination as determined by the chair of the department in which the course is offered.

306.2 Tuition charges and/or examination fees for challenges will be determined by the College.

306.3 A grade of P shall be given upon successful completion of a challenge. The grade shall be treated as transferred credit in meeting graduation requirements.

306.4 Proficiency Examination Credit

307 College credit for NYS Proficiency Examinations, College Level Examination Program (CLEP), Advanced Placement Examinations, and other proficiency examinations shall be treated as transferred credit in meeting graduation requirements.

307.1 Such credit will be based on the following rules:

307.2 A. No more than 30 credits required for an associate's degree will be granted.
B. Credit for successful examination performances is based on a minimum test grade of C or a grade which is equivalent to a C, such as a 3 on Advanced Placement.
C. Credit may only be granted after the student has matriculated at this College.
D. Credit is given only for subject matter that could normally be transferred from this institution.
E. Evaluation for proficiency examination credit is performed by the chair of the department in which the subject related to the examination is offered.
F. Credit for Proficiency is not counted as residence credit required in regulation 201.7.
G. No fee will be charged for services performed by the College in regard to these proficiency tests.
Classification of Students

400 General Classification of Students

401 By Class:

401.1 Associate
Freshman - 0 - 23 credit hours earned and a degree student in a associate-level program
Level: Senior - 24 or more credit hours earned and a degree student in a associate-level program
Bachelor
Freshman - 0 - 23 associate-level credit hours earned and a degree student in a bachelor-level program
Level: Sophomore - 24 - 61 credit hours earned and a degree student in a bachelor-level program
Junior - 61 - 89 credit hours earned and a degree student in a bachelor-level program
Senior - 90 or more credit hours earned and a degree student in a bachelor-level program
Other:

401.2 Full-time student - Currently registered for 12 or more credit hours
Part-time student - Currently registered for fewer than 12 credit hours
Degree Student - Enrolled in a program in which she/he anticipates earning a degree
Non-Degree Student - Enrolled in an academic area of study or continuing education program but does not anticipate earning a degree
Matriculated Student - Currently enrolled and admitted to the College by official approval of the State University of New York and the College Admissions Office.
Non-matriculated Student - Admitted to the College by the College Admissions Office only
Student Academic Status

402 Designation of Academic Status:

402.1 A. The academic status of every full-time or part-time student will be recommended by the student's department faculty or faculties of extension programs, as appropriate, at the end of the regular fall and spring academic semesters. Status recommendations will be made to the vice president for academic affairs, who will make the final decision.
B. Upon recommendation of a student's department faculty, the department chair can request changes in academic status of a student by the vice president for academic affairs at any time other than the end of the regular fall and spring semesters.
Changes in Academic Status:

402.2 A student may appeal for a change in academic status established under Sec. 402.1 A or B through a petition to the vice president for academic affairs, who will then present the petition to the Academic Leadership Team. Extenuating circumstances will be considered.
Good Standing:

402.3 Judgment in this regard is the responsibility of the student's department faculty. A guide in this decision shall be that a student may lose his/her status of Good Standing if his/her cumulative semester index falls below 2.0.
Academic Probation:

402.4 Upon the recommendation of a student's department faculty and the department chair, the vice president for academic affairs can place a student on academic probation. This status will serve as an official warning that if the student does not raise his/her cumulative index to 2.0, he/she may be recommended for dismissal.

Academic Dismissal Upon the Recommendation of a Student's Departmental Faculty and the Department Chair:

402.5 The vice president for academic affairs has the authority to approve the academic dismissal of a student at any time. A student placed on academic dismissal may not be readmitted in any College program in the regular semester following his/her academic dismissal. The following shall be the guide for academic dismissals as of the end of the semester indicated:

CUMULATIVE INDEX

Semester:	Less Than:
1	1.3
2	1.75
3+	1.9

A student shall be considered for dismissal whenever his/her semester index is less than 1.3.

Conditional Dismissal

402.6 When a student's departmental faculty determines that he/she is to be recommended for dismissal, the faculty may also recommend that the dismissal be changed to probation if the student agrees to meet certain specified conditions. This temporary status will be a CONDITIONAL DISMISSAL and will require approval of the department chair and vice president for academic affairs.

The conditions for this academic status shall be:

A. Transfer to another program in the same area of study. This requires the approval of the chair of the department to which transfer is being requested.

B. Transfer to another program in another area of study. This requires the recommendation of the student's present department chair and the approval of the department chair of the department to which he/she is transferring.

C. Under appropriate conditions the student's departmental faculty may establish. Such conditions must be specific and may include the following: reduced class load, extending program beyond two years, repeating courses during summer or evening session. When a student on conditional dismissal status receives approval for the anticipated transfer or agrees to the conditions prescribed by his/her department, the department chair shall notify the registrar and his/her status will be changed to probation. If the student fails to meet the agreed-to conditions, the student may be considered for dismissal.

Graduating

402.7 A graduate is a student who has fulfilled the graduation requirements as prescribed in Section 201 and who has been recommended for graduation by the department chair and vice president for academic affairs.

The academic status of "no standing" is automatically assigned to those students who withdraw, take a leave of absence, or are suspended. Upon the recommendation of the student's department, extenuating circumstances will be considered by the vice president for academic affairs.

402.8 Honors

403 All candidates completing their degree requirements with a cumulative index of 3.5 or greater will be recognized as honor graduates, and this honor will be included in the student's academic record. Each honor graduate, based on final cumulative index calculation, will also be recognized at the Commencement exercises in a manner to be determined by the Commencement Committee. Honor graduates will be distinguished by the following categories:

CUM LAUDE	3.50-3.69
MAGNA CUM LAUDE	3.70-3.89
SUMMA CUM LAUDE	3.90-4.00

403.1 To be named to the Dean's List, a student must have taken at least twelve (12) GPA credit hours of course work for the semester and (A) have earned at least 3.50 semester index.

403.2 Registration, Scheduling, and Attendance

500 A student shall register according to the College calendar. Registration is completed when he/she has paid the required tuition and fees. Any student who does not complete his/her registration by the assigned day will be considered a late registrant.

501.1

Scheduling and Schedule Changes

502

A student registering for more than 19 credit hours in a semester must have the approval of his/her academic dean.

502.2 A course may be dropped until 10 instructional days after the interim grade period ends, with the approval of the student's department chair. Courses dropped during this period shall receive no grade designation.

502.3 Courses in which a student has been failed for academic dishonesty cannot be dropped.

502.3a Part-of-term courses may be dropped or added without fee within one week of the first class meeting and with the approval of the student's department chair and dean.

Part-of-term courses may not be added or dropped after 50% of the scheduled classes have been

502.4a completed.

502.4b Students may be admitted to the College within the first five instructional days of the semester. After the first five instructional days, students may only be admitted into programs that have a designated start date beyond that point in time.

502.5 A student may add a course to his/her schedule within the first five instructional days, with the approval of the student's department chair.

502.6 After five instructional days, a course may be added only with the approval of both the student's department chair and the chair of the department in which the course is offered. Courses may not be added under any circumstances after the tenth instructional day after the interim grade period ends.

502.7 A class section change within the first five days requires the approval of the student's department chair. After five instructional days, a section change will also require the approval of the course department chair.

502.8 An instructor may request that the course department chair drop a student from course registration due to non-attendance or violation of standards as stated in the course syllabus or as published in the Principles of Community, with the approval of the student's department chair. The course department chair will inform the student in writing citing the reason(s). When a student is dropped from a course according to this procedure, a grade of "W" will be assigned.

502.9 A student enrolled in an associate degree program may register and enroll in no more than a total of 19 credit hours of course work designated as upper-level, with the approval of the student's department chair. Any course work with grades designated in AR 302.1, except Q or NG will be included in the 19-credit total.

502.10 Any course schedule changes after the census date as prescribed by the official calendar will require a late-processing fee.

502.11 Attendance

503 Each instructor shall be responsible for distributing to the students enrolled in his/her classes the printed or typed attendance requirements of the course which abide by Sec. 503.2 and Sec. 503.3. These attendance regulations must be filed in the instructor's department office.

503.1 Participation in authorized College functions such as field trips; athletic events; choir, band, and drama tours; and other intercollegiate activities shall be an acceptable reason for class absence, provided that prior to the absence the student makes arrangements with his/her instructors to make up work to be missed. Instructors need not extend make-up privileges when a student's total absence exceeds 10 percent of the scheduled class meetings.

503.2 Under existing state laws, individual students may be excused from class without penalty because of religious beliefs provided that prior to the absence the student makes arrangements with his/her instructors to make up work to be missed. Instructors need not extend make-up privileges when a student's total absence exceeds 10 percent of the scheduled class meetings.

503.3 Individual students will be excused from class without penalty due to military orders. The student must make arrangements with his/her instructors to make up work. If requested by the faculty member, military orders must be provided to the faculty member as soon as they are received by the student. Instructors need not extend make-up privileges when a student's total absence exceeds 15 percent of the scheduled class meetings.

503.4 Withdrawal and Readmission

600 Withdrawal from College

601 A formal withdrawal or leave of absence from the College is not official until the registrar signs the required form.

601.1a A student who receives a leave of absence, withdraws, or is academically dismissed after more than 30 instructional days into a semester shall receive a grade of G or H, depending on the student's academic standing in a course on the last day of attendance in that course.

601.1b Continuing students who have officially withdrawn from the College are eligible to apply for readmission. The "application for readmission" form is available by contacting Admissions.

601.1c Students leaving the College during a semester without formally withdrawing, have not received a leave of absence, been academically dismissed will not receive G or H, determined as of the last day of attendance in that course.

601.2 Part-of-term courses that are completed prior to the date of withdrawal, leave of absence, or academic dismissal will be assigned a grade (A-F, G or H, or NG) at the discretion of the faculty member instructing the course, with notification to be given to the student's department chair.

601.3 Any student suspended/expelled from the College will be issued a grade of NG for each course he/she was enrolled in during the semester when he/she was suspended/expelled.

601.4 A student who is currently suspended/expelled from the College for disciplinary reasons is not eligible to apply to graduate nor can his/her name be added to any final graduation list.

601.5 Readmission

602 A student who has discontinued his/her academic program prior to meeting graduation requirements and wishes to apply for readmission must complete the Alfred State College Application for Readmission through the Admissions Office.

602.1 A student who is or will be a graduate of the College and wishes to apply for readmission must complete a SUNY Application and process it through the Application Services Center for a new program. The new program must be significantly different than the program from which the student graduated (See Section 205 for Earning Two Degrees). The Admissions Office in conjunction with the Academic Affairs Leadership Team will create acceptable readmission application procedures to implement the two parts of this regulation.

602.2 Examinations

700 Final Examinations

701 A final examination period will be included in the academic calendar at the end of each semester. Final or unit examinations will be scheduled according to the final exam matrix during the examination period for all courses, as established by the registrar's office. Exams for evening classes will be scheduled during the final exam period during the same day/time as the class normally meets. Departments with multiple section courses desiring combined section testing must coordinate the scheduling of this exam with the registrar's office. Faculty concluding a course with a unit exam must give the unit exam during the final examination period. All comprehensive final examinations must be scheduled during the final examination period.

701.1 The decision to have a final examination for any course will be determined by a consensus of the faculty currently teaching the course. A final exam or a final project may be used. Notice of the decision will be provided to the course department chair and announced to the students during the first week of instruction on the course syllabi.

701.2 The weight of the final examination in computing the final grade shall be at the discretion of the course instructor.

701.3

Agriculture and Veterinary Technology Department

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Classes and laboratories for students taking agriculture or veterinary technology courses are held primarily in the Agriculture Science Building and at the College Farm. The Agriculture Science Building contains laboratories specializing in soils, botany, animal handling, animal anatomy and physiology, microbiology, surgery, radiology, vivariums, and kennel areas. A 5,300-sq.-ft. greenhouse produces hydroponic vegetables, edible flowers, and herbs. The greenhouse also contains a tropical room, desert room, and plant propagation areas. Greenhouse plants are used for instruction in the botany, IPM, soils, sustainable vegetable, forage, and nutrition courses.

The College Farm is the home to 135 registered Holsteins. Sixty-five lactating cows have a BAA of 108.7 and a rolling herd average of over 28,000 pounds with over 1,100 pounds of fat . Students experience all aspects of herd management from calves to cows. They also have an opportunity to participate in cattle showing as well as the opportunity to become a member of the ASC Dairy Judging Team that tours during the fall and spring semesters. The farm is also home to a small number of horses, both miniature and full size, alpacas, swine, poultry, and sheep that are used for instruction in animal care and management. The 800-acre farm is also used by soils, botany, nutrition, feeds, field, and forage classes. Students have the opportunity to work and live on the farm as interns.

There is a major rebuilding project at the farm which will be the site for the Center for Organic and Sustainable Agriculture. The farm will house side-by-side conventional and organic dairy herds in the new dairy barns and milking systems which will be constructed. Intensive rotational grazing and organic and conventional row crop and vegetable production techniques will be available for student learning experiences.

THE EXPERIENCE OPPORTUNITY

All agriculture students participate in hands-on experiences working with crops, plants, animals, facilities, and equipment. Students are involved with all the enterprises relating to their field of study. Graduates leave our programs with a true “feel” for the industry they plan to enter. Veterinary technology students are required to complete a 120-hour preceptorship (work experience) which gives them real practical experience between completing their first year and graduation.

We also encourage our students to have fun and take pride in the facilities by participating in “Kiddie Ag Day” where local elementary school students are bused in and shown the wonders of the farm by student tour guides. On Showmanship Day, agriculture students experience the fun of showing numerous animals, from dairy cows to alpacas, in front of a host of family, friends, and alumni. Other activities involving students include ag skills competitions for high school students and a dairy consignment sale.

FACILITIES

Facilities for instruction include the range of laboratories supporting the basic sciences such as chemistry and biology. Field work is done on college-owned properties including the College farm and lake, as well as on a range of nearby state forest lands and other public and private facilities. Additional facilities are being developed at the newly acquired Groveland farm, a 270-acre crop farm near Sonya, NY.

DEPARTMENT PROGRAMS

- Agricultural Business (AAS)
- Agricultural Technology (AAS)
- Veterinary Technology (AAS)

Automotive Trades Department

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Today, more than ever, the highly skilled automotive technician has an increasingly important role in the efficient operation of our society. The four automotive trades areas: automotive service technician; heavy equipment: truck & diesel technician; autobody repair; and motorsports technology prepare technicians for the ever-expanding and highly specialized trade industry.

Students can apply for and take their NYS Inspection test during their freshman year. All automotive students have the opportunity to take their area's ASE (Automotive Service Excellence) exams (ASC is a testing site) and the ADS (Association of Diesel Specialists) TechCert test.

The automotive service technician program is master certified by the NATEF (National Automotive Training Educational Foundation); the autobody repair program is ICAR (Inter-Industry Conference on Automotive Collision Repair) certified; and the heavy equipment: truck & diesel technician program is ADS affiliated.

NATEF is a national industry-wide organization whose 40-member board of directors represents all aspects of the automotive industry. Representation by such a diverse group of individuals adds to the credibility of the certifications to assure that programs meet stringent national standards.

FACILITIES

Students work in facilities consisting of approximately 82,000+ sq. ft. of repair shops, classrooms, on-campus parts store, and study areas. The areas have the latest equipment.

The auto body collision shop contains late-model down-draft bakepaint booths, paint mixing room, frame-straightening machines, uni-body bench, and a computerized estimating system.

Auto repair shops and classroom areas contain the latest equipment including computerized front-end aligners, brake equipment, computerized engine analyzers, automatic transmission and engine machine shop equipment, computer specification and service information terminals in all shops.

Our heavy equipment: truck & diesel shops are equipped with specialized fuel injection overhauling and test lab, engine rebuilding area of live units, multi-speed transmission and rear axle repair area, engine tune-up area containing computer-operated late model diesel engines, hand-held diagnostic scanners, and a computerized specifications and service information room.

Students take the motorsports courses and perform extensive hands-on work in a newly remodeled, newly equipped facility located in Alfred. First-year courses are taken in the freshman automotive building located at the School of Applied Technology campus in Wellsville.

EXPENSES

In addition to regular college expenses, students entering the automotive trades programs must purchase tools and uniforms. The cost of tools and toolbox is approximately $4,400 for the automotive trades freshman year. The cost of tools for the second year depends upon which program is selected. In addition, the total cost for textbooks, shop uniforms, safety shoes, and safety glasses is about $950 for two years.

Students entering the automotive parts technology program must purchase textbooks and uniforms. The cost of textbooks is approximately $750. The cost of uniforms is approximately $200-$225. Miscellaneous expenses are approximately $200.

Please refer to the most current required tool list on the Alfred State College Web site: http://www.alfredstate.edu/questions/high-school-seniors-and-recent-graduates/what-tools-do-i-need-for-my-curriculum.

BENCH UNITS/STUDENT AUTOMOBILES

Some instruction cannot be given on "live" vehicles; thus, students who have been accepted into the automotive technician, heavy equipment: truck and diesel, and motorsports programs are required to furnish bench units. These units such as alternators, starters, distributors, air conditioning compressors, power steering pumps, and gear may be purchased at an approximate cost of $0-150.** (** Cost calculated from poll of current students.)

Students receive information about procurement and identification of bench units from individual course instructors after arriving on campus.

Students are required to have a personal vehicle for use in performing "live" lab assignments which are required in order to gain proficiency in the trade. Due to the rapid changes in the tune-up, electrical, fuel, and emission areas of the service field, students are encouraged to work on vehicles and bench units manufactured within the last 10 years. It should be noted that these personal vehicles do not have to be licensed or registered. They may be stored on the campus automotive parking lot for the duration of the school year and must be removed by the last day of classes.

TECHNICAL STANDARDS FOR ALL AUTOMOTIVE TRADES PROGRAMS

Applicants for all programs in the Automotive Trades Department must meet the following physical requirements.

1. Must be able to perform safely in the shop.
2. Must be able to lift 50 pounds to eye level.
3. Must be able to communicate orally with a person six-10 feet away.
4. Must be able to visually decipher an oscilloscope monitor and digital/analog meter, and scan tool displays.
5. Must have a valid motor vehicle license and be able to drive a standard transmission vehicle.
6. Must be able to diagnose mechanical failures that are distinguished audibly.
7. Must be able to understand information found in service repair manuals and use diagnostic flow charts.
8. Must meet qualifications for a NYS driver's license.

DEPARTMENT PROGRAMS

- ☐ Autobody Repair (AOS)
- ☐ Automotive Service Technician (AOS)
- ☐ Heavy Equipment: Truck & Diesel Technician (AOS)
- ☐ Motorsports Technology (AOS)
- ☐ Automotive Parts Technology (AAS)

Building Trades Department

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The Building Trades Department is composed of four programs: building construction, heavy equipment operations, masonry, and air conditioning and heating technology. Rewarding careers in the construction industry are open to students graduating from the building trades programs. With the continual development of new building methods and materials, the craftsperson finds it necessary to keep abreast of these developments. Construction, as in many other occupations, is becoming a field of specialists.

The building trades programs provide instruction in the skills required by the carpenter, heavy equipment operator, mason, plumber, heating specialist, or air conditioning specialist in the construction and remodeling of residential or light commercial masonry buildings. Coupled with "hands-on" experience working at off-campus construction sites, the programs provide the necessary theory as well as instruction in blueprint reading, cost and materials, estimating, safety, and the use of newly developed equipment and materials.

Please refer to the most current required tool list on the Alfred State College Web site: http://www.alfredstate.edu/questions/high-school-seniors-and-recent-graduates/what-tools-do-i-need-for-my-curriculum.

FACILITIES

The building construction laboratory is equipped with nearly every power and hand construction tool available to instruct the student in all phases of the carpentry trade. Off-campus construction of frame buildings is carried out each year by the department so that students have a maximum amount of on-the-job experience.

TECHNICAL STANDARDS

Applicants in the building trades: building construction program must be able to meet the following physical requirements.

1. Must be able to lift 50 pounds to shoulder height.
2. Must be able to perform safely in the laboratory.
3. Must be able to communicate orally with a person 20 feet away.
4. Must be able to climb a ladder.
5. Must be able to stand for long periods of time.
6. Must be able to visually read from a blueprint or drawing.
7. Must be able to hear a backup warning alarm.

Applicants in the air conditioning and heating technology program must be able to meet the following physical requirements.

1. Must be able to lift 50 pounds to shoulder height.
2. Must be able to perform safely in the laboratory.
3. Must be able to communicate orally with a person 20 feet away.
4. Must be able to climb a ladder.
5. Must be able to stand for long periods of time.
6. Must be able to visually read from a blueprint or drawing.
7. Must be able to hear a backup warning alarm.

Applicants in the masonry program must be able to meet the following physical requirements.

1. Must be able to lift 50 pounds to shoulder height.
2. Must be able to perform safely in the laboratory.
3. Must be able to communicate orally with a person 20 feet away.
4. Must be able to climb a ladder.
5. Must be able to stand for long periods of time.
6. Must be able to visually read from a blueprint or drawing.
7. Must be able to hear a backup warning alarm.

Applicants in the heavy equipment operations program must be able to meet the following physical requirements.

1. Must be able to lift 50 pounds to shoulder height.
2. Must be able to perform safely in the laboratory.
3. Must be able to communicate orally with a person 20 feet away.
4. Must be able to climb, un-aided, onto and off of equipment using three points of contact.
5. Must be able to stand for long periods of time.
6. Must be able to visually read from a blueprint or drawing.
7. Must be able to hear a backup warning alarm.

DEPARTMENT PROGRAMS

- Air Conditioning and Heating Technology (AOS)
- Building Trades: Building Construction (AOS)
- Heavy Equipment Operations (AOS)
- Masonry (AOS)

Business Department

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The Business Department of Alfred State College provides training and educational experience to those seeking technical knowledge in management and related disciplines in order to serve the dynamic needs of diverse constituencies in a competitive society.

The department offers 14 programs for students desiring immediate employment or wishing to pursue a four-year degree.

Classrooms are equipped with up-to-date electronic equipment. Computer technology has been integrated into course content. Computers are networked to classrooms, faculty offices, residence halls, and the Internet.

Courses during the first year in virtually all business programs are almost identical. This “core block” of courses enables students, during freshman year, to easily transfer from one program to another with no loss of academic credit. Students may enter the programs in either the fall or spring semesters.

All programs in business provide graduates with maximum employment flexibility. Many associate graduates go on to pursue bachelor’s degrees in business or business education while many graduates of the BBA programs go on to pursue master's degrees.

All business programs are computer-based, mixing both theory and practice. Technical accounting knowledge, communication and interpersonal skills, and career-related computer literacy are stressed throughout the programs. Graduates of two-year degree programs have the option of entering the job market or pursuing a four-year or advanced degree.

Students completing virtually any Business Department two-year degree may seamlessly transfer directly into one of our own bachelor degree programs.

Students in technology management, financial planning, or sport management (BBA) programs have the advantage of participating in a semester-long, 12-credit internship during their last semester, providing them real-life experience. Many times these lead to full-time employment upon graduation.

FACILITIES

The court and realtime reporting laboratory is equipped with computer-aided translation equipment at every student workstation. All students receive hands-on instruction using computer-aided translation (CAT) equipment. This real-time translation skill enables the graduate to take advantage of closed-captioning employment opportunities.

DEPARTMENT PROGRAMS

- Accounting (AAS)
- Business Administration (Transfer) (AS)
- Business Administration (BBA)
- Business Management (Career) (AAS)
- Court and Realtime Reporting (residential and online) (AAS)
- Court Reporting and Captioning (Certificate) (online only)
- Entrepreneurship (Certificate and AAS)
- Financial Planning (BBA)
- Financial Services (AAS)
- Marketing (AAS)
- Sport Management (BBA)
- Sports Management (AS)
- Technology Management (BBA)

Civil Engineering Technology Department

Jeffrey K. Marshall, Chair, phone: (607) 587-4649; fax: (607) 587-4620
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The Department of Civil Engineering Technology offers a bachelor's program in construction management engineering technology to serve the construction industry and the civil engineering profession as well as an associate degree program in construction engineering technology; additionally it offers associate and bachelor degree programs in surveying engineering technology to serve the surveying profession. Students are required to have laptops. The laptops allow students wireless access to the campus network from any location on campus.

DEPARTMENT MISSION

To provide graduates with the skills necessary to have a successful career in their chosen field, have a better understanding of the world we live in, and improve their own lives.

FACILITIES

The Department of Civil Engineering Technology offers all students in the department use of extensive laboratory facilities that enhance each student's learning experience as it relates to his/her chosen program.

Construction Management Laboratory – is equipped with 20 computer work stations in conjunction with appropriate estimating software and hardware to digitize quantities from drawings and work up estimates with minimal manual input. Software commonly used for project scheduling and planning is also used with the computers in this facility to develop PERT and CPM charts. Construction Project Administration software is also used in this lab.

Soils, Concrete, and Material Testing Laboratory – provides a meaningful experience in laboratory and field testing of various construction materials and structural systems. The equipment enables students to learn procedures that meet recognized field testing procedures of the American Concrete Institute (ACI) and the American Society for Testing and Materials (ASTM).

Hydraulics Laboratory – is equipped to offer students an applied as well as theoretical approach to the study of hydraulic problems encountered in civil engineering technology and the construction industry.

Surveying Computations Laboratory – contains microcomputer workstations, plotters, digitizers, and overhead projection systems. It is designed to support the "field-to-finish" concept of surveying data collection, data reduction, and analysis as well as computer-aided drafting and design. Students use this facility to work with land development and design software, geographic information system software, and the reduction of satellite data. This lab enables students to do word processing, spreadsheet analysis, programming, data analysis, networked computer-aided design and drafting, and advanced 3D modeling.

Surveying Laboratory and Equipment Room – serves as the basic laboratory/lecture area for surveying field/design projects. Adjacent to this lab is the room housing myriad equipment, including electronic total stations, global positioning satellite equipment, theodolites, transits, and levels.

DEPARTMENT PROGRAMS

- Construction Engineering Technology (AAS)
- Construction Management Engineering Technology (BS)
- Surveying Engineering Technology (AAS and BS)

Computer Imaging and Architectural Engineering Technology Department

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The Department of Computer Imaging & Architectural Engineering Technology offers degrees in architectural technology, digital media and animation, and interior design. In the architectural area, a bachelor of science degree program in architectural technology and an associate in applied science degree in architectural engineering technology are offered. These degrees are designed to serve the varying needs in the profession of architecture. The associate of applied science degree in digital media and animation and bachelor of science degree in digital media and animation serve the emerging new media, entertainment and computer animation areas. The associate of applied science degree in interior design provides graduates with basic knowledge and skills for entry-level positions in the interior design discipline.

DEPARTMENT MISSION

The CIAET Department at Alfred State College prepares graduates for immediate employment or continued educational opportunities in a range of design and technology-related disciplines. The department provides quality technical education that integrates theory and practice with a foundation in the arts and sciences.

FACILITIES

The Department of Computer Imaging and Architectural Engineering Technology offers all students in the department use of extensive laboratory facilities that enhance each student's learning experience as it relates to his/her chosen program.

Architectural Studios - Junior and senior baccalaureate-level students have access 24 hours per day to three studios. These rooms in the Engineering Technology Building contain 15 advanced computer visualization workstations. Peripheral devices such as scanners, digital cameras, and large format color plotters are readily available. All entering students in both architecture and interior design programs are required to purchase a laptop computer. The laptop enables students to have access to program-specific software via the wireless network on campus.

Digital Media and Animation Computing Laboratories, 2D and 3D Processes Laboratories - A highly sophisticated computer lab provides industry standard capability in 2D graphics, Web design, interactive multimedia, 2D animation, and TV/film quality 3D animation; an art and design lab provides production space for associated traditional creative studies in drawing, color theory, 3D form theory, and aesthetics. All entering students in the digital media and animation programs are required to purchase a laptop computer. The laptop enables students to have access to program-specific software via the wireless network on campus.

DEPARTMENT PROGRAMS

- Architectural Engineering Technology (AAS)
- Architectural Technology (BS)
- Digital Media and Animation (AAS)
- Digital Media and Animation (BS)
- Interior Design (AAS)

Computerized Design & Manufacturing Department

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The Computerized Design & Manufacturing Department has three exciting and very rewarding areas of study: the drafting/CAD programs, the machine tool technology program, and welding.

Addressing the ever-increasing need for professionally trained CAD drafters, the drafting/CAD programs provide graduates with necessary skills and knowledge to successfully compete for entry-level positions. Graduates of our programs will have successfully completed 1,800 hours as follows: 120 hours of applicable math and 30 hours of geometric dimensioning and tolerancing. The balance is instruction of drafting techniques and concepts on students' laptops using AutoCAD, or Unigraphics software. The first year's work is directed toward the student's gaining a thorough understanding of the fundamentals of drafting principles, tolerancing, manufacturing processes, procedures, and applied mathematics. The student's senior year is devoted to the discipline of the student's choice.

With the rising demand for skilled machine operators and machinists, the machine tool technology programs provide graduates with skills needed to perform well in an industrial setting. Manual machine tools are used extensively for the first year of the program. The second year of the machine tool technology program offers the use of computer numerical control machine tools as well as cutting-edge software and advanced machine techniques.

Graduates of the machine tool programs successfully complete 1,800 class hours as follows: 120 hours of related math and 120 hours of print reading; the balance is machine instruction and programming.

Graduates of the welding program will have successfully completed 1,800 hours of related course work. The welding program offers hands-on and classroom training in the skills necessary to become certified as an entry-level welder. The program is taught according to the standards set by the American Welding Society (AWS) and features newly equipped labs. Students learn MIG, TIG, stick arc, plasma, Flux Core, Shielded Metal Arc, and Oxy-Fuel welding processes on state-of-the-art equipment from Lincoln and Miller among others. In addition, fundamentals of welding metallurgy, testing and inspection, blueprint reading, fabrication, and industrial related special welding processes are incorporated in the program. Welding students are given the opportunity to take certification tests after successful completion of their welding course.

Technical Standards for Welding & Machine Tool

Applicants for the welding and machine tool programs in the Computerized Design and Manufacturing Department must meet the following physical requirements.

1. Must be able to perform safely in the shop.
2. Must be able to lift 50 pounds to eye level.
3. Must be able to communicate orally with a person six-10 feet away in a shop environment.
4. Must be able to visually decipher an oscilloscope monitor and digital/analog meter, and scan tool displays.
5. Must be able to diagnose mechanical failures that are distinguished audibly.
6. Must be able to understand and retain information found in service repair manuals and use diagnostic flow charts.
7. Must be able to visually read an LCD display on welding equipment.
8. Must have the dexterity and mobility to weld in all the welding positions to meet all requirements.
9. Good eyesight is recommended.

Industrial internships are available to all students of Alfred State College Computerized Design & Manufacturing Department. These opportunities allow the student to interact in a professional work environment. Upon successful completion, appropriate college credit is applied to the student's record as applies.

Please refer to the most current required tool list on the Alfred State College Web site: http://www.alfredstate.edu/questions/high-school-seniors-and-recent-graduates/what-tools-do-i-need-for-my-curriculum.

FACILITIES

The drafting facilities simulate typical industrial settings. Plotting media, scanning equipment, and various projection systems are used in the delivery of daily lectures and presentations. Students work using cutting-edge software on their own notebook computer.

The first-year machine tool lab is equipped with manually operated machines (lathes, mills, shapers, grinders, etc. and appropriate tooling), establishing a solid machining foundation upon which to continue. Acquisition of this new equipment stems from a $1,000,000 grant from the Gleason Foundation. This equipment allows students to use the most up-to-date technology available. The second-year machine tool technology program is located in an actual industrial setting. The second-year machine tool student will be instructed in the use of NC and CNC machine tools and may apply this knowledge in a shadowing experience in the host companies' facilities.

The welding shop, established using a $300,000 federal Appalachian Regional Commission grant, houses 20 individual welding booths, each with an adjustable exhaust pick-up. It contains heavy-duty industrial grade welders, TIG, MIG, Oxy-fuel, and arc welders along with oxy-fuel and plasma cutters. Hydraulic bend tester and grinders comprise the equipment in this facility. In our newly outfitted senior welding lab, tools used in the fabrication industry will be used. This impressive facility is located adjacent to our machine tool center at a local industrial park.

DEPARTMENT PROGRAMS

- ☐ Drafting/CAD
- ☐ Machine Tool Technology (AOS)
- ☐ Welding Technology (AOS)

Culinary Arts Department

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The food industry, and in particular food production and management, is one of the most dynamic and fastest growing industries in the world. The variety and number of culinary employment opportunities are apparent to anyone who has dined in a restaurant, resort, college dining hall, hospital, or coffee shop. The industry offers a wide range of career opportunities on many levels, including food production and service, food production management, supervisor of food production employees, and employee training programs.

Students in this program learn culinary arts by cooking approximately 750 meals a day in our cafeteria and in our a la carte lunch and fine dining kitchens. Through production at "real-world" levels, they develop professionalism, quality, and efficiency. Our labs include institutional, a la carte, evening fine dining, and baking, hands-on food planning, production, service, and management and supervisory skills to meet real customers' needs.

TECHNICAL STANDARDS

1. Perform lab functions while standing on their feet for extended periods of time (up to five hours) daily.
2. Be proficient in reading (for guest checks, recipes, and instructional manuals) and mathematics (for recipe conversion, cost control, and calculations associated with food production and service).
3. Write with sufficient clarity for communication with faculty, kitchen personnel, and guests.
4. Lift 40 pounds from floor to eye level.
5. Orally communicate with people six to 10 feet away.
6. Visually identify degree of product doneness.
7. Walk on a slippery floor while carrying 40 pounds with caution and safety.
8. Handle kitchen equipment, including knives, with dexterity and safety.

Please refer to the most current required tool list on the Alfred State College Web site: http://www.alfredstate.edu/questions/high-school-seniors-and-recent-graduates/what-tools-do-i-need-for-my-curriculum.

FACILITIES

The Cafeteria Lab gives students the opportunity to learn quantity food production for institutional production of food through the preparation and service of 700 institutional meals daily.

The Restaurant Lab is a well-equipped dining room and a la carte kitchen which has the equipment used in commercial restaurants. Students prepare and serve meals to order for approximately 40 luncheon patrons daily. It is also used for our evening fine dining lab where up to 16 patrons are treated to gourmet delights in the only evening meal training program in Western New York. Selected banquet activities are scheduled so that students may learn to plan and prepare for catered events. Breakfast, lunch, and dinner special events are scheduled each semester.

The Bakery Lab is reputed to be the best equipped training facility of its kind in the state. The student has access to virtually all types of baking equipment used commercially to produce baked goods. The bakery is adjacent to an institutional food production laboratory and an a la carte kitchen where baked goods are an integral part of the 750 meals produced daily. The Baking Lab is a learning-production lab for quantity baking for a cafeteria, restaurant dining, or catered functions. In addition, the preparation and presentation of elaborate creations common to up-scale restaurants offers creative students the opportunity to develop their talents.

An amphitheater-style resource-demonstration room equipped with computers, video taping capabilities, and an extensive library of cookbooks and videotapes is within our building with access for all.

DEPARTMENT PROGRAMS

- Culinary Arts (AOS)
- Culinary Arts: Baking, Production & Management (AOS)

Electrical Trades Department

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Electricity, and the electricians who install and maintain these systems, plays a critical role in the function of the nation's and the world's complex industrial technology, as well as an individual's personal environment. Nearly all aspects of an individual's life are affected by some component of this diverse field. Without competent personnel to support today's complex electrical systems, our lives and the economy would be seriously impacted. The faculty and staff of the Electrical Trades Department will work with you to provide the skills and occupational competence necessary for entry in the field of electrical technologies.

FACILITIES

The Electrical Trade's laboratories are well equipped with electrical test equipment. You will facilitate your learning by direct hands-on applications of the theory, knowledge, and skills presented in lecture. In this program approximately 50 percent or more of each day is spent working hands-on in the laboratory.

The opportunity for real-life work experience is integrated into our program. Much of the hands-on electrical training provided in the freshman year consists of actual wiring projects off campus. The senior electrical students receive real-life experience working with the campus maintenance department, trouble-shooting campus equipment, rewiring existing facilities, or designing and installing the electrical systems in new facilities. Seniors also will design and install automated projects in the lab incorporating relay logic, PLC's, pneumatics, hydraulics, and process control systems.

Computer technology has been integrated into all of the courses. The facilities for the Electrical Trades Department have full wireless network capability for students with laptop computers having network cards. The classrooms are also fully wired with ports for the desktop computers provided and for student laptops without wireless capabilities.

EXPENSES

Electrical construction and maintenance electrician program: The cost for textbooks, tools, and lab supplies is approximately $1,200 for the two years of study.* A laptop computer is not required for this program.
(*Please refer to the most current required tool list on the Alfred State College Web site: http://www.alfredstate.edu/questions/high-school-seniors-and-recent-graduates/what-tools-do-i-need-for-my-curriculum.)

TECHNICAL STANDARDS FOR THE ELECTRICAL CONSTRUCTION & MAINTENANCE ELECTRICIAN PROGRAM

Math sequence I & II recommended for all programs.

1. Must be able to visually translate information on analog or digital meters and other test equipment.
2. Must be able to lift 50 pounds to eye level.
3. Must be able to communicate orally with a person six-10 feet away.
4. Must be able to read and decipher information found in technical manuals.
5. Must be able to adhere to and perform all safety requirements.

DEPARTMENT PROGRAMS

- Electrical Construction and Maintenance Electrician (AOS)

English and Humanities Department

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The English and Humanities Department offers courses in composition, foreign language, fine art, speech, philosophy, and literature for the entire College.

Increasingly, colleges, universities, and large corporations have been emphasizing the significance of a liberal arts and sciences education in providing a solid foundation upon which careers are built. The liberal arts and sciences: humanities program prepares students for life by stressing the importance of reading, writing, and thinking while developing in them an appreciation of the arts and of the wisdom of great minds.

The department is housed in the Hunter Student Development Center, with mathematics, computer, and study skills labs as well as classrooms equipped with the most recent technological teaching aids.

DEPARTMENT PROGRAMS

- Liberal Arts & Sciences: Humanities (AA)

Computer and Information Technology Department

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The Computer and Information Technology (CIT) Department offers both associate and bachelor degrees. The department offers the following associate of applied science degree programs: computer information systems and computer engineering technology. Both of these programs allow graduates to enter the job market at the end of two years or continue their education. Students who earn the computer information systems AAS (associate of applied science) degree may continue in any of the Department's bachelor of technology (BTech) degree programs. Students earning an associate of applied science degree in computer engineering technology may enter the department's computer engineering technology BS (bachelor of science) degree program. The department also offers an associate of science (AS) degree program in computer science. The associate of science degree program is designed to allow students to transfer to a college that offers a bachelor of science degree program in computer science.

The Computer and Information Technology Department offers four bachelor of technology degree programs in information technology and one bachelor of science program in computer engineering technology. The four bachelor of technology degree programs are information security and assurance, network administration, Web development, and applications software development. During the first two years, students who enter any of our bachelor of technology degree programs will receive hands-on focused technical education in all the major areas of information technology. After completing two years of study, bachelor of technology students can major in any of the department's four bachelor of technology degree programs. All of the department degree programs are designed to allow for employment in the rapidly expanding computer and information technology industry. Students may enter these programs as freshmen or transfer in as juniors from related associate degree programs. Articulation agreements have been developed with several community colleges.

Students are allowed 24-hour access to state-of-the-art-software and hardware. Nearly 50 percent of technical courses in the CIT programs will be taught in a lab environment to allow for important hands-on experience.

FACILITIES

Networking Laboratories - Two fully equipped networking laboratories are used to give students hands-on experience so critical to the competitive computer and information technology job market. These newly upgraded labs contain state-of-the-art equipment. The college has an academic license for VMWare software products so students, using the latest version of VMWare Workstation, can run multiple guest operating system virtual machines on our powerful lab computers creating complex layered virtual networks that can be directly connected to any of our lab network equipment. The department has a blade server with 48 gigabytes of RAM and 12 terabyte storage array upon which VMWare enterprise software is used to create a private cloud infrastructure where students can create and access virtual applicances. The college has an academic license for all Microsoft software which allows students to acquire experience using the latest enterprise network operating systems such as Server 2008 and the latest enterprise security software such as ISA Server 2006. The department has a Cisco Certified Academy so our advanced networking lab contains a full complement of Cisco routers, switches, and wireless access points. Being a Cisco academy allows our instructors to freely access all Cisco advanced networking software. As a certified academy, the Department has Cisco-certified instructors to teach the Cisco Certified Network Associate (CCNA) and CCNA Security curriculum. Additionally, our advanced networking lab contains a full complement of network security equipment to include Cisco PIX firewalls, Cisco Adaptive Security firewalls, Juniper application firewalls, and Juniper SSL VPN concentrators. All of our networking equipment is professionally installed on 19-inch racks with multiple patch panels, thus allowing our students to design and implement complex client/server network and security architectures.

Systems Laboratory - This lab is used for teaching microcomputer hardware and operating systems installation, upgrading, troubleshooting, and maintenance.

Multimedia Laboratory - This lab is equipped with the newest versions of Web development software to include Adobe Creative Suite 5 and the latest Microsoft Web applications.

General Purpose Laboratories - General purpose laboratories are equipped with Web, office, and programming software. They are used for a variety of courses such as programming, Web, database, and microcomputer applications. The department has an academic license with Oracle which allows students and professors to access over $750,000 worth of software.

DEPARTMENT PROGRAMS

- Computer Engineering Technology (AAS)
- Computer Engineering Technology (BS)
- Computer Information Systems (AAS)
- Computer Science (AS)
- Information Security and Assurance (BTech)
- Information Technology: Applications Software Development (BTech)
- Information Technology: Network Administration (BTech)
- Information Technology: Web Development (BTech)

Mathematics/Physics Department

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The Department of Mathematics/Physics offers a variety of courses which include pre-algebra, algebra, trigonometry, statistics, calculus, differential equations, astronomy, physics, and physical science. Students are recommended for placement in mathematics on the basis of their high school preparation and their placement test score.

The department faculty serve as advisers for students majoring in the areas of mathematics and/or science and for those in the pre-environmental science and forestry programs. They also serve as advisers for undeclared majors.

Physics and physical science courses develop within the student an understanding of basic physical principles and an appreciation of the natural environment. Technical programs require a firm foundation in fundamental physics. To that end, courses also encourage and develop the student's competence in the use of logical procedures in problem solving.

Math courses are taught to develop students' abilities in logical reasoning, problem solving, and critical thinking, as well as to build algebraic reasoning and calculus skills.

FACILITIES

The physics laboratories are well equipped with apparatus to facilitate learning by direct experience and to provide students with an opportunity to "discover" many principles on their own. The laboratory instructor is a member of the regular teaching staff and, in most cases, is the same instructor that the student has for the physics lecture session.

Facilities include a linear air track, lasers, air table, x-ray recorders, gamma spectrometers, oscilloscopes, precision electrical measuring devices, strobe lights, precision timers, and an 8-inch Cassegrain telescope, as well as a large collection of traditional physics apparatus, many of which are used directly by the students in their laboratory work. In addition, the Mathematics/Physics Department has an extensive collection of audio-visual materials.

There is a computer facility adjacent to the physics laboratories, with 10 computer terminals available for student use. Students are encouraged to use the computer for both laboratory data analysis and wherever appropriate application can be made to their lecture course.

Math and physics tutorials are available to students on the campus computer network and several math courses are taught using innovative computer software.

DEPARTMENT PROGRAMS

- Liberal Arts & Sciences: Math & Science (AA)
- Pre-Environmental Science & Forestry (AA)
- Undeclared Major

Mechanical and Electrical Engineering Technology Department

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The Mechanical and Electrical Engineering Technology Department has several programs that prepare graduates to join the workforce as successful technical and management professionals in a variety of industries. The department offers a broad range of degrees in electrical engineering technology, mechanical engineering technology, engineering science, CAD/CAM, mechanical design engineering technology, and electromechanical engineering technology. The programs are supported by a unique

combination of mechanical and electromechanical facilities, equipment, and faculty resources. This enables the department to respond directly to new technologies as they evolve in areas such as controls, robotics, automation, microelectronics, process control, computer analysis, and sustainable/renewable energy.

Each degree provides useful career-building skills for students who seek employment immediately upon graduation or continue their education toward advanced degrees. The programs are well rounded and provide graduates with the appropriate technical and non-technical knowledge, experience, and skills that will enable them to be successful and continually adapt to change in these dynamic career fields.

Since the programs are related to nearly every company, product, or process, graduate placement is excellent. The Mechanical and Electrical Engineering Technology Department maintains active contact with related industries and professional societies and works closely with them to assist graduates in exploring their profession and creating contacts for employment. Educational opportunities also occur through internships, projects, competitions, and field trips in addition to memberships in several active professional society student chapters. The Mechanical and Electrical Engineering Technology Department has several programs that provide a foundation in many areas, including computer-aided engineering and graphics, energy systems, manufacturing and materials, automation, and product and machine design. Graduates find employment in these and many related areas.

DEPARTMENT MISSION

To prepare graduates for immediate employment and continued educational opportunities through a quality technical and experience-based education.

FACILITIES

The Mechanical and Electrical Engineering Technology Department offers extensive laboratories to support each program with equipment, instrumentation, and test facilities directly related to each field of specialization. These facilities provide the practical experience needed by today's technical graduates. The application of computers for analysis, data acquisition, data reduction, report writing, and technical presentations is also emphasized throughout the programs.

Advanced Electronics Laboratory - Each workstation in this laboratory has a computer that controls automated test equipment stations with a waveform generator, digitizing oscilloscope, multimeter, and power supplies. Students can capture the oscilloscope display, run an automatic frequency response, or measure device characteristics and insert these results into their laboratory reports. The workstations have programs for data analysis and circuit simulation such as Excel, MATLAB, PSpice, and MultiSIM. Internet connections allow quick reference to manufacturers' data sheets. In addition to the general-purpose and automated test equipment, the laboratory also contains data communications test equipment.

Analog and Digital Electronics Laboratory - Each workstation in this laboratory has a computer that controls automated test equipment stations with a waveform generator, digitizing oscilloscope, multimeter, and power supplies. Students can capture the oscilloscope display, run an automatic frequency response, or measure device characteristics and insert these results into their laboratory reports. The workstations have programs for data analysis and circuit simulation such as Excel, MATLAB, PSpice and MultiSIM. Internet connections allow quick reference to manufacturers' data sheets. In addition to the general-purpose and automated test equipment, the laboratory also contains data communications test equipment.

Automated Manufacturing Laboratory – provides direct experience with computer numerical control (CNC) machines, robotics, and the integration of robotic concepts to automated manufacturing. Part design and programs for operation of the CNC systems are prepared and executed. A new addition to this lab is a 3-axis coordinate measuring machine for parts inspection and reverse engineering.

Computer-Aided Design Laboratory – provides a true design environment that is supported by the latest software for drafting, solid modeling, product design, mechanism & system design, calculations, presentations, and analysis. Labs consist of either "stand alone" desktop computers or student laptops.

Control Systems Laboratory – provides experience with logic control systems as they apply to motors, pneumatics, hydraulics, and processes utilizing control relays, contactors, switches, programmable logic controllers, actuators, regulators, valves, and flow controls. Students learn the logical sequence of controls and understand different applications by designing, fabricating, and testing systems.

Electromechanical and Industrial Automation System Laboratory - This laboratory provides an integrated engineering systems approach toward understanding automation principles with emphasis on embedded microcontrollers. Exposure to electrical, mechanical, and process control areas is integrated into this laboratory allowing for evaluation of embedded controller applications using motion control and peripheral devices such as pushbuttons, switches, seven segment and liquid crystal displays (LCD), matrix keypads, analog to digital converters, and radio frequency (RF) and Infrared (IR) interface links.

This laboratory also introduces the student to general characteristics of electromechanical sensors and transducers, electrical measurement systems, electronic signal conditioning, and response characteristics of instruments. Industrial equipment, such as a punch press, drill press, and metal lathe are equipped with sensors that are configured to measure physical quantities such as force, strain, displacement, velocity, and acceleration. Computers in the laboratory running LabVIEW software perform data acquisition, calculation, and report generation with a graphical user interface.

Utilizing renewable energy sources requires environmental monitoring. Laboratory activities could include using transducers to measure wind speed and direction, solar radiation, and temperature.

Electromechanical Controls Laboratory - This laboratory contains relay and pneumatic devices to connect industrial controls. This laboratory is also equipped with eight matched sets of AC and DC fractional horsepower machines and the test equipment necessary to analyze their performance. Stepper motors, servo motors, programmable logic controllers (PLC), transformers, rectifiers, synchronous machines, loading devices, variable frequency drives, and a simulated transmission line relay demonstrator are available and used for laboratory experiments.

Electronic Fabrication Laboratory - This is a freshman “skills” laboratory covering a wide range of basic electronic fabrication techniques. It introduces the student to layout and design software tools for sheet metal chassis and printed circuit board (PCBs) designs, electronic component identification, the proper use of soldering/de-soldering tools, wire-wrapping, schematic layout, and PCB design and fabrication techniques, as well as familiarization with a wide range of hand and power tools and proper safety practices. The laboratory is equipped with a kick-shear, punch press, bending brake, drill presses, Pace solder stations, CNC rapid prototype machine, ultra-violet light table, and PCB developer and etching system. These facilities are also used to support development and fabrication activities for other course areas and student projects as well.

Energy Systems Laboratory – provides students hands-on experience with state-of-the-art equipment that deals with alternative energy issues. Systems include conventional flat panel solar heating, solar concentrators, solar-assisted heat pumps, co-generation and geothermal heat pumps. Real-time equipment performance data is used for simulation, modeling, and economic analysis.

HVAC&R (Heating, Ventilating, Air Conditioning and Refrigeration) Laboratories – provide hands-on experience in the areas of heating, ventilating, air conditioning, refrigeration, fluid mechanics, heat transfer, and thermodynamics. Classroom theory is reinforced through the application to heating systems (forced air furnaces, steam and hot water boilers), air conditioning and refrigeration systems, heat pump systems, and coils. The characteristics of the laboratory systems are investigated, tested, and evaluated for component and overall efficiencies. Students gain experience in the operation of electrical, power, temperature, pressure, air flow and water flow, combustion, and system balancing test equipment. These laboratories have been generously supported and upgraded through a large grant from a mechanical engineering technology alumnus and several ASHRAE (American Society of Heating, Refrigerating and Air Conditioning Engineers) senior project grants.

Machine Tool/Manufacturing Laboratory – is equipped with 20 manual tool room style engine lathes, vertical and universal milling machines, drill presses, and radial drill presses. Traditional machining

operations are introduced and reinforced in this laboratory with the goal of giving the students "hands-on" exposure to various methods and techniques applied to production so as to give a better understanding of the related design concepts.

Materials Testing Laboratory – includes a 160,000-pound universal testing machine and other test equipment to examine impact, torsion, hardness, and fatigue. Metallographic preparation and computer-aided image processing are used to examine material structure. Heat treating furnaces are also used to investigate the effects of thermal processing.

Mechanical Design Laboratory – is equipped as a standard industrial research and development laboratory in the area of mechanical systems dynamics. This facility enables students to analyze rotational equipment, industrial power transmission devices, and various mechanical linkage designs. Using a "learn-by-doing" approach, students are able to apply the theoretical concepts conveyed during lecture to complete rigorous laboratory assignments.

Metrology & Measurements Laboratory – serves as a state-of-the-art "quality assurance" center and is anchored by new equipment recently donated by area companies. Facilities include a manual coordinate measurement machine donated by Helmel Engineering and a digital Starrett optical comparator and direct computer controlled coordinate measurement machine, both acquired through a grant from the Gleason Foundation.

Semiconductor Manufacturing Laboratory - This laboratory gives the student a realistic experience in semiconductor manufacturing process. In industry, the nature of the integrated circuit (IC) fabrication process is highly complex and absolutely intolerant of mistakes.

DEPARTMENT PROGRAMS

- CAD/CAM Technology (AAS)
- Electrical Engineering Technology (AAS and BS degree)
- Electromechanical Engineering Technology (AAS and BS degree)
- Engineering Science (AS)
- Mechanical Design Engineering Technology (AAS)
- Mechanical Engineering Technology (AAS and BS degree)

Nursing Department

Dr. Kathleen Sellers, Chair, phone (607) 587-3680
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Associate's Degree - The Nursing Department offers an NLNAC (National League for Nursing Accrediting Commission, 61 Broadway, New York, NY 10006; 1-800-669-1656) accredited associate degree nursing program which prepares individuals to become Registered Nurses (RNs). The nursing major is designed to be completed in two academic years, but may be revised to meet individual needs. Licensed practical nurses or transfer students from other nursing programs are eligible for advanced placement.

Bachelor's Degree - The Nursing Department also offers a 2+2 completion program which results in a bachelor of science (BS) degree. he BS program can be completed full-time in two years or part-time as the student desires. The upper level nursing courses are offered in a hybrid format with the majority of the class online and two days on campus (usually Saturdays) a semester. The upper level course work includes nursing, science, and liberal arts.

DEPARTMENT PROGRAMS

- Nursing (AAS)
- Nursing (BS)

Physical and Health Sciences Department

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Welcome to the Physical and Health Sciences Department at Alfred State College. The department provides students a strong education in a wide range of scientific and technical disciplines through online and on-campus curricular offerings. Faculty specializations span a spectrum including health information technologies, plant physiology, genetics, nutrition science, forensic science, chemical instrumentation, microbiology, and physical chemistry. While diverse, the faculty and staff share the common goal of effectively delivering the practical and theoretical foundations of disciplines through a rich blend of interactive lectures, informal discussion, meaningful laboratory inquiries, and internships. In addition to discipline-related course work, each program is complemented by a broad array of general education courses aimed at equipping students with insights and background that will help fulfill their roles in greater society. Emphasis is also placed on life-long learning as reflected by the many articulation agreements assuring seamless transition to other programs within Alfred and to other institutions of higher learning.

The department offers students direct use of state-of-the-art laboratory/clinical equipment in real-world or simulated settings, and provides state-of-the-art virtual laboratory experiences. Practical, hands-on competencies, critical reasoning skills, and where pertinent, team-based problem solving is *de rigueur*. If a student expresses an interest outside of a discipline's normal scope, independent study options may also be developed.

In some programs there are physical ability requirements based on individualized assessment rooted in current medical evidence or the best objective evidence. See each program for specific physical requirements. If a student's physical ability compromises or threatens his/her success in a program, or the health and safety of others, he/she may be denied enrollment or continuation in the program.

FACILITIES

For the next two years, the department is temporarily housed in a new location due to an exciting and welcomed $18 million renovation of the Allied Health Building. The biological science and forensic science technology programs are located in the Agriculture Science Building. This six-lab and greenhouse facility houses state-of-the-art equipment and instrumentation, models and application software for teaching and learning, as well as for independent study and research. The online health information technology and coding and reimbursement specialist curricula are located online.

Explore the information describing the different curricular offerings and courses of the department below.

DEPARTMENT PROGRAMS

- Biological Science (AAS)
- Coding & Reimbursement Specialist (Certificate)
- Forensic Science Technology (BS)
- Health Information Technology (AAS)

Social and Behavioral Sciences Department

Michael J. Cobb, Chair, phone: (607) 587-4282
E-mail address: cobbmj@alfredstate.edu

The Department of Social and Behavioral Sciences offers courses in anthropology, criminal justice, education, history, human services, political science, psychology, and sociology. It coordinates four curricula: human services management, human services, liberal arts & sciences: social science, and liberal arts and sciences: adolescent education (teacher education transfer).

HUMAN SERVICES MANAGEMENT

The human services management (BS) program prepares graduates for mid-level positions in human services and social services agencies requiring skills in both direct service to clients and in management. It also prepares them for transfer into graduate-level programs in such areas as human services, public administration, and social work administration.

HUMAN SERVICES

The human services (AS) associate-level program prepares students for entry-level career positions in a variety of human service occupations or to continue their education in baccalaureate programs. Students who pursue careers upon graduation often work with the elderly, or in early childhood, chemical dependency, or mental retardation programs. Students who transfer often select baccalaureate majors in human services management, social work, criminal justice, education, human services, psychology, and sociology.

LIBERAL ARTS & SCIENCES: SOCIAL SCIENCE

The liberal arts and sciences: social science (AA) program is a transfer program that provides flexibility to students in their choice of future major. Students take considerable course work in psychology, sociology, and history, and additional courses in mathematics, English, the humanities, and the natural sciences. When transferring, students often select baccalaureate majors in psychology, anthropology, sociology, political science, history, gerontology, communications, early childhood/childhood education, adolescent education, and criminal justice.

LIBERAL ARTS & SCIENCES: ADOLESCENT EDUCATION (TEACHER EDUCATION TRANSFER)

The liberal arts and sciences: adolescent education (teacher education transfer) program prepares graduates to transfer to a four-year adolescent education program at a public or private college or university. Students may select one of six concentrations - history/social studies, English, math, physics, biology, or chemistry.

DEPARTMENT PROGRAMS

- Human Services Management (BS)
- Human Services (AS)
- Liberal Arts & Sciences: Social Science (AA)
- Liberal Arts & Sciences: Adolescent Education - Teacher Education Transfer (AA)

PROGRAMS AT ALFRED STATE COLLEGE

ACCOUNTING

AAS Degree – Code #0630

Thomas Stolberg, Program Coordinator
E-mail address: stolbete@alfredstate.edu

The accounting program is one of the most established and respected programs within the business discipline. It is a computer-based program in which accounting theory and practice receive equal emphasis as applied to both financial and managerial accounting issues. It intends to support the career objectives of those looking to enter the job market upon graduation, as well as the academic needs of those looking to pursue a four-year degree. Required course work covers areas critical to success in today's business workplace:

1. Technical accounting knowledge
2. Communication and interpersonal skills
3. Career-related computer literacy

A laptop computer is recommended, but not required, for students entering the accounting program. The College will provide a list of appropriate laptops and wireless modem cards to all students who have been accepted to attend Alfred State College.

TRANSFER OPPORTUNITIES

Students may transfer directly into one of our own BBA degree programs or to another college. To facilitate the transfer of graduates choosing to continue their education at the baccalaureate level, students are encouraged to make their intentions known to their academic adviser during their freshman year. Through the careful use of elective courses, students can realize excellent transfer credit.

The Business Department has established many formal articulation agreements with local four-year institutions, although graduates may transfer to colleges virtually anywhere. Historically, accounting graduates have done very well after leaving Alfred State, whether they enter the work force or transfer to an advanced program.

OCCUPATIONAL OPPORTUNITIES

- Banking
- Manufacturing
- Retail
- Government
- Tax Agencies
- Non-profit Entities
- Financial Services

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 100 percent transferred to continue their education.

RELATED PROGRAMS

- Agricultural Business
- Business Administration
- Computer Information Systems
- Financial Planning
- Financial Services
- Marketing
- Technology Management

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra (Math A)
Recommended: Geometry and Algebra 2/ Trigonometry (Math B)

ACCOUNTING - AAS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
ACCT	1124	Financial Accounting	4
COMP	1503	Freshman Composition	3
CISY	1103	Information Technology Mgt.	3
MKTG	2073	Principles of Marketing	3
MATH	xxx3	Math Elective	3
HPED		Physical Education Elective	1
			17

Second			
ACCT	2224	Managerial Accounting	4
BUAD	2033	Business Communications	3
BUAD	4203	Personal Financial Planning	3
	xxx3	Humanities Gen Ed Elective	3
MATH	xxx3	Math Elective	3
	xxx3	Gen Education Elective	3
			19

Third			
ACCT	3423	Intermediate Accounting I	3
CISY	xxx3	Computer Elective	3
ECON	1013	Macroeconomics	3
ACCT	3433	Cost Accounting I OR	
ACCT	3453	Tax Accounting I	3
BUAD	3043	Business Law I	3
			15

Fourth			
ACCT	4523	Intermediate Accounting II	3
BUAD	3153	Fundamentals of Management	3
BUAD	4053	Business Law II	3
ECON	2023	Microeconomics	3
ACCT	4663	Accounting Systems & Computer Applications	3
			15

GRADUATION REQUIREMENTS

66 semester hours including 23 hours in major field with a 2.0 cumulative index in such courses as well as six hours of math.

AGRICULTURAL BUSINESS

AAS Degree - Code #0511

Dr. Dorothea Fitzsimmons, Program Coordinator
E-mail address: fitzsidd@alfredstate.edu

It is an exciting time to be an agricultural business student. One out of every six jobs in the American economy is related to the agriculture and food businesses. The curriculum in agricultural business is designed to provide students with the technical and business skills necessary to be successful in our nation's largest industry. Career opportunities in agribusiness range from managing a farm (dairy, beef, equine, vegetable, fruit, crops) to working in the nurseries, timber tracts, banking, or publishing industries. Ample opportunities are available in the management of farm supply stores or cooperatives, agricultural input sales, insurance, real estate, agricultural processing, and manufacturing industries.

Agricultural business managers also must have enough technical knowledge of crops, growing conditions, and plant diseases to make decisions ensuring the successful operation of their farms. A rudimentary knowledge of veterinary science, as well as animal husbandry, is important for livestock and dairy farmers. The agricultural business curriculum will provide the student with the basic business, crop, and animal skills to make informed business decisions.

SHOWMANSHIP DAY

All students enrolled in agriculture classes truly enjoy participating in the annual showmanship activities each spring. Students can select a species of animal (cattle, horses, swine, alpacas, or sheep) to train, groom, and show in this annual competition. Family, friends, and alumni are invited to enjoy the competition and the awards BBQ following the showmanship contest.

RELATED CLUBS AND ACTIVITIES

Students have the opportunity to participate in the Collegiate Agricultural Leaders (CAL) Club, Collegiate FFA, Equestrian Club, Dairy Judging Team, Agricultural Skills Day, Livestock Club, Spring Fling Consignment Sale, Community-Supported Agriculture projects, local foods projects, showmanship contests, and Sustainability Club.

TRANSFER OPPORTUNITIES

Students in the curriculum will also have an opportunity to transfer into the BBA technology management program at Alfred State College or transfer to other colleges offering related degrees. Many schools, including Cornell University, grant full credit to students wishing to transfer to four-year programs, usually in agricultural economics or agricultural education.
A formal articulation agreement exists between Alfred State College and Cornell University for transfer options.

SCHOLARSHIPS

The department offers various scholarships to students.

OCCUPATIONAL OPPORTUNITIES

- Management or Ownership of Commercial Farms
- Agricultural Credit Officers for Banks, Government, Loan Agencies, and Farm Cooperative Loan Agencies
- Feed, Seed, and Fertilizer Sales Technicians
- Writers of Technical Publications, Radio & TV Scripts, News Items for Magazines & Newspapers, Education & Public Relations Material
- Manager/Assistant Managers of Farm Supply Stores
- Warehouse Managers for Farm Chemicals, Feed, Seed, and Fertilizers
- Chain Store and Retail Food Management
- Agricultural Consulting Services

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 60 percent are employed; 40 percent transferred to continue their education.

RELATED PROGRAMS

- Agricultural Technology
- Accounting
- Marketing
- Entrepreneurship

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Recommended: Algebra (Math A)

AGRICULTURAL BUSINESS - AAS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
ANSC	1204	Intro to Animal Science	4
AGRI	1002	Intro to Agriculture	2
CISY	1003	Intro to Microcomputer Appl	
		OR	
CISY	1103	Info Technology Management	3
COMP	1503	Freshman Composition	3
	xxxx	Gen Education Elective	3-4
			15-16

Second			
ANSC	3213	Dairy Cattle Production II OR	
AGRI	2012	Organic & Sustainable Ag Tech.	2-3
BIOL	1304	Botany	4
ACCT	1124	Financial Accounting	4
	xxx3	Gen Education Elective	3
	XXXX	Ag Elective OR	
	xxx3	Business Elective	3-4
			16-18

Third			
ACCT	2224	Managerial Accounting	4
	xxxx	Ag Elective	3-4
AGEC	3213	Farm & Rural Business	3
	xxx3	Gen Ed or Technical Elective	3
	xxxx	Ag or General Education Elective	3
			16-17

Fourth			
AGEC	4303	Rural Business Finance	3
	xxx3	Bus or Marketing Elective	3
AGRI	4002	Seminar/Capstone Project	2
	xxxx	Gen Education Elective	3-4
	xxxx	Ag Elective	2-4
			13-16

Agriculture Electives:

ANSC	2114	Domestic Animal A&P
ANSC	3004	Feeds and Nutrition
ANSC	3103	Livestock Management and Production
ANSC	3202	Dairy Management Analysis
ANSC	3222	Dairy Calf Management
ANSC	2102	Dairy Cattle Reproduction and A.I. Techniques
AGPS	2114	Field and Forage Crops
AGPS	5003	IPM
HORT	2544	Woody Plants
AGPS	5102	Sustainable Vegetable Production Technology
AGRI	3351	Live Animal Evaluation

Business Electives:

BUAD	3043	Business Law
MKTG	3153	Web Design & Marketing
BUAD	4203	Intro to Personal Finance
CISY	3023	Advanced Spreadsheets
BUAD	3153	Fundamentals of Management

Also required - One unit of physical education.

GRADUATION REQUIREMENTS

Students must:

- successfully complete the prescribed sequence of courses
- achieve a minimum index of 2.0 in their core courses
- achieve a minimum index of 2.0 overall
- be recommended by the department faculty

AGRICULTURAL TECHNOLOGY

AAS Degree - Code #0510

Dr. Philip Schroeder, Program Coordinator
E-mail: schroepd@alfredstate.edu

The agricultural technology program provides students the flexibility to select elective courses to fit their career goals. Students can choose concentrations of courses in animal science or plant science.

• Animal science concentration - students can elect courses to enhance their knowledge in animal agriculture and/or dairy science.

• Plant science concentration - students can elect courses to enhance their knowledge in crops and plant sciences, including fruit and vegetable production.

The careers related to agriculture are diverse and constantly changingities for both conventional and organic farming practices will be offered on the College's production agriculture farms.

Animal/Dairy Science Concentration

The animal science concentration is a progressive practical program emphasizing dairy cattle management. The program offers both managerial and hands-on experiences. This concentration's courses provide a science and business background. A strong emphasis is placed on application of these principles, with our 65 cow tie-stall dairy herd of registered Holsteins.
The dairy complex features a milking parlor with integrated dairy cattle management software. The herd produces over 28,000 pounds of milk, more than 1,100 pounds of fat with a B.A.A. of more than 108.7 percent. The Alfred State College cows have the highest B.A.A. of any publicly owned herd in the nation. Alternative species, including horses, pigs, alpacas, poultry, and sheep are also housed at the College Farm for instructional purposes.

Plant/Crops/Fruit/Vegetable Concentration

This curriculum emphasizes the management of the soil to increase production of food crops for both human and livestock consumption. Students are usually interested in crop farming or market gardening careers. Students are taught conventional, natural, and organic food production systems. This concentration's courses provide a science and business background. A strong emphasis is placed on application of sustainability principles on our farm, research plots, gardens, hydroponic systems, greenhouses, and high tunnels.

SHOWMANSHIP DAY

All students enrolled in agriculture classes truly enjoy participating in the annual showmanship activities each spring. Students can select a species of animal (cattle, horses, swine, alpacas, or sheep) to train, groom, and show in this annual competition. Family, friends, and alumni are invited to enjoy the competition and the awards BBQ following the showmanship contest.

RELATED CLUBS AND ACTIVITIES

Students have the opportunity to participate in the Collegiate Agricultural Leaders (CAL) Club, Collegiate FFA, Equestrian Club, Dairy Judging Team, Agricultural Skills Day, Spring Fling Consignment Sale, Community-Supported Agriculture projects, local foods projects, showmanship contests, and Sustainability Club.

TRANSFER OPPORTUNITIES

Students in the curriculum also have an opportunity to transfer into the BBA technology management program at Alfred Sate College. Many schools, including Cornell University, grant full credit to students wishing to transfer to four-year programs. A formal articulation agreement exists between Alfred State College and Cornell University for transfer options.

COLLABORATIONS

- Wyoming County Dairy Institute (WDCI) Dairy Herdsmanship Training modules can be completed and applied toward college credit for the agricultural technology degree at Alfred State College.
- Scholarship money is available to students in the agricultural programs at Alfred State College.

OCCUPATIONAL OPPORTUNITIES

- Owners, Operators, Managers, and Herdsmen for Dairy Cattle and Meat Animal Farms
- Fruit, Vegetable, and Field Crop Production
- Food Industry
- Salespeople and Consultants for Feed, Fertilizer, Agricultural, and Veterinary Supply Companies
- Agricultural Banking and Lending
- Inspectors of Agricultural Products
- Laboratory and Field Technicians for Artificial Insemination and Veterinary Supply Companies
- Dairy Farm Inspectors

EMPLOYMENT STATISTICS

Employment and transfer rate of 75 percent –25 percent are employed; 50 percent transferred to continue their education.

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra (Math A)
Recommended: Geometry, Algebra 2/Trigonometry (Math B), Biology, Chemistry

EXPENSES

Textbooks are the primary expense with cost averaging $500 per year. Boots and coveralls are required for all farm-related activities.

AGRICULTURAL TECHNOLOGY - AAS Degree

ANIMAL SCIENCE CONCENTRATION TYPICAL FOUR-SEMESTER PROGRAM

First			
ANSC	1204	Introduction to Animal Science	4
AGRI	3351	Live Animal Evaluation	1
AGRI	1002	Introduction to Agriculture	2
AGPS	1103	Soils	3
	xxx3	English as advised	3
	xxx3	Gen. Education Elective (Math Recommended)	3
			16

Second			
BIOL	1304	Botany	4
ANSC	3203	Dairy Cattle Production I OR	
	xxxx	Animal Elective	3-4
ANSC	2114	Domestic Animal A & P	4
	xxxx	Agricultural Elective(s)	3
	xxx3	General Education Elective	3
			17-18

Third			
AGPS	2113	Field and Forage Crops	3
ANSC	3013	Animal Disease Control	3
AGEC	3213	Farm & Rural Management	3
	xxxx	Animal or Plant Agricultural Elective	3
	xxxx	General Education Elective	3
			15

Fourth			
AGEC	4303	Rural Business Finance	3
AGRI	4002	Seminar/Capstone Project	2
	xxx3	General Education Elective	3
	xxxx	Ag or Transfer-related Elective	3-4
	xxxx	Ag or Transfer-related Elective	2-4
			13-16

Suggested Agriculture or Transfer-related Electives:

ANSC	3202	Dairy Management Analysis
ANSC	3003	Feeds & Nutrition
ANSC	3223	Dairy Calf Management
ANSC	2102	Dairy Cattle Reproduction and A.I. Techniques
ANSC	3103	Livestock Management and Production
AGPS	5102	Sustainable Vegetable Production
AGPS	5003	IPM
AGRI	2012	Organic and Sustainable Agriculture
AGRI	6103	Precision Agriculture
BIOL	6534	Genetics
BIOL	5254	Principles of Microbiology
CHEM	1114	General Chemistry I
MATH	xxxx	

If full-time student, may cross register at AU for equestrian classes

Also required - One unit of physical education.

PLANT SCIENCE CONCENTRATION TYPICAL FOUR-SEMESTER PROGRAM

First			
ANSC	1204	Introduction to Animal Science	4
AGRI	1002	Introduction to Agriculture	2
AGPS	1103	Soils	3
	xxx3	English Elective as advised	3
	xxx3	General Education Elective (Math Recommended)	3
			15

Second			
BIOL	1304	Botany	4
AGRI	2012	Organic and Sustainable Agriculture	2
	xxx3	Agricultural Elective	3
	xxx3	General Education Elective	3
	xxx3	Business Elective	3
			15

Third			
AGPS	2113	Field and Forage Crops	3
XXXX	xxx3	Ag. Elective	3
AGEC	3203	Farm Management	3
AGPS	5102	Sustainable Vegetable Production	2
	xxx3	Agricultural Elective	3
	xxx3	General Education Elective	3
			17

Fourth			
AGEC	4303	Rural Business Finance	3
AGRI	4002	Seminar/Capstone Project	2
	xxxx	Ag or Transfer-related Elective	3-4
	xxxx	Ag or Transfer-related Elective	3-4
	xxx3	General Education Elective	3
			14-16

Suggested Agriculture or Transfer-related Electives:

AGPS	5003	IPM
AGRI	6103	Precision Agriculture
ANSC	2114	Domestic Animal A&P
ANSC	3202	Dairy Management Analysis
ANSC	3003	Feeds & Nutrition
ANSC	3223	Dairy Calf Management
ANSC	2102	Dairy Cattle Reproduction and A.I. Techniques
BIOL	6534	Genetics
BIOL	5254	Principles of Microbiology
CHEM	1114	General Chemistry I
MATH	xxxx	

Also required - One unit of physical education.

GRADUATION REQUIREMENTS

Students must:

- successfully complete the prescribed sequence of courses
- achieve a minimum index of 2.0 in core courses
- achieve a minimum index of 2.0 overall
- be recommended by the department faculty

AIR CONDITIONING & HEATING TECHNOLOGY

AOS Degree - Code #0464

George Richardson, Program Coordinator
E-mail: richargh@alfredstate.edu

The heating and air conditioning courses deal with all phases of residential and commercial installation, maintenance, troubleshooting, and repair. It includes forced air, hot water and steam heating, gas and oil burner systems, along with hands-on air conditioning and heat pump technology.

The plumbing aspect of the program provides instruction in the basic skills required by the plumber in the construction of residential housing and commercial buildings. The program ranges from the installation of waste and sewage lines to the installation of potable water lines and plumbing fixtures.

The program provides the necessary theory connected with plumbing and HVAC, as well as on-the-job training experience overseen by tradesmen.

Students will take the National Refrigerant Handling Certification Course and Test and the National ARI HVAC (Air Conditioning & Refrigeration Institute Heating Ventilation & Air Conditioning) Competency Test.

OCCUPATIONAL OPPORTUNITIES

- Maintenance Personnel or Supervisor
- Sheet Metal Fabricator
- Sales Representative
- Pipe Fitter
- Sprinkler Installer
- HVAC Mechanic or Troubleshooter
- Water or Sewer Plant Operator
- Private Contractor

Upon successful completion of the program, students may also continue in Alfred State's BBA program in technology management.

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 90 percent are employed; 10 percent transferred to continue their education.

RELATED PROGRAMS

Building Trades: Building Construction
Masonry

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Applicants in the air conditioning and heating technology program must meet the following physical requirements:

- Must be able to lift 50 pounds to shoulder height.
- Must be able to perform safely in the laboratory.
- Must be able to communicate orally with a person 20 feet away.
- Must be able to climb a ladder.
- Must be able to stand for long periods of time.
- Must be able to visually read from a blueprint or drawing.
- Must be able to hear a backup warning alarm.

Recommended: Algebra (Math A)

AIR CONDITIONING & HEATING TECHNOLOGY - AOS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
BLCT	3413	Blueprint Reading - Building Construction	3
BLCT	3423	Pipe Fitting - Math Estimating	3
BLCT	3433	Copper Pipe & Tubing, Water System Design & Installation	3
BLCT	3443	Copper Pipe & Tubing, Water System Design & Installation	3
BLCT	3453	Plumbing Trades Safety, History and Drain Piping	3
BLCT	3463	Water Heaters & Public & Private Portable Water Systems	3
			18
Second			
BLCT	4143	Basic House Wiring - Forced Air Heating Comfort Conditions	3
BLCT	4153	Sheet Metal Fabrication	3
BLCT	4163	Mid & High Efficiency Furnaces - Alternate Warm Air Heat Sources	3
BLCT	4173	Sheet Metal Air Distribution Systems and Venting	3
BLCT	4183	Sheet Metal Trade Safety - Drawing for Sheet Metal Layout	3
BLCT	3473	Heating Fuels - Combustion Theory & Troubleshooting	3
			18
Third			
BLCT	3483	Electrical Fundamentals	3
BLCT	3493	Forced Air Furnace Controls	3
BLCT	3503	Hydronic Components, Circulating Pumps & Heat Sources	3
BLCT	3513	Hydronic Controls & Motors	3
BLCT	3523	Hydronic Fundamentals & Hydronic Heat Sources	3
BLCT	3533	Hydronic Piping Systems, Radiant Floor Heating & Steam Heating	3
			18
Fourth			
BLCT	4203	Air Conditioning Components & Installation	3
BLCT	4213	AC Fundamentals	3
BLCT	4223	Air Conditioning Performance & Troubleshooting and Heat Pumps	3
BLCT	4233	Heat Loss and Heat Gain	3
BLCT	4243	Refrigeration Handling Certification	3
BLCT	4253	Residential Duct System Design	3
			18

GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a “C” average.

ARCHITECTURAL ENGINEERING TECHNOLOGY

AAS Degree - Code #0443

The architectural engineering technology program offers a concentration of courses in architectural design and graphic communication as well as material in related areas such as structures, mechanical systems, professional practice, and construction technology.

It is the intent of the program to expose students to a broad range of skills and basic data relevant to the building process. This broad exposure gives students the ability to be conversant with and/or seek employment with all related professions within the architectural field. Students are required during the two years of study to apply the skills or background knowledge gained in these "exposure" courses to actual problem-solving situations. This application develops a better understanding of the complexity, interrelationships, and proper sequence of the process of building.

As a response to the impact of computers on all areas of the architecture profession, a series of computer courses has been developed which introduces the student to a variety of 2D & 3D building information modeling and animation applications.

The program places graduates as technicians in the architecture professions. However, each year some students transfer into baccalaureate or professional degree programs in architecture and related fields.

This program is accredited by the Technology Accreditation Commission, Accreditation Board for Engineering Technology, Inc. (TAC/ABET), 111 Market Place – Suite 1050, Baltimore, MD 21202; (410) 347-7700.

A laptop computer is required for students entering the architectural engineering technology program. Laptop specifications are available at www.alfredstate.edu/required-laptops.

Program Educational Objectives

Program educational objectives were established with the assistance of the Advisory Board and are reviewed periodically. The architectural engineering technology program produces graduates who will be able to:

- demonstrate a mastery of the knowledge, techniques, skills, and modern tools of architectural practice;
- apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology related to the built environment;
- define, analyze, and respond to architectural problems and evaluate results using graphic thinking to improve design processes;
- show creativity in the design and integration of building systems and components through three-dimensional exploration and visualization techniques;
- demonstrate the ability to function effectively in team situations;
- identify, analyze, and solve technical problems related to building design and site development;
- demonstrate the ability to communicate effectively in oral, written, and graphic form;
- understand professional, ethical, legal, and social responsibilities related to architectural practice;
- show respect for diversity and a knowledge of human behavior related to contemporary professional, societal, and global issues;
- recognize the need for and be able to engage in lifelong learning and self-evaluation;
- demonstrate a commitment to quality, timeliness, and continuous improvement.

TRANSFER OPPORTUNITIES

Graduates may go directly into the work force or transfer to professional or pre-professional degree programs at Alfred State or other institutions. Transfer is contingent on program and institution. Graduates have transferred to various schools of architecture and engineering in the United States. Please note that a minimum combined GPA of 3.0 is required in Alfred State College studio courses (CIAT 1184, CIAT 2394, CIAT 3104, and CIAT 4304) to guarantee admission into CIAT 5306 - Design Studio 3. A portfolio review is required of all continuing students not meeting this requirement.

OCCUPATIONAL OPPORTUNITIES

- Architect (after successfully meeting state requirements)
- Computer Modelers
- Inspectors
- Interior Designers
- Sales Representatives
- Computer Animators
- Detailers
- Specifications Writers
- Estimators
- Shop Drawing Drafters

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 9 percent are employed; 91 percent transferred to continue their education.

RELATED PROGRAM

Construction Engineering Technology

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)
Recommended: Physics

ARCHITECTURAL ENGINEERING TECHNOLOGY - AAS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
COMP	1503	Freshman Composition	3
CIAT	1023	Construction Technology 1	3
MATH	1033	College Algebra	3
CIAT	1184	Design Fundamentals 1*	4
FNAT	1303	Architectural History I	3
			16

Second			
LITR	2603	Introduction to Literature	3
PHYS	1024	General Physics I	4
MATH	2043	College Trigonometry	3
CIAT	2394	Design Fundamentals 2*	4
CIAT	2123	Environmental Controls 1	3
			17

Third			
CIAT	2201	Arch Computer Graphics Applic	1
MATH	1063	Technical Calculus I	3
PHYS	2023	General Physics II	3
CIAT	3104	Design Studio 1*	4
CIAT	3304	Construction Technology 2	4
SOCI	1163	General Sociology **	3
			18

Fourth			
SPCH	1083	Effective Speaking	3
CIAT	4003	Professional Practice 1	3
CIAT	4403	Computer Visualization	3
CIVL	4104	Structural Design	4
CIAT	4304	Design Studio 2*	4
			17

General Notes:
Students must complete at least one course from each of five SUNY General Education Silos.

Entry level of student into math and composition/literature sequences is a function of student's high school preparation and mathematics and English placement examinations.

Math through technical calculus I must be completed. Students who start at a higher level in math must meet all SUNY general education and campus liberal arts and sciences course credit requirements for graduation.

Minimum of "C" is required for CIAT 1184, CIAT 2394, CIAT 3104, and CIAT 4304.

* Minimum combined GPA of 3.0 is required in Alfred State College studio courses (CIAT 1184, CIAT 2394, CIAT 3104, and CIAT 4304) to guarantee admission into CIAT 5306 - Studio 3. A portfolio review is required of all continuing students not meeting this requirement.

** May substitute HIST 1113, HIST 1143, HIST 2153, or PLSC 1043. Students planning to continue in the BS - architectural technology program should consult with their adviser regarding Gen. Ed/LAS requirements.

Also required: One unit of physical education.

ARCHITECTURAL TECHNOLOGY

BS Degree - Code #1452

This program is designed to provide graduates with a comprehensive architectural education combining an understanding of the philosophy of building design with an applied technical knowledge of construction systems and materials acquired in a technically oriented studio structure. A variety of graphic tools and techniques is explored in the studios including freehand drawing, physical models, 2D and 3D building information modeling, and animation applications. Software such as Adobe Photoshop, AutoCAD, and Revit are used throughout the program. Students are exposed to a wide range of software programs, graphic communication techniques, and problem-solving skills.

The program will place graduates in the architectural profession as advanced technicians and intern architects.

A laptop computer is required for students entering the architectural technology program. Laptop specifications are available at www.alfredstate.edu/required-laptops.

TRANSFER OPPORTUNITIES

Graduates wishing to continue their education may choose to apply to a master of architecture or related program. Length of program is contingent upon program and institutional requirements.

OCCUPATIONAL OPPORTUNITIES

- Architect (after successfully meeting state requirements)
- Model Builders
- Inspectors
- 3D Modelers and Animators
- Computer Illustrators
- Detailers
- Specifications Writers
- Estimators

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 64 percent are employed; 36 percent transferred to continue their education.

RELATED PROGRAM

Construction Management Engineering Technology (BS)

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B), SAT and/or ACT scores with a recommended combined SAT score of 1000 (critical reading and math) or a composite ACT score of 21.

Minimum combined GPA of 3.0 is required in Alfred State College studio courses (CIAT 1184, CIAT 2394, CIAT 3104, and CIAT 4304) or comparable courses at another institution to guarantee admission into CIAT 5306-Studio 3. A portfolio review is required of all continuing students or transfer students not meeting this requirement.

Recommended: Pre-calculus, Physics

TRANSFER STUDENTS

All transfer students applying for entrance into the BS program must submit a portfolio.

Portfolio must include six (6) to eight (8) examples of the student's best work. Examples should be copies (not originals) of design work including any work in the two- or three-dimensional visual arts done in academic settings, practice, or as personal work. All work must include the name of applicant, date of work, and an indication of whether the work was an academic, professional, or personal project. If the item is part of a group effort, the specific role of the applicant should be included.

All portfolio material must be bound. Portfolio overall size must not be more than 10" x 12" (25 cm x 30 cm) and 1" (2.5 cm) thick. The applicant's name must be clearly visible on the binding. The use of slides is discouraged.

The portfolio should be submitted by mail in a padded envelope to:

Admissions Office
Alfred State College
10 Upper College Drive
Alfred, NY 14802

The department will keep portfolio materials unless a prepaid, self-addressed return envelope is mailed with the applicant's portfolio. Portfolios held by the department will be discarded if not retrieved by the applicant in one semester.

GRADUATION REQUIREMENTS

Successfully complete all courses in the prescribed eight-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

As part of the graduation requirements for the bachelor of science degree in architectural technology, students must complete a portfolio according to the following guidelines:

- The portfolio must contain a minimum of six (6) examples of creative academic work. These examples should demonstrate achievements as a designer. A minimum of two (2) examples must be from studio class projects in the last two years of the program. A maximum of two (2) examples may be of non-graphic work (example – written work).
- Examples submitted should be good quality copies of original work, not originals.
- Each example will be accompanied by a short description of the project and solution, and include the name of the class the project was produced for. If the item is part of a group effort, the specific role of the student should be included.
- Completed portfolios must be submitted digitally in Patable Document Format (PDF) on a CD or as directed by the department chair.
- Portfolios will be evaluated to determine whether they should be graded as "High Pass," "Pass," or "Fail." This assessment will appear on the student's permanent Alfred State College transcript.
- The completed portfolio must be submitted to the Computer Imaging and Architectural Engineering Technology Office by April 1. This is an absolute deadline; no portfolios will be accepted after the April 1 deadline. Evaluation will be done on a yearly basis by a team of three faculty reviewers. All decisions are final.

Evaluation Criteria

Work in student portfolios should demonstrate:

- Understanding of the philosophy of building design and problem solving skills, through original and thorough design thinking;
- Ability to legibly communicate design ideas in graphic and written form;
- A working knowledge of a variety of construction systems and materials and how they affect building design;
- Competence in the use of graphic tools and techniques including freehand drawing, computer-aided drafting, physical models, and computer imaging.

ARCHITECTURAL TECHNOLOGY - BS Degree

TYPICAL EIGHT-SEMESTER PROGRAM

First			
COMP	1503	Freshman Composition	3
CIAT	1023	Construction Technology 1	3
MATH	1033	College Algebra	3
CIAT	1184	Design Fundamentals 1	4
FNAT	1303	Architectural History I	3
			16

Second			
LITR	2603	Introduction to Literature	3
PHYS	1024	General Physics I	4
MATH	2043	College Trigonometry	3
CIAT	2394	Design Fundamentals 2	4
CIAT	2123	Environmental Controls 1	3
			17

Third			
CIAT	2201	Arch Computer Graphics Appl	1
SOCI	1163	General Sociology	3
PHYS	2023	General Physics II	3
CIAT	3104	Design Studio 1	4
CIAT	3304	Construction Technology 2	4
MATH	1063	Technical Calculus I	3
			18

Fourth			
SPCH	1083	Effective Speaking	3
CIAT	4403	Computer Visualization	3
CIVL	4104	Structural Design	4
CIAT	4304	Design Studio 2	4
PSYC	1013	General Psychology	3
			17

General Notes:

Entry level of student into math and composition/literature sequences is a function of student's high school preparation and mathematics and English placement examinations.

Math through technical calculus I must be completed. Students who start at a higher level of math must meet SUNY general education and campus liberal arts and sciences course credit requirements for graduation.

Minimum combined GPA of 3.0 is required in Alfred State College studio courses (CIAT 1184, CIAT 2394, CIAT 3104, and CIAT 4304) or comparable courses at another institution to guarantee admission into CIAT 5306 - Design Studio 3. A portfolio review is required of all continuing or transfer students not meeting this requirement.

ARCHITECTURAL TECHNOLOGY

Fifth			
SOCI	5213	Science, Technology, & Society	3
CIAT	5306	Design Studio 3*	6
FNAT	5303	Architectural History II	3
	xxx3	Gen Education Elective/Western Civilization OR Foreign Language	3
			15

Sixth			
	xxx3	Gen Education/LAS Elective	3
	xxx3	Gen Education/LAS Elective	3
CIAT	6306	Design Studio 4*	6
CIAT	5503	Sustainable Building Design	3
			15

Seventh			
COMP	5703	Technical Writing II	3
MATH	7113	Economic Analysis	3
CIAT	7306	Design Studio 5	6
	xxx3	Gen Ed Elective/American History OR Other World Civilization	3
CIAT	7001	Studio Thesis Research	1
			16

Eighth			
	xxx3	Gen Ed/LAS elective (Upper Level)	3
CIAT	8306	Design Studio 6	6
CIVL	5213	Foundation & Concrete Construction	3
CIAT	8003	Professional Practice 2	3
			15

General Notes:

Students must complete at least one course from 7 of the 10 SUNY General Education Silos.

Minimum of “C” is required for CIAT 1184, CIAT 2394, CIAT 3104, CIAT 4304, CIAT 5306, CIAT 6306, CIAT 7306 and CIAT 8306.

Also required: One unit of physical education.

AUTOBODY REPAIR

AOS Degree – Code #0453

This specialization includes 1,800 hours of practical experience and classroom training applicable to the autobody repair field. Laboratory experience ranges from spot repair, total wreck repair, specialized paint jobs, estimating, and rust repair to frame straightening.

OCCUPATIONAL OPPORTUNITIES

- Auto Body Repair Specialist
- Automotive Refinisher
- Body Shop Owner
- Frame Straightening Specialist
- Shop Foreman
- Service Manager
- Wheel Alignment Specialist

Upon successful completion of this program, students may also continue in Alfred State's BBA program in technology management.

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 82 percent are employed; 18 percent transferred to continue their education.

RELATED PROGRAMS

- Automotive Parts Technology
- Automotive Service Technician
- Heavy Equipment: Truck & Diesel Technician
- Mechanical Engineering Technology
- Motorsports Technology
- Welding Technology

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Applicants in the autobody repair program must meet the following physical requirements:

- Must be able to follow all safety standards in each shop.
- Must be able to lift 50 pounds to eye level without assistance.
- Must be able to communicate orally with a person six-10 feet away.
- Must be able to diagnose mechanical failures that are distinguished audibly.
- Must be able to visually read information retrieved from our informational sources, computers, and manuals.
- Must have a valid driver's license.

Recommended: Algebra (Math A)

CERTIFICATION OR LICENSURE

Graduates may take Automotive Service Excellence (ASE) certification exams. Graduates are also eligible for New York State inspection certification. Students may take the ASE exam for certification in refrigerant recycling & recovery during their senior year.

AUTOBODY REPAIR - AOS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
AUTO	1326	Body Welding	6
AUTO	1313	Wrecker Operation & Estimating	3
AUTO	1306	Rust Repair	6
AUTO	1343	Refinishing Basics	3
			18
Second			
AUTO	2309	Brakes, Suspension & Structural Analysis	9
AUTO	1344	Reconditioning & Mechanical Components	4
AUTO	2365	Chassis Electrical	5
			18
Third			
AUTO	3819	Auto Body Skills/Computerized Estimating	9
AUTO	3809	Inspection, Gen Alignment, Air Conditioning, Cooling and Heating	9
			18
Fourth			
AUTO	4639	Major Collision Repair	9
AUTO	4629	Major Refinishing	9
			18

Students successfully completing autobody repair may wish to remain at Alfred in the automotive service technician, heavy equipment: truck & diesel technician, or motorsports programs another one-and-one-half years to receive a second degree upon successful completion of course. This requires department chair's approval.

GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

AUTOMOTIVE PARTS TECHNOLOGY

AAS Degree - Code #1929 ☐

The automotive parts technology program is a two-year AAS program that compliments the automotive trades program. The goal of this program is to supply the automotive aftermarket with qualified employees. The automotive parts technology program will develop in students the necessary skills to succeed in the broad area of the automotive aftermarket supply network.

Instruction will include basic computer operations, customer service skills, communication skills, automotive parts store management, inventory control management, pricing strategy management, management of store layout and design.

An automotive parts store is located on the Wellsville campus where student participate in live store operations.

OCCUPATIONAL OPPORTUNITIES

- Automotive Parts Manager
- Parts Inventory Manager
- Inventory Control Specialist
- Sales Managers
- Product Category Managers
- Operations/Logistic Specialists
- Area Managers
- Division Managers
- Buyers
- Customer Service Representatives

Upon successful completion of this program, students will be eligible to continue into Alfred State's bachelor degree (BBA) program in technology management.

CERTIFICATIONS

Graduates may take the Automotive Service Excellence (ASE) certification exam in Parts Specialist and/or Medium and Heavy Duty Truck Dealership Parts Specialist.

RELATED PROGRAMS

☐ Automotive Service Technician
☐ Heavy Equipment: Truck & Diesel Technician
☐ Motorsports Technology

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Applicants in the automotive parts technology program must meet the following physical requirements:

- Must be able to follow all safety standards in each shop.
- Must be able to lift 50 pounds to eye level without assistance.
- Must be able to communicate orally with a person six-10 feet away.
- Must be able to diagnose mechanical failures that are distinguished audibly.
- Must be able to visually read information retrieved from our informational sources, computers, and manuals.
- Must have a valid driver's license.

Recommended: Algebra (Math A)

AUTOMOTIVE PARTS TECHNOLOGY - AAS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
AUTO	1003	Intro to Parts Management	3
AUTO	1013	Parts Familiarization I	3
COMP	1503	Freshman Composition	3
BUAD	3153	Fundamentals of Management	3
MKTG	2073	Principles of Marketing	3
			15

Second			
AUTO	2003	Parts Familiarization II	3
AUTO	2013	E-Catalog and Pricing	3
CISY	1023	Intro to Information Tech	3
MATH	1033	College Algebra	3
MATH	xxx3	Math Elective	3
PSYC	1013	General Psychology	3
			18

Third			
AUTO	3003	Auto Body & Related Parts	3
AUTO	3013	Parts Management	3
AUTO	3023	Computer Appl Parts Mgt	3
BUAD	2033	Business Communications	3
LITR	2603	Introduction to Literature	3
MATH	1123	Statistics I	3
			18

Fourth			
AUTO	4013	Parts Inventory Control	3
AUTO	4023	Mftg Catalog & Pricing	3
AUTO	4033	Parts Mgr Position	3
HIST	xxx3	American History Elective	3
MKTG	1063	Principles of Sales	3
SPCH	1083	Effective Speaking	3
			18

Also required: One unit of physical education.

GRADUATION REQUIREMENTS

Students must:

- successfully complete the prescribed sequence of courses
- achieve a minimum index of 2.0 in their core courses
- achieve a minimum index of 2.0 overall
- be recommended by the department faculty

AUTOMOTIVE SERVICE TECHNICIAN

AOS Degree – Code #0451 ☐

This specialization includes 1,800 hours of practical and classroom training in general automotive repair geared to automotive dealership and independent garage practice. Students receive experience on all types of automobiles, including domestic, imported, gasoline, diesel, and alternative fuels. All systems of the automobile are covered in the instruction including the latest gasoline fuel injection, electronic controls, emission controls, and automatic transmission overhaul.

OCCUPATIONAL OPPORTUNITIES

- Automatic Transmission Technician
- Automotive Technician Specialist
- Automotive Diagnostic Specialist
- Brake Specialist
- Drivability Specialist
- Fuel System Specialist
- Independent Repair Shop Owner
- Manufacturer's Service Representative
- Marine Engine Service Specialist
- Service Manager
- Service Salesperson
- Shop Foreman
- Wheel Alignment Specialist

Upon successful completion of this program, students may also continue in Alfred State's BBA program in technology management.

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 53 percent are employed; 47 percent transferred to continue their education.

RELATED PROGRAMS

- ☐ Automotive Parts Technology
- ☐ Autobody Repair
- ☐ Heavy Equipment: Truck & Diesel Technician
- ☐ Mechanical Engineering Technology
- ☐ Motorsports Technology
- ☐ Welding

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Applicants in the automotive service technician program must meet the following physical requirements:

- Must be able to follow all safety standards in each shop.
- Must be able to lift 50 pounds to eye level without assistance.
- Must be able to communicate orally with a person six-10 feet away.
- Must be able to diagnose mechanical failures that are distinguished audibly.
- Must be able to visually read information retrieved from our informational sources, computers, and manuals.
- Must have a valid driver's license.

Recommended: Algebra (Math A)

CERTIFICATION OR LICENSURE

Graduates may take Automotive Service Excellence (ASE) certification exams. Students are eligible for New York State inspection certification upon successful completion of their freshman year.

AUTOMOTIVE SERVICE TECHNICIAN - AOS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
AUTO	1109	Brakes, Steering, and Suspension Systems	9
AUTO	1124	Automotive Welding	4
AUTO	1135	Automotive Basic Electronics & Component Overhaul	5
			18
Second			
AUTO	1169	Tune up, Electronic Engine Controls & Electrical Diagnosis	9
AUTO	1149	Inspection, Maintenance, Air Conditioning & Cooling and Heating	9
			18
Third			
AUTO	3409	Engine Service	9
AUTO	4449	Drive Train Service	9
			18
Fourth			
AUTO	3429	Advanced Electronics & Engine Performance	9
AUTO	4439	Shop Management and Enhanced Systems	9
			18

Continuing Students: Students successfully completing the general automotive service technician program receive first priority for space if they wish a third year (senior year) in heavy equipment: truck & diesel technician or motorsports technology. They may be admitted to autobody repair with the department chair's approval.

GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

BIOLOGICAL SCIENCE

AAS Degree – Code #1554 ☐

Mark Amman, Program Coordinator
E-mail address: AmmanMJ@alfredstate.edu

The biological science program prepares graduates to function in various scientific laboratories or to continue their education in a number of science or pre-professional fields. The program provides a foundation in biology, chemistry, and mathematics as well as a common core of general studies in English and social sciences. Biological science is a flexible program that can be tailored to fit the educational requirements of a variety of laboratory-related occupations.

TRANSFER OPPORTUNITIES

The program also enables graduates to transfer to four-year programs in biology and chemistry as well as programs such as sports medicine, forensic science, nuclear medicine, medical technology, ultrasound technology, and pre-professional programs (medicine, veterinary, dentistry, and pharmacy). Students may also continue their education in Alfred State's BS program in forensic science technology.

OCCUPATIONAL OPPORTUNITIES

- Law Enforcement Laboratories
- Environmental Monitoring
- Pharmaceutical Testing
- Wastewater Treatment

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 100 percent transferred to continue their education.

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B), Biology, Chemistry

TECHNICAL STANDARDS:

Students must possess fine motor skills which allow them to focus a microscope with fine adjustment and use forceps.

FACILITIES

The program is located in the Agriculture Science Building with six laboratories and a greenhouse. Students have access to a myriad of technologies and instrumentation. Explore the adjacent alphabet soup list:

UV-VIS	Ultraviolet - Visible Spectrophotometry
FTIR	Fourier Transform Infrared Spectrophotometry
AAS	Atomic Absorption Spectrophotometry
NMR	Nuclear Magnetic Resonance
FS	Fluorescence Spectrophotometry
GC-MS	Gas Chromatography/Mass Spectroscopy
HPLC	High Performance Liquid Chromatography
CE	Capillary Electrophoresis
PCR	Polymerase Chain Reaction

BIOLOGICAL SCIENCE - AAS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First

BIOL	1104	General Biology I	4
CHEM	1114	General Chemistry OR	
CHEM	1984	Chemistry Principles I *	4
COMP	1503	Freshman Composition	3
BIOL	1101	Topics in General Biology	1
MATH	xxxx	Math Elective (MATH 1033 or greater)	3-4
			15-16

Second

BIOL	2204	General Biology II	4
LITR	2603	Introduction to Literature	3
CHEM	2124	General Chemistry II OR	
CHEM	2984	Chemistry Principles II *	4
	xxxx	Technical Elective	2-4
	xxx3	Social Science Elective	3
			16-18

Third

BIOL	5254	Principles of Microbiology	4
CHEM	3514	Organic Chemistry I	4
	xxxx	Technical Elective	2-4
MATH	xxxx	Math Elective	3-4
HIST	xxx3	History Elective	3
			16-19

Fourth

BIOL	6534	Genetics	4
CHEM	4524	Organic Chemistry II	4
BIOL	2111	Biology Seminar	1
		Technical Elective(s)	2-4
		Open Elective	3-4
			14-17

Technical Electives:

AGPS	1103	Soils
AGRI	2012	Organic & Sustainable Agriculture Tech.
HORT	2544	Woody Plants
BIOL	1304	Botany
BIOL	1404	Anatomy & Physiology I
BIOL	2504	Anatomy & Physiology II
BIOL	2633	Histotechniques
BIOL	2803	Environmental Science
BIOL	2801	Environmental Science Lab
BIOL	4403	Pathophysiology (online)
BIOL	5223	Genetic Engineering
CHEM	6614	Instrumental Analysis
CISY	1003	Intro to Microcomputer Appl
	or	
CISY	3023	Adv Computer Spreadsheets
COMP	3703	Technical Writing
HORT	4403	Plant Pathology
PHYS	1044	College Physics I
PHYS	2044	College Physics II

SPCH	1083	Effective Speaking
MATH	1084	Calculus I (if not used as a technical elective)
MEDR	1132	Essentials of Pharmacology (online)

Other under advisement

MATH courses must be at the level of MATH 1033 college algebra or above.

Also required: One unit of physical education.

*preferred for transfer

GRADUATION REQUIREMENTS

A minimum of 63 credit hours is required for graduation, with an overall cumulative index of 2.0. A grade of "C" or better is required in the core science courses (those which have BIOL or CHEM prefixes).

BUILDING TRADES: BUILDING CONSTRUCTION

AOS Degree – Code #0420

George Richardson, Program Coordinator
E-mail address: richargh@alfredstate.edu

The building construction program provides instruction in the basic skills required of the carpenter and the mason in the construction of residential or other light-frame and masonry buildings. Extensive experience is gained in building layout, foundations, framing, sheathing, exterior and interior trim, block work, brick, and concrete construction.

Coupled with this experience, the program provides the necessary theory connected with carpentry and masonry operations as well as blueprint reading, cost and materials estimating, surveying for building layout and control, and safety on the job.

A large part of the program is actual on-the-job training under the supervision of qualified instructors. Frequently, concrete and lumber companies instruct students in the uses of their products.

OCCUPATIONAL OPPORTUNITIES

- Manufacturers
- Cabinetmaker
- Sales
- Shop Foreman
- Installer (Cabinets, etc.)
- Dealers
- Maintenance Supervisor
- Carpenter
- Contractor
- Self-Employment
- Expediter
- Construction Superintendent
- Construction Foreman
- Mason
- Estimator

Upon successful completion of this program, students may also continue in Alfred State's BBA program in technology management.

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 89 percent are employed; 11 percent transferred to continue their education.

RELATED PROGRAMS

- Air Conditioning and Heating Technology
- Architectural Engineering Technology
- Construction Engineering Technology
- Electrical Construction and Maintenance Electrician
- Masonry
- Surveying Engineering Technology

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Applicants in the building trades: building construction program must be able to meet the following physical requirements:

- Must be able to lift 50 pounds to shoulder height.
- Must be able to perform safely in the laboratory.
- Must be able to communicate orally with a person 20 feet away.
- Must be able to climb a ladder.
- Must be able to stand for long periods of time.
- Must be able to visually read from a blueprint or drawing.
- Must be able to hear a backup warning alarm.

Recommended: Algebra (Math A)

BUILDING TRADES: BUILDING CONSTRUCTION - AOS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
BLCT	1021	College & Life Skills	1
BLCT	1023	Construction Essentials I	3
BLCT	1034	Work Place Environment & Safety	4
BLCT	1022	Wood Fabrication Tech I	2
BLCT	1132	Estimating I	2
BLCT	1142	Masonry I	2
BLCT	1024	Construction Essentials II	4
			18

Second			
BLCT	2044	Construction Essentials III	4
BLCT	2054	Construction Essentials IV	4
BLCT	2064	Structural Components	4
BLCT	2032	Wood Fabrication Tech II	2
BLCT	2132	Estimating II	2
BLCT	2142	Masonry II	2
			18

Third			
BLCT	3223	Home Remodeling	3
BLCT	3313	Basic CAD for Residential Drawings	3
BLCT	3123	Construction Drawings & Specs	3
BLCT	3213	Exterior Construction Details	3
BLCT	3323	Interior Trim	3
BLCT	3233	Advanced Framing	3
			18

Fourth			
BLCT	3203	Estimating III	3
BLCT	4212	Construction Safety	2
BLCT	4303	Interior Surfaces	3
BLCT	4312	Introduction to Residential Jobsite Management	2
BLCT	4042	Construction Business Operation	2
BLCT	4023	Form Building	3
BLCT	3033	Cabinet & Counter Top Construction	3
			18

Building Trades – Historic Preservation Electives

BLCT	2094	Window and Door Restoration	4
BLCT	2084	Mechanics of Decay and Deterioration in Wood	4
BLCT	2074	Historic Roofing Materials	4
BLCT	4104	Comparison of Framing Techniques	4
BLCT	4900	Directed Study - Historic Preservation	2

GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a “C” average.

BUSINESS ADMINISTRATION

BBA Degree – Code #0280

Dr. Karla M. Back, Program Coordinator
E-mail address: backkm@alfredstate.edu

The BBA degree in business administration is designed to allow a student to enter as a freshman or transfer into the program after two years of study in an associate degree business program. Students receiving their AAS or AS business degree will be able to transfer into this program and receive the BBA degree in a minimum of four more semesters.

The BBA in business administration is designed to provide graduates with the management, administrative, and technical business skills needed to succeed in positions of leadership and responsibility in business and industry as well as governmental and not-for-profit organizations, and graduate study.

As a college of technology, Alfred State's mission is to prepare people to succeed in technical careers. An emphasis is placed on lifelong learning as an essential skill for any graduate due to the rapid pace of technological advancement and an increasingly global society. The business administration program reflects both concepts very well by developing graduates with managerial and technical skills and the ability to stay abreast in the dynamic field of business in today's economy.

A laptop computer is required for students entering this degree program. Laptop specifications are available at www.alfredstate.edu/required-laptops.

OCCUPATIONAL OPPORTUNITIES

- Administrative Services Manager
- Business Managers of Artists/Athletes
- Business Operations Specialist
- Financial Analysts/Managers/Specialists
- General and Operations Managers
- Human Resource Specialist
- Loan Counselors/Officers
- Management Analysts
- Marketing Managers
- Sales Managers

RELATED PROGRAMS

- Accounting
- Business Management (Career)
- Business Administration (Transfer)
- Entrepreneurship
- Financial Services
- Financial Planning (BBA)
- Marketing
- Sport Management (BBA)
- Technology Management (BBA)

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B), SAT and/or ACT scores with a recommended combined SAT score of 1000 (critical reading and math) or a composite ACT score of 21

Business Administration - BBA Degree

TYPICAL EIGHT-SEMESTER PROGRAM

First			
ACCT	1124	Financial Accounting	4
CISY	1103	Information Technology Mgt.	3
MKTG	2073	Principles of Marketing	3
MATH	1123	Statistics I OR Statistical Methods	3
COMP	1503	Freshman Composition	3
HPED	xxx1	Physical Education Elective	1
			17
Second			
ACCT	2224	Managerial Accounting	4
ECON	1013	Macroeconomics	3
	xxx3	Humanities Gen Ed Elective	3
MATH	xxx3	Math Elective	3
	xxx3	Free Elective	3
			16
Third			
BUAD	3153	Fundamentals of Management	3
ECON	2023	Microeconomics	3
SPCH	1083	Effective Speaking	3
BUAD	4203	Personal Financial Planning	3
	xxx3	Free Elective	3
			15
Fourth			
BUAD	2033	Business Communications	3
	xxx3	General Education Elective	3
	xxx3	General Education Elective	3
	xxx3	General Education Elective	3
	xxx3	Business Elective	3
			15
Fifth			
BUAD	3043	Business Law I	3
BUAD	5003	Management Communications	3
BUAD	6003	Managerial Finance	3
TMGT	5001	Professional Business Seminar	1
	xxx3	Business Elective	3
	xxx3	Gen Ed OR Business Elective	3
			16
Sixth			
BUAD	7273	Organizational Behavior	3
BUAD	5013	Principles of Leadership	3
BUAD	6113	Strategic & Creative Problem Solving	3
BUAD	5023	Human Resource Management	3
	xxx3	Business Elective	3
			15

Seventh			
BUAD	7023	Legal Environment of Business	3
BUAD	7033	Operations Management	3
	xxx3	Business Elective - Upper	3
	xxx3	Business Elective - Upper	3
	xxx3	Gen Ed OR Business Elective	3
			15

Eighth			
BUAD	8003	Management Information Systems	3
BUAD	8013	International Business	3
BUAD	5043	Business Ethics	3
BUAD	8023	Strategic Management	3
BUAD	xxx3	Business Elective - Upper	3
			15

GRADUATION REQUIREMENTS

- 123 credit hours, including one credit hour of physical education
- 30 credit hours of the 45 upper-level credit hours for this degree must be taken at Alfred State College.
- Cumulative overall index of at least 2.0

BUSINESS ADMINISTRATION

AS Degree – Code #0671 ☐

Francine Staba, Program Coordinator
E-mail address: stabafm@alfredstate.edu

The business administration (transfer) program primarily prepares students to continue their formal education in the business field in a four-year program. The program combines the foundations necessary for business administration with equal emphasis on university parallel courses in liberal arts and sciences.

A laptop computer is recommended, but not required, for students entering the business administration (transfer) program. The College will provide a list of appropriate laptops and wireless modem cards to all students who have been accepted to attend Alfred State College.

TRANSFER OPPORTUNITIES

Students may transfer directly into one of our own BBA degree programs or to another college. Although not limited to these schools, common transfer institutions include: Alfred University, St. Bonaventure University, Rochester Institute of Technology, St. John Fisher College, SUNY at Albany, University at Buffalo, SUNY College at Brockport, SUNY College at Fredonia, SUNY College at Geneseo, SUNY College at Oneonta, SUNY College at Oswego, SUNY at Binghamton, Cornell University, Canisius College, Niagara University, and Hilbert College.

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent - 100 percent transferred to continue their education.

RELATED PROGRAMS

- ☐ Accounting
- ☐ Business Administration (BBA)
- ☐ Financial Planning (BBA)
- ☐ Financial Services
- ☐ Marketing
- ☐ Sport Management (BBA)
- ☐ Technology Management (BBA)

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry (Math A)
Recommended: Algebra 2/Trigonometry (Math B)

BUSINESS ADMINISTRATION - AS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
ACCT	1124	Financial Accounting	4
COMP	1503	Freshman Composition	3
CISY	1103	Information Technology Mgt.	3
MATH	xxx3	Stats I Prerequisite OR Statistics I	3
MKTG	2073	Principles of Marketing	3
HPED		Physical Education Elective	1
			17
Second			
ACCT	2224	Managerial Accounting	4
BUAD	2033	Business Communications	3
	xxx3	Humanities Gen Ed Elective	3
CISY	xxx3	Computer Elective	3
MATH	xxx3	Statistics I OR Statistics II	3
	xxx3	Gen Education Elective	3
			19
Third			
BUAD	3153	Fundamentals of Mgt	3
BUAD	3043	Business Law I	3
BUAD	4203	Personal Fin Plan'g	3
ECON	1013	Macroeconomics	3
	xxx3	Natural Science Elective	3
			15
Fourth			
ECON	2023	Microeconomics	3
PLSC	1053	International Relations	3
BUAD	4053	Business Law II	3
	xxx3	Business Elective	3
	xxx3	Liberal Arts Elective	3
			15

GRADUATION REQUIREMENTS

66 semester hours with a 2.0 cumulative index.

BUSINESS MANAGEMENT

AAS Degree – Code #1306

Dianne Tuzzolino, Program Coordinator
E-mail address: tuzzoldc@alfredstate.edu

This program attracts students who are ultimately interested in a business management position. In addition, entry-level students unsure of which business career program to select may enroll in this program. Due to the program's broad business foundation, students can transfer to other business programs after the first semester and still graduate in four semesters.

A laptop computer is recommended, but not required, for students entering the business management (career) program. The College will provide a list of appropriate laptops and wireless modem cards to all students who have been accepted to attend Alfred State College.

TRANSFER OPPORTUNITIES

Students may transfer directly into one of our own BBA degree programs or to another college. Although not limited to these schools, common transfer institutions include: Alfred University, St. Bonaventure University, Rochester Institute of Technology, St. John Fisher College, SUNY at Albany, University at Buffalo, SUNY College at Brockport, SUNY College at Fredonia, SUNY College at Geneseo, SUNY College at Oneonta, SUNY College at Oswego, SUNY at Binghamton, Canisius College, Niagara University, and Hilbert College.

OCCUPATIONAL OPPORTUNITIES

- Office Supervisor
- Administrative Assistant
- Office Manager
- Leasing Agent
- Property Manager

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 8 percent are employed; 92 percent transferred to continue their education.

RELATED PROGRAMS

- Accounting
- Agricultural Business
- Business Administration (AS and BBA)
- Computer Information Systems
- Financial Services
- Financial Planning
- Marketing
- Sport Management (BBA)
- Technology Management

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra (Math A)
Recommended: Geometry, Algebra 2/ Trigonometry (Math B)

BUSINESS MANAGEMENT - AAS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
ACCT	1124	Financial Accounting	4
COMP	1503	Freshman Composition	3
CISY	1103	Information Technology Mgt	3
MKTG	2073	Principles of Marketing	3
MATH	xxx3	Math Elective	3
HPED	xxx1	Physical Education Elective	1
			17

Second			
ACCT	2224	Managerial Accounting	4
BUAD	2033	Business Communications	3
	xxx3	Humanities Gen Ed Elective	3
CISY	xxx3	Computer Elective	3
MATH	xxx3	Math Elective	3
	xxx3	Gen Education Elective	3
			19

Third			
BUAD	3153	Fundamentals of Mgt	3
BUAD	3043	Business Law I	3
BUAD	4203	Personal Financial Planning	3
ECON	1013	Macroeconomics	3
	xxx3	Business Elective	3
			15

Fourth			
BUAD	4053	Business Law II	3
ECON	2023	Microeconomics	3
MKTG	3153	Web Design and Marketing	3
BUAD	xxx3	Business Elective	3
	xxx3	Gen Ed or Business Elective	3
			15

GRADUATION REQUIREMENTS

66 semester hours with a 2.0 cumulative index as well as six hours of math.

CAD/CAM TECHNOLOGY

AAS Degree – Code #1337 ☐

Dr. Matthew Lawrence, Program Coordinator
E-mail address: lawrenmj@alfredstate.edu

The CAD/CAM technology program (computer-aided design/drafting – computer-aided manufacturing) prepares the graduate for a number of opportunities in the engineering and manufacturing-related fields. This program develops skills in the areas of design/drafting (2D CAD and 3D solid modeling) and automation/robotics. Graduates will become proficient with industry-standard software including AutoCAD, Pro/ENGINEER, and Mastercam. Each student will also be exposed to hardware such as coordinate measuring machines (CMM), computer numerically controlled (CNC) machines, and industry grade robotics. The CAD/CAM graduate can seamlessly enter the mechanical engineering technology baccalaureate program also offered at Alfred State College.

A laptop computer is required for students entering the CAD/CAM technology program. Laptop specifications are available at www.alfredstate.edu/required-laptops.

Program Educational Objectives

Program educational objectives were established with the assistance of the Industrial Advisory Committee and are reviewed periodically. The CAD/CAM technology program produces graduates who:

1. will be able to solve design and manufacturing problems using sound engineering principles and practices;
2. will be able to produce CAD drawings which communicate the appropriate manufacturing details, standards, and specifications;
3. will have the ability to effectively communicate with others using oral, written, and graphical methods and procedures;
4. will be able to function effectively on teams or on group projects and assume leadership roles when appropriate;
5. will perform in a professional and ethical manner and maintain currency in technological advancements.

INTERNSHIP OPPORTUNITIES

Internships are possible with many industries through Career Development located in the Hunter Student Development Center and may be eligible for technical credit.

TRANSFER OPPORTUNITIES

Graduates are eligible to continue their education by enrolling in a baccalaureate degree program in such areas as mechanical or industrial technology, but should work closely with their adviser on selection of technical and science electives. This program offers 100 percent transferability to Alfred State's bachelor of science in mechanical engineering technology program as the first part of the 2+2 format.

OCCUPATIONAL OPPORTUNITIES

- Structural or Piping System Design
- CAD/CAM Programmer
- Sales Representative in Quality Control, Production Planning, and Tool Design
- Quality Control or Materials Testing
- Appliance Product Design Technician in Manufacturing
- Machine or Heavy Equipment Design
- Cost Analyst or Estimator
- Computer Numerical Control Specialist
- Development
- Technical Sales
- Draftsman
- CAD or Model Specialist
- Field Installation
- Product Reliability Analyst
- Test and Quality Specialist
- Material and Finish Specialist
- Tool & Die Design
- Installation Supervisor

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 100 percent transferred to continue their education.

RELATED PROGRAMS

☐ Drafting/CAD
☐ Drafting/CAD: Model Building & Process Piping Drawing
☐ Drafting/CAD: Technical Illustration
☐ Electromechanical Engineering Technology
☐ Mechanical Design Engineering Technology
☐ Mechanical Engineering Technology

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required:	Algebra, Geometry (Math A)
Recommended:	Algebra 2/Trigonometry (Math B), Physics

CAD/CAM TECHNOLOGY - AAS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
MECH	**1003**	**Intro to MET/Lab**	**3**
MECH	**1603**	**Graphics/CAD**	**3**
MECH	**1203**	**Materials Science**	**3**
MECH	**4423**	**Robotics**	**3**
MATH	1033	College Algebra	3
HPED	xxx1	Phys Ed Elective	1
			16

Second			
MECH	**1643**	**Manufacturing Processes**	**3**
MECH	**1641**	**Manufacturing Processes Lab**	**1**
MECH	**2543**	**Advanced Drafting Applications**	**3**
MECH	**4523**	**Control System Fundamentals**	**3**
MATH	2043	College Trigonometry	3
COMP	1503	Freshman Composition	3
			16

Third			
MECH	**3113**	**Statics**	**3**
MECH	**3203**	**CAM**	**3**
MATH	2124	Statistical Methods and Analysis	4
LITR	2603	Introduction to Literature	3
PHYS	1024	General Physics	4
			17

Fourth			
MECH	**3643**	**Manufacturing Management**	**3**
MECH	**4333**	**Advanced CAM**	**3**
MECH	**4003**	**Solid Modeling**	**3**
xxx3	**xxx3**	**Technical Elective**	**3**
SOCI	1193	Marriage and Family** OR	
PLSC	1043	American Government	3
			15

Technical Electives:

MECH	3223	Mechanical Design Principles
MATH	1063	Technical Calculus I
PHYS	2023	General Physics II

GRADUATION REQUIREMENTS

- 64 maximum credits
- 20 credits of liberal arts and sciences
- **2.0 grade point average in major courses** (in bold text above)
- 2.0 cumulative grade point average
- Approval of department faculty
- 5 of 10 General Education areas

**Any student who does not enroll in SOCI 1193 or PLSC 1043 must enroll in two courses that satisfy General Education requirements.

CODING & REIMBURSEMENT SPECIALIST

Certificate – Code #1671 ▲

Tracy Locke, Program Director
E-mail address: locketf@alfredstate.edu

Securing accurate and appropriate payment for health care services challenges health care providers, insurance companies, and patients. Today's complex health care insurance and governmental payment systems depend on medical coding to determine proper payment. The coding and reimbursement specialist program incorporates the knowledge and skills needed to assign the correct code for prompt and accurate reimbursement. C&RS professionals analyze patient records, assign ICD (ICD-9-CM, ICD-10-CM/ICD-10-PCS), CPT, and HCPCS codes to diagnoses, procedures, and health care services provided to patients for timely and accurate healthcare billing, reimbursement, and medical necessity.

Web-based programs are organized under the health information technology/medical records program (HIT program). This means that if you initially select the C&RS program, you can transfer courses into the HIT program and earn your associate in applied science (AAS) degree.

Alfred State's comprehensive coding certificate program offers individuals the opportunity to pursue a business-related career that is an essential part of the health care industry. Students who successfully complete the C&RS program are eligible to take the national certification examination to become a Certified Coding Specialist (CCS). Traditionally, Alfred State graduates have achieved a passing rate above the national average on certification exams.

PROFESSIONAL PRACTICE EXPERIENCE

Students complete non-paid professional practice experiences (PPEs) in the health information (coding) department of an acute care hospital (200 hours). PPE arrangements are made in consultation with each student so that a convenient location is selected. Students are not a substitute for paid staff during PPEs, which means they are expected to receive appropriate supervision and mentoring during completion of all tasks.

The Joint Commission Hospital Accreditation Standards Manual requires hospitals to implement "a process to ensure that a person's qualifications are consistent with his/her job responsibilities." This standard "applies to staff, students, and volunteers," and it further states that the hospital is responsible for verifying "the following according to law, regulation, or hospital policy: information on criminal background." As such, Alfred State College students who complete PPEs in the C&RS program may be required to undergo a criminal background check prior to placement at the facility. In addition, the facility may require students to undergo a physical examination (on-site at the facility or by the student's primary care provider) prior to beginning the PPE. The physical examination includes drug screening, a TB test, and/or DTB, hepatitis B, and/or MMRV immunization or status. Students may be required to incur costs associated with the criminal background check and/or physical examination.

Once a PPE placement has been arranged, students are expected to contact the professional practice supervisor to arrange a schedule for attendance. Students may be required to attend an on-site orientation at the professional practice facility, which could be several days in length.

TRANSFER OPPORTUNITIES

Graduates are eligible to continue their education by completing the health information technology (HIT) program. The HIT program is also Internet-based.

OCCUPATIONAL OPPORTUNITIES

- Hospitals
- Clinics and Physicians' Offices
- Insurance Companies
- State and Federal Agencies
- Legal Firms
- Software Companies
- Consulting Firms

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 100 are employed.

CERTIFICATION

Graduates are eligible to take national certification examinations offered by the American Health Information Management Association (AHIMA) and the American Academy of Professional Coders (AAPC). AHIMA offers Certified Coding Specialist (CCS) exams, and the AAPC offers Certified Professional Coder (CPC) exams. It is strongly recommended students work for a minimum of one year full-time as a coder before taking the CCS and CPC exams.

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: High School Biology or equivalent
Must be able to visually read computer monitor; must be able to use keyboard and mouse.
Recommended: Keyboarding, MS Office Professional

RELATED PROGRAMS

▲ Health Information Technology

CODING & REIMBURSEMENT SPECIALIST - Certificate

TYPICAL FOUR-SEMESTER PROGRAM - Full-time

First			
BIOL	1114	Human A&P I	4
MEDR	1132	Essentials of Pharmacology	2
MEDR	1133	Medical Terminology	3
CISY	1003	Intro to Microcomputers	3
			12

Second			
MEDR	1114	Intro to Health Info Mgt	4
BIOL	2214	Human A&P II	4
BIOL	4403	Pathophysiology	3
MEDR	1223	Health Data Management	3
			14

Third			
MEDR	1244	CPT Coding * HCPCS Level II Coding	4
MEDR	1234	ICD-9-CM, ICD-10-CM & ICD-10-PCS Coding	4
MEDR	5114	Electronic Health Records	4
MEDR	5313	Legal Aspects of Health Information Management	3
			15

Fourth			
MEDR	5214	Insurance & Reimbursement Proc	4
MEDR	2614	Advanced Coding & Reimbursement	4
MEDR	1312	Intro to HIM PPE	2
MEDR	1323	Coding PPE	3
			13

C&RS students are required to earn a grade of a least a "C" or better in each BIOL and MEDR prefix course prior to placement in the PPEs. Students must also earn a grade of at "C" in the MEDR courses to graduate from the C&RS program.

Should a student fail MEDR or BIOL courses a second time: Students may re-take MEDR and/or BIOL courses as a continuing education student, then upon successful completion with a "C" or better, apply for readmission to the C&RS program, or students may retake the BIOL/MEDR equivalent courses on-campus at Alfred State College or at another college, and transfer the credit back to Alfred State College, if the course has been pre-approved for transfer credit and the student earned a grade of "C" or better.

522 Coding & Reimbursement Specialist
SOC Occupation Listings:
29-2052.00 Pharmacy Technicians
43-3051.00 Payroll and Timekeeping Clerks
43-3061.00 Procurement Clerks
43-4021.00 Correspondence Clerks
43-9041.01 Insurance Claims Clerks
43-9041.02 Insurance Policy Processing Clerks
43-9061.00 Office Clerks, General

Costs for entire program completed in normal time (full-time, in-state):
Tuition and required fees: $9,792.
Estimated costs of books and supplies: $1,895.
Room and Board charges for living on campus: $18,942
Additional cost information can be found at *www.alfredstate.edu/paying-for-college/tuition-and-costs*

Median Cumulative Loan Debt for students in the program between July 1, 2010, and June 30, 2011:
Median Federal Student Loan debt: $3,157.
Median Private Loan debt: $0.00
Median Institutional financing plan debt: $0.00

The on-time completion rate for student's completing the program between July 1, 2010, and June 30, 2011, within the normal time using the typical semester recommendations as listed is 30%.

The job placement rate for students who completed their program between July 1, 2008, through June 30, 2009, can be found in the following chart.

Employment and Transfer Report
Employment and Transfer Rate: 100%

Survey Details	2007	2008	2009
Receiving Degrees	7	3	3
Responding to Survey	3 (43%)	1 (33%)	2 (67%)
Employed	2 (67%)	1 (100%)	2 (100%)
Employed in Field	2 (100%)	--	2 (100%)
Transfered	1 (33%)	--	--
Unemployed & SeekingEmployment	--	--	--
Unemployed & Not Seeking Employment	--	--	--

Employment and Transfer Salary Information:

$30,000 - $39,999 (1)
Prefer not to disclose (1)

COMPUTER ENGINEERING TECHNOLOGY

AAS Degree – Code #1602 ■

BS Degree - Code #1357■

The computer engineering technology program provides the knowledge and skills necessary for graduates to secure employment as technicians or technologists who are capable of installing, designing, supporting, and maintaining computer systems and networks. This is a hands-on, technically oriented program with a focus on computer system hardware and network infrastructure, but does include software development and operating systems course work. The program is designed to prepare students for professional certification examinations leading to certifications such as the CompTIA A+ and Network+, Microsoft Certified System Administrator (MCSA), Microsoft Certified System Engineer (MCSE), and Cisco Certified Network Associate (CCNA).

The first year of the computer engineering technology program provides students with a foundation of knowledge in digital and electronic circuits and math, as well as an introduction to computer systems and networking. In the following years the program continues developing skills in computer hardware, operating systems, and networking. Second and third years of study build upon the electric and computer background. In the fourth year of the program, students can either complete a senior project or do an internship with an employer. The internship program provides real-world experience for students by having them work for an entire semester at a company.

Students may enter the bachelor of science program in computer engineering technology as freshmen for an eight-semester sequence, or in the fifth semester as transfer students with the appropriate technical background. Typically, graduates of AAS computer engineering technology programs can be articulated to complete the bachelor program in two years. Additionally, students entering the bachelor of science program in computer engineering technology as freshmen can apply for an AAS degree in computer engineering technology upon completion of the AAS requirements (typically at the end of the fourth semester). This, along with potential industry certifications earned, can enable the student to obtain meaningful summer or part-time employment opportunities while completing studies.

A laptop computer is required for students entering the computer engineering technology program. The College will provide a list of appropriate laptops and wireless modem cards to all students who have been accepted to attend Alfred State College. Some courses may require specialized tools and/or electronic components.

Program Educational Objectives

Program educational objectives were established with the assistance of the Industrial Advisory Committee and are reviewed periodically. The AAS in the computer engineering technology program produces graduates who:

1. Apply knowledge of mathematics and science using critical thinking and creative skills to solve computer engineering technology problems;

2. Function professionally with effective communication and with ethical responsibility as individuals and as members of a multidisciplinary team;

3. Continuously improve and engage in life-long learning and adapt to a technologically advancing society;

4. Apply knowledge of contemporary issues and anticipate the impact of computer engineering technology solutions on industry and the general public;

5. Use current techniques, skills, and tools necessary to support computer engineering practice.

In addition to the AAS program educational objectives, the BS in computer engineering technology produces graduates who:

1. Design computer engineering systems, components, or processes to meet industry needs;

2. Design computer engineering technology experiments, as well as analyze and interpret data to support the problem-solving process and project design.

TRANSFER OPPORTUNITIES

Graduates from the associate-level computer engineering technology program are eligible to continue their education by enrolling in a baccalaureate degree program in computer engineering technology at Alfred State or

elsewhere. Our computer engineering technology AAS two-year degree program is the same as the first two years of the computer engineering technology BS four-year degree program.

OCCUPATIONAL OPPORTUNITIES

- Computer Network Technician
- Computer Network Computer Systems Integrator
- Computer Network Support Specialist
- Computer Network Administrator
- Computer Network Engineering Technician
- Computer Systems Engineering Technician

EMPLOYMENT STATISTICS

- Computer Engineering Technology (AAS degree) - No data available
- Computer Engineering Technology (BS degree) - 100 percent - 80 percent are employed; 20 percent transferred to continue their education.

RELATED PROGRAMS

- Computer Information Systems
- Computer Science
- Electrical Engineering Technology
- Information Technology: Network Administration
- Information Security and Assurance

ENTRANCE REQUIREMENTS/RECOMMENDATIONS (AAS)

Required: Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)

Recommended:Physics

ENTRANCE REQUIREMENTS/RECOMMENDATIONS (BS)

Required:	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B), SAT and/or ACT scores with recommended SAT score of 1000 (critical reading and math) or a composite ACT score of 21.
Recommended:	Physics

COMPUTER ENGINEERING TECHNOLOGY – AAS/BS Degree

COMPUTER ENGINEERING TECHNOLOGY - AAS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
ELET	1202	Intro to Electrical Technology	2
CISY	1113	Intro to Computer Programming	3
ELET	1001	Seminar	1
COMP	1503	Freshman Composition**	3
ELET	1133	Digital Logic	3
ELET	1111	Digital Logic Laboratory	1
HPED	xxx1	Physical Education Elective	1
MATH	1033	College Algebra or Above	3
			17

Second			
LITR	2603	Introduction to Literature	3
CISY	2143	Microcomputer Systems	3
ELET	1143	Electronic Fabrication	3
MATH	2043	College Trigonometry	3
ELET	1104	Circuit Theory	4
ELET	1151	Circuit Theory Lab	1
			17

Third			
ELET	2103	Electronic Theory I	3
ELET	2151	Electronics Laboratory I	1
PHYS	1024	General Physics I	4
CISY	5123	Scientific Programming in C/C++	3
MATH	1063	Technical Calculus I	3
ELET	2143	Embedded Controller	3
			17

Fourth			
CISY	4053	Linux OS & Scripting	3
PHYS	2023	General Physics II	3
CISY	5203	Network Administration	3
CISY	4003	Intro to Data Structures	3
ELET	2163	Data Communications	3
SOCI	1193	Marriage and Family	3
			18

** One-half of Gen Ed Silo for "Communication"

GRADUATION REQUIREMENTS - Associate of Applied Science (AAS) Degree

- 69 semester credit hours in program as listed above
- 28 semester credit hours of liberal arts and sciences from at least five of the General Education content groups: mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilization, arts, foreign language, and basic communications (must include COMP 1503)
- 2.0 cumulative grade point average, and 2.0 grade point average in major courses (ELET, CISY)
- Approval of department faculty

COMPUTER ENGINEERING TECHNOLOGY - BS Degree

TYPICAL FIVE- THROUGH EIGHT-SEMESTER PROGRAM

Fifth			
CISY	3283	Internetworking I	3
SPCH	1083	Effective Speaking **	3
MATH	2074	Technical Calculus II	4
COMP	5703	Technical Writing	3
	xxx3	Gen Ed "Other"*	3
			16

Sixth			
CISY	7003	Project Management	3
CISY	6703	Network Design Concepts	3
CISY	4283	Internetworking II	3
MATH	6114	Differential Equations	4
ELET	7404	Embedded & Real Time Systems	4
			17

Seventh			
CISY	8303	Software Op & Interop	3
CISY	8603	Seminar in Critical Issues in IT	3
MATH	7113	Econ Analysis for Engr Tech	3
CHEM	5013	Applied Chemical Principles	3
PHYS	8013	Modern Physics	3
MATH	7123	Statistics for Engineering Tech	3
			18

Eighth			
CISY	8712	Information Tech Internship **OR**	12
BSET	8006	Senior Project **AND**	6
CISY	xxx3	Professional Elective **AND**	3
CISY	xxx3	Professional Elective	3
	xxx3	Liberal Arts Elective (online)	3
	xxx3	Liberal Arts Elective (online)	3
			18

* See Elective Sheet for four-year majors for Gen Ed & other types of electives

** One-half of Gen Ed Silo for "Communication"

Internship Prerequisites: Minimum program GPA of 2.5 and minimum overall GPA of 2.0.

GRADUATION REQUIREMENTS - Bachelor of Science (BS) Degree

- 138 semester credit hours in eight-semester program
- 60 semester credit hours of liberal arts and sciences from at least seven of the General Education content groups: mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilization, arts, foreign language, and basic communications (must include COMP 1503)
- Minimum of 45 hours upper division
- Minimum of 24 hours upper division in major
- Minimum of 30 hours upper division in residence
- 2.0 cumulative grade point average, and 2.0 grade point average in major courses (BSET, CISY, ELET)
- Approval of department faculty

COMPUTER ENGINEERING TECHNOLOGY

BS Degree – Code #1357 n

The computer engineering technology program provides the knowledge and skills necessary for employment as technologists who are capable of installing, designing, supporting, and maintaining computer systems and networks. This is a hands-on, technically oriented program with a focus on computer system hardware and network infrastructure, but does include software development and operating systems work. The program is designed to prepare students for the rigorous professional certification examinations leading to certifications as CompTIA A+ and Network+, Microsoft Certified System Administrator (MCSA), Microsoft Certified System Engineer (MCSE) and Cisco Certified Network Associate (CCNA).

The computer engineering technology, electromechanical engineering technology, and electrical engineering technology programs have a common first semester and only minor differences in the second semester. This was designed to allow students the flexibility to change majors should they choose. The first year of the computer engineering technology program provides students with a foundation of knowledge in digital and electronic circuits and math, as well as an introduction to computer systems and networking. Students can earn their A+ and Network+ certifications in this first year, providing them with a marketable employment credential. In the following years the program continues developing skills in computer hardware, operating systems and networking. During the second year of course work, three additional certification examinations will earn the student the Microsoft Certified System Administrator (MCSA) title. Additional examinations in the final two years of the program will earn the Microsoft Certified System Engineer (MCSE) and Cisco Certified Network Associate (CCNA) titles.

In the fourth year of the program, students complete an internship. The internship program provides real-world experience for students by having them work for an entire semester at a company.

Although the professional certifications and job titles listed overlap with information technology (IT) program descriptions, IT programs typically do not have the technical course content in the circuits, computer hardware, and network infrastructure areas that the computer technology program has. Instead, IT programs focus more on software application areas such as database and Web programming and support areas such as network administration and user support.

Students may enter the bachelor of science program in computer engineering technology as freshmen for an eight-semester sequence, or in the fifth semester as transfer students with the appropriate technical background. Typically, graduates of AAS computer engineering technology programs can be articulated to complete the bachelor program in two years. Additionally, students entering the bachelor of science program in computer engineering technology as freshmen can apply for an AAS degree in computer engineering technology upon completion of the AAS requirements (typically at the end of the fourth semester). This, along with professional certifications earned, can enable the student to obtain meaningful summer or part-time employment opportunities while completing studies.

A laptop computer is required for students entering the computer engineering technology program. Laptop specifications are available at www.alfredstate.edu/required-laptops. Some courses may require specialized tools and/or electronic components.

Program Educational Objectives

The BS in computer engineering technology program produces graduates who:

1. Apply knowledge of mathematics and science using critical thinking and creative skills to solve computer engineering problems;
2. Function professionally with effective communication and with ethical responsibility as individuals and as members of a multidisciplinary team;
3. Continuously improve and engage in life-long learning and adapt to a technologically advancing society;
4. Apply knowledge of contemporary issues and anticipate the impact of computer engineering solutions on industry and the general public;
5. Use current techniques, skills, and tools necessary to support computer engineering practice;
6. Design computer engineering systems, components, or processes to meet industry needs;
7. Design computer engineering experiments, as well as analyze and interpret data to support the problem solving process and project design.

OCCUPATIONAL OPPORTUNITIES

- Computer Network Technician
- Computer Network Support Specialist
- Computer Network Administrator
- Computer Systems Engineering Technician
- Computer Network Computer Systems Integrator
- Computer Network Engineering Technician

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 100 percent are employed.

RELATED PROGRAMS

l Computer & Electronic Systems Technician
n Computer Art & Design
n Computer Information Systems
n Computer Science
n Electrical Engineering Technology
n Electromechanical Engineering Technology

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B), SAT and/or ACT scores with recommended SAT score of 1000 (critical reading and math) or a composite ACT score of 21.
Recommended: Physics

CERTIFICATION OR LICENSURE

Students may earn A+ and Network+ certifications from CompTIA, as well as the Microsoft Certified System Administrator (MCSA), Microsoft Certified System Engineer (MCSE), and Cisco Certified Network Associate (CCNA) certifications upon successful completion of the appropriate certification examinations.

COMPUTER ENGINEERING TECHNOLOGY – BS Degree

TYPICAL EIGHT-SEMESTER PROGRAM

First			
COMP	1503	Freshman Composition	3
ELET	1003	Intro to Comp Hardware & Troubleshooting	3
ELET	1111	Digital Logic Laboratory	1
ELET	1133	Digital Logic	3
ELET	1143	Electronic Fabrication	3
ELET	1001	Seminar	1
MATH	1033	College Algebra	3
			17

Second			
ELET	1103	Circuit Theory I	3
ELET	1151	Circuit Theory I Lab	1
MATH	2043	College Trigonometry	3
PHYS	1024	General Physics I	4
ELET	2012	Intro Computer Networks	2
	xxx3	Gen Education Elective	3
			16

Third			
ELET	2103	Electronics Theory I	3
ELET	2151	Electronics I Laboratory	1
ELET	2143	Embedded Controller Fund	3
	xxx3	Gen Education Elective	3
PHYS	2023	General Physics II	3
ELET	5224	Adv Microprocessor Sys	4
			17

Fourth			
ELET	8234	LAN Systems	4
ELET	4114	Network Management	4
MATH	1063	Technical Calculus I	3
ELET	4174	Network Infrastructure Essen	4
SPCH	1083	Effective Speaking	3
			18

Fifth			
	xxx3	Gen Education Elective	3
ELET	6404	WAN Systems	4
MATH	2074	Technical Calculus II	4
COMP	5703	Technical Writing	3
CISY	5123	Sci Program'g in C & C++	3
			17

Sixth			
ELET	5414	Network Design & Implement	4
ELET	3444	Electronic Communications	4
	xxx3	Gen Ed - Upper Level Elective	3
MATH	xxx4	Upper Div Math Elective	4
	xxx3	Gen Ed - Free Elective	3
			18

Seventh			
BSET	7001	Sr Sem & Project Design	1
ELET	7204	Routing & Switching	4
CHEM	5013	Applied Chemical Principles	3
MATH	7113	Econ Analysis for Engr Tech	3
PHYS	8013	Modern Physics	3
MATH	7123	Statistics for Engin Tech	3
			17

Eighth			
ELET	xx12	Senior Internship*	12
			12

*GPA of 2.0 or higher required in major courses; internship is student initiated

Also required: One unit of Physical Education.

Certification Tracks:

A+ and Network+ (CompTIA Certified Computer Technician)
MCSA (Microsoft Certified System Administrator)

BACHELOR OF SCIENCE DEGREE GRADUATION REQUIREMENTS

- 133 semester credit hours in eight-semester program
- 60 semester credit hours of liberal arts and sciences from at least seven of the General Education content groups: mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilization, arts, foreign language, and basic communications (must include COMP 1503)
- Minimum of 45 hours upper division
- Minimum of 24 hours upper division in major

- Minimum of 30 hours upper division in residence
- 2.0 cumulative grade point average, and 2.0 grade point average in major courses (BSET, CISY, ELET, EMET)
- Approval of department faculty

COMPUTER INFORMATION SYSTEMS

AAS Degree – Code #0581

The integration of computers into the workplace is progressing at a rapid pace. As more organizations install and employ these networks, a need has developed for the "resident expert" to administer the system, install software, establish security, and train others. Graduates of the computer information systems (CIS) program are well positioned to serve that need. A foundation of programming, database, and networking is provided.

The CIS program is oriented toward today's changing computer environment. It is very contemporary, stressing computer programming, software applications, Web development, and network installation and management. Students can complete the Cisco Certified Network Association curriculum and have a strong foundation to pursue professional certifications for CompTIA A+, Network+, and CCNA. The college has a Pearson Vue testing center.

A laptop computer is required for students entering the computer information systems program. Laptop specifications are available at www.alfredstate.edu/required-laptops.

TRANSFER OPPORTUNITIES

To facilitate the transfer of graduates choosing to continue their education at the baccalaureate level, students are encouraged to make their intentions known to their academic adviser during their freshman year. Through the careful use of elective courses, students can realize excellent transfer credit.

Transfer into the information technology programs: network administration, Web development, and applications software development will place them at junior status.

OCCUPATIONAL OPPORTUNITIES

- Network Management
- Systems Administration
- Computer Technology
- Computer Support
- Computer Programming
- Web Development
- Network Administrators

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 11 percent are employed; 89 percent transferred to continue their education.

RELATED PROGRAMS

- Computer Engineering Technology
- Computer Science
- Information Security & Assurance
- Information Technology: Applications Software Development
- Information Technology: Network Administration
- Information Technology: Web Development

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required:	Algebra, Geometry (Math A)*
Recommended:	Algebra 2/Trigonometry (Math B)

* Students who place into intermediate algebra will be required to take one additional mathematics course.

COMPUTER INFORMATION SYSTEMS - AAS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
CISY	1023	Intro to Information Technology	3
CISY	1123	Intro to Computer Prog for IT	
		OR	
CISY	1113	Intro to Comp Programming	3
COMP	1503	Freshman Composition	3
	xxx3	Gen. Ed Elective - Social Science	3
	xxx3	Gen Ed Elective - Other	3
			15
Second			
CISY	4103	Visual Programming & Dev	3
CISY	2143	Microcomputer Systems	3
LITR	2603	Intro to Literature	3
MATH	xxx3	College Algebra or Above	3
CISY	2153	Database Appl & Prog I	3
HPED	xxx1	Physical Education	1
			16
Third			
CISY	4033	Networking I	3
CISY	3223	Intro to Web Page Development	3
MATH	1123	Statistics I	
		OR	
MATH	2124	Statistics Methods & Analysis	3-4
ACCT	1124	Financial Accounting	4
	xxx3	Professional Elective	3
			16-17
Fourth			
CISY	4053	Linux OS & Scripting	
		OR	
CISY	5403	Database Concepts (advanced)	3
SPCH	1083	Effective Speaking	3
	xxx3	Gen Ed Elective - Other	3
	xxx3	Professional Elective	3
	xxx3	Professional Elective	3
			15

*Adviser-approved mathematics course not to include MATH 1003, MATH 1013, MATH 2003, or MATH 1143.

Technical elective may include CISY, business, and selected courses from math or engineering as approved by the adviser.

GRADUATION REQUIREMENTS

Must complete a minimum of 24 credit hours of required CISY courses and nine credit hours of professional electives approved by adviser with a minimum 2.0 cumulative index. Twenty credit hours of liberal arts courses, a minimum overall cumulative index of 2.0, along with other requirements as stated in the College Academic Regulations, must be met by candidates of the AAS degree. Must successfully complete a minimum of 62 credit hours of course work and one semester of physical education.

COMPUTER SCIENCE

AS Degree – Code #0532

The computer science program at Alfred State College was one of the originally established programs in the SUNY (State University of New York) system. It is a comprehensive program, which includes both the study of the underlying theories of computing as well as the specific applications of information manipulation and problem solving.

Most students who enroll in computer science do so with the intent of continuing their education after graduating from Alfred State College. The degree granted is an associate in science (AS), and supports exceptionally well the needs of the transfer student. Though primarily a "transfer" program, many students do, however, elect to enter the job market upon graduation.

A laptop computer is required for students entering the computer science program. Laptop specifications are available at www.alfredstate.edu/required-laptops.

TRANSFER OPPORTUNITIES

The primary focus of the computer science program is transfer. The AS degree granted is specifically designed to maximize transfer credit to four-year programs. We have articulation agreements for transferring credits with public and private colleges.

Transfer into the information technology programs: network administration, Web development, and applications software development is possible with junior status with careful selection of courses for electives.

OCCUPATIONAL OPPORTUNITIES

- Network Management
- Systems Administration
- Computer Engineering Technology
- Computer Support
- Computer Programming
- Database Administration
- Web Development

EMPLOYMENT STATISTICS

Employment and transfer rate: No data available.

RELATED PROGRAMS

- Computer Engineering Technology
- Computer Information Systems
- Information Security & Assurance
- Information Technology: Applications Software Development
- Information Technology: Network Administration
- Information Technology: Web Development

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required:	Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)
Recommended:	Pre-calculus, Physics

COMPUTER SCIENCE - AS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
CISY	1023	Intro to Information Tech	3
CISY	1113	Intro to Computer Prog	3
COMP	1503	Freshman Composition	3
MATH	xxx3	Pre-Calculus 1054 or above	3
SOCI	xxx3	Social Science Elective*	3
			15
Second			
CISY	4103	Visual Program'g & Devel	3
LITR	2603	Introduction to Literature	3
MATH	1084	Calculus I	
		OR	
MATH	2163	Discrete Mathematics	3-4
CISY	2153	Database Appl & Prog I	3
	xxx3	Gen Ed - Other	3
			15-16
Third			
CISY	4033	Networking I	3
CISY	3223	Intro to Web Page Development	3
	xxx3	Open Elective	3
	xxx4	Gen Ed - Natural Science w/Lab	4
	xxx3	Professional Elective	3
			16
Fourth			
CISY	4053	Linux OS & Scripting	
		OR	
CISY	5403	Database Concepts (advanced)	3
CISY	4003	Intro to Data Structures	3
SPCH	1083	Effective Speaking	3
	xxx3	Gen Ed "Other"	3
	xxx3	Liberal Arts Elective	3
HPED	xxx1	Physical Education	1
			16

*Social science elective may include economics, history, political science, psychology, or sociology.

Professional elective may include CISY, business, and selected courses from math or engineering as approved by the adviser.

GRADUATION REQUIREMENTS

Must complete a minimum of 24 credit hours of required CISY courses and one professional elective approved by adviser with a 2.0 cumulative index. A minimum cumulative index of 2.0, along with other requirements as stated in the College Academic Regulations, must be met by candidates for the AS degree. A minimum of 62 credit hours of course work including one credit of physical education. Thirty credit hours in liberal arts are required.

CONSTRUCTION ENGINEERING TECHNOLOGY

AAS Degree – Code #0577

The technical education in this program is a well-designed balance of theoretical and laboratory studies, providing the graduate with a broad knowledge of civil engineering technology and the construction fields. This training provides the background which enables a person to progress to advanced technical and supervisory positions in the industry and reflects the changes occurring in the construction industry due to expanding computer technology and use of electronically controlled equipment.

The College sponsors an intern program with the NYS Asphalt Pavement Association and The National Asphalt Pavement Association which enables qualified students to work within this segment of the industry during the summer after the first year.

This program is accredited by the Technology Accreditation Commission, Accreditation Board for Engineering Technology, Inc. (TAC/ABET), 111 Market Place – Suite 1050, Baltimore, MD 21202; (410) 347-7700.

A laptop computer is required for students entering the construction engineering technology program. Laptop specifications are available at www.alfredstate.edu/required-laptops.

A student who completes the AAS degree can complete the bachelor's degree in two additional years.

PROGRAM EDUCATIONAL OBJECTIVES

Program educational objectives were established with the assistance of the Industrial Advisory Committee and are reviewed periodically. The construction engineering technology program produces graduates who:

1. Write, read, and orally present technical reports, letters, and projects that meet the standards of the profession;
2. Understand and are able to complete various activities related to construction such as interpret construction documents, draw plans using computer-aided drafting, complete an estimate, manage project activities, and be able to technically review construction materials used on the project;
3. Recognize the need for and have an ability to engage in continued formal education as well as lifelong learning.

OCCUPATIONAL OPPORTUNITIES

- Construction Inspector
- Materials Tester
- Building Inspector
- Engineering Technician
- Estimator
- Sales Representative
- Installation Supervisor
- Quality Control Technician
- Code Enforcement Officer
- Structural Detailer
- Superintendent of Public Works
- Project Coordinator
- Construction Superintendent

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 100 percent are employed.

RELATED PROGRAMS

- Construction Management Engineering Technology
- Surveying Engineering Technology

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)

Recommended: Physics

CONSTRUCTION ENGINEERING TECHNOLOGY - AAS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
COMP	1503	Freshman Composition	3
CIVL	1011	Civil AutoCAD	1
CIVL	1204	Surveying I	4
CIVL	1013	Portland Cement Conc	3
CIVL	1182	Civil Tech Graphics	2
MATH	1033	College Algebra	3
			16
Second			
CIVL	2154	Qual Control of Const	4
CIVL	2204	Surveying II	4
PHYS	1024	General Physics	4
MATH	2043	College Trigonometry	3
LITR	2603	Introduction to Literature	3
			18
Third			
CIVL	3554	Comm Bldg	4
CIVL	4104	Structural Design	4
PHYS	2023	General Physics II	3
MATH	1063	Technical Calculus I	3
	xxx3	Gen Education Elective	3
			17

Fourth			
CIVL	4143	Contracts/Spec/Estimat'g	3
CIVL	4144	Construction Mgt	4
CIVL	7104	Land Development	4
CIVL	6113	Environmental Engr Tech	3
	xxx3	Gen Education Elective	3
			17

Entry level of student into math and composition/literature sequences is a function of student's high school preparation and mathematics and English placement examinations.

Math through technical calculus I must be completed. Freshman composition and introduction to literature must be taken.

Also required: One unit of physical education.

CONSTRUCTION MANAGEMENT ENGINEERING TECHNOLOGY

BS Degree – Code #1603 ☐

This program has a series of technical courses designed to familiarize the graduate with all aspects of construction management; a series of related courses in math, science, and several business courses which give the graduate a broad-based education that will provide the skills needed in a leadership role in today's construction business.

Students from the CMET programs won the 2000 Associated Schools of Construction Northeast Regional Heavy/Highway Construction Management Competition. Alfred State students compete annually against other colleges in the northeast that have construction management programs.

This program is accredited by the Technology Accreditation Commission, Accreditation Board for Engineering Technology, Inc. (TAC/ABET), 111 Market Place – Suite 1050, Baltimore, MD 21202; (410) 347-7700, as well as the American Council for Construction Education (ACCE), 1717 North Loop Road 1604 East, Suite 320, San Antonio, TX 78232.

A laptop computer is required for students entering the construction management engineering technology program. Laptop specifications are available at www.alfredstate.edu/required-laptops.

Students can compete for scholarships given by the Associated General Contractors of New York.

Seniors in the BS program are required to take the Certified Professional Construction Level I exam prior to graduation.

PROGRAM EDUCATIONAL OBJECTIVES

Program educational objectives were established with the assistance of the Industrial Advisory Committee and are reviewed periodically. The construction management engineering technology program produces graduates who:

1. Write, read, and orally present technical reports, letters, and projects that meet the standards of the profession;
2. Understand and are able to complete various activities related to construction such as interpret construction documents, draw plans using computer-aided drafting, complete an estimate, manage project activities, and be able to technically review construction materials used on the project;
3. Recognize the need for and have an ability to engage in continued formal education as well as lifelong learning;
4. Analyze and synthesize using industry standard software estimates, schedules, and project administration data;
5. Successfully interact with clients, owners, co-workers, government agencies, and other construction-related entities;
6. Manage multidisciplinary teams in order to successfully complete a project.

WORK EXPERIENCE

Students typically gain work experience through summer employment with construction companies.

OCCUPATIONAL OPPORTUNITIES

- ☐ Project Manager
- ☐ Estimator
- ☐ Project Scheduler
- ☐ Planner
- ☐ Construction Supervisor
- ☐ Facilitator
- ☐ Plant Manager
- ☐ Construction Equipment Sales
- ☐ Materials Sales
- ☐ Facilities Management

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 100 percent are employed.

RELATED PROGRAMS

- ☐ Architectural Engineering Technology
- ☐ Building Trades: Building Construction
- ☐ Civil Engineering Technology
- ☐ Construction Engineering Technology

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/ Trigonometry Math A and B), SAT and/or ACT scores with a recommended combined SAT score of 1000 (critical reading and math) or a composite ACT score of 21.

Recommended: Physics

CONSTRUCTION MANAGEMENT ENGINEERING TECHNOLOGY - BS Degree

TYPICAL EIGHT-SEMESTER PROGRAM

First			
COMP	1503	Freshman Composition	3
CIVL	1011	Civil AutoCAD	1
CIVL	1204	Surveying I	4
CIVL	1013	Portland Cement Conc	3
CIVL	1182	Civil Tech Graphics	2
MATH	1033	College Algebra	3
			16

Second			
CIVL	2154	Qual Control of Mat	4
CIVL	2204	Surveying II	4
PHYS	1024	General Physics I	4
MATH	2043	College Trigonometry	3
LITR	2603	Introduction to Literature	3
			18

Third			
CIVL	3554	Comm Bldg	4
CIVL	4104	Structural Design	4
PHYS	2023	General Physics II	3
MATH	1063	Technical Calculus I	3
	xxx3	Gen Education Elective	3
			17

Fourth			
CIVL	4143	Contracts/Spec/Estimat'g	3
CIVL	4144	Construction Mgt	4
CIVL	7104	Land Development	4
CIVL	6113	Environmental Engr Tech	3
	xxx3	Gen Education Elective	3
			17

Fifth			
SPCH	1083	Effective Speaking	3
ECON	1013	Macroeconomics	3
COMP	5703	Technical Writing II	3
CIVL	7213	Construction Systems	3
	xxx3	Gen Education Elective	3
			15

Sixth			
CHEM	5013	Applied Chemical Principles	3
CIVL	6214	Advanced Estimating	4
CIVL	6212	Construction Safety	2
ACCT	5043	Accounting Perspectives	3
	xxx3	Gen Education Elective	3
CIVL	6123	Mechanical Systems	3
			18

Seventh			
MATH	1123	Statistics I	3
CIVL	7223	Construction Project Planning	3
MATH	7113	Economic Analysis for Engineering Technology	3
TMGT	7153	Prin of Management	3
	xxx3	Gen Education Elective	3
			15

Eighth			
BUAD	7273	Organizational Behavior	3
CIVL	5213	Foundations & Concrete Construction	3
CIVL	8123	Construction Project Administration	3
BUAD	3043	Business Law I	3
	xxx3	Gen Education Elective-Upper	3
ECON	2023	Microeconomics	3
			18

Also required: One unit of physical education.

General Education Electives:
American History
Social Sciences
Western Civilization
Other World Civilization
Arts

COURT AND REALTIME REPORTING

AAS Degree – Code #0647

Melissa Blake, Program Coordinator
E-mail address: blakemj@alfredstate.edu

This program, approved by the National Court Reporters Association, prepares students for careers as official, freelance, realtime reporters and captioners. Jobs are available for competent court reporters to work in all fields of reporting, including realtime and closed captioning for the hearing impaired.

One feature of the court and realtime reporting program is the development of high recording skills to 225-plus words per minute through the use of realtime translation machine shorthand and computer aided transcription (CAT). In the first year, students learn realtime shorthand theory and develop computer skills that will enhance their overall employability. The prerequisite for entering the specialized court reporting course in the summer session is the attainment of a minimum recording speed of 90 words per minute. Development of skills in recording and transcribing specialized court reporting matter starts in the summer term and continues through the second year. Students in their senior year elect to go in to judicial or broadcast captioning.

All entering freshmen are required to purchase their own computerized shorthand machine and student software in order to practice realtime writing outside the class. The approximate cost of this equipment is $2,300 and should be included in college expenses.

The College offers court reporting-related courses (courses with a CTRP prefix) over the Internet, making it possible for students who transfer in credit or attend other colleges to earn their degree from Alfred State College in court and realtime reporting. The Internet approach still requires two years of course work and does not change any of the standards reflected in graduation requirements for all students. The Internet approach is designed for those who are currently working and seeking a change in career, single parents, or individuals who cannot attend a college campus.

TRANSFER OPPORTUNITIES

Graduates of this program may transfer directly into our own baccalaureate program in technology management (BBA).

OCCUPATIONAL OPPORTUNITIES

- Official Court and Hearing Reporters
- General Freelance Reporters
- Realtime and Closed-Captioning Reporters
- Legal Office Administration and Scoping

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 100 percent are employed.

RELATED PROGRAMS

- Technology Management (BBA)

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra (Math A)

COURT AND REALTIME REPORTING AND CAPTIONING - AAS Degree

TYPICAL FOUR-SEMESTER PROGRAM (on campus and Internet)

First			
CTRP	1174	Realtime Writing Theory I	4
BUAD	1103	Keyboarding	3
BUAD	1543	Grammar	3
COMP	1503	Freshman Composition	3
	xxx3	Gen Ed Elective	3
			16
Second			
CTRP	2274	Realtime Writing Theory II	4
CTRP	3373	Computer Aided Transcription	3
	xxx3	Humanities Requirement	3
	xxx3	Gen Ed Elective	3
			13
Summer Session (required)			
CTRP	3163	Speed Bldg I for Reporting/Caption	3
CTRP	3363	Tech for Reporting/Captioning	3
			6
Third			
CTRP	4265	Speed Bldg II for Reporting/Captioning	5
CTRP	2603	Personal Dictionary Prod/Maintenance	3
	xxx3	Business Law I OR Medical Term	3
SPCH	1083	Effective Speaking	3
	xxx3	Gen Ed Elective	3
			17
Fourth			
CTRP	4365	Speed Bldg III for Reporting/Captioning	5
CTRP	4602	Internship & Practicum for R/C	2
CTRP	4634	Procedures for Reporting/Captioning	4
	xxx3	Business Law I or Med Term	3
	xxx3	Gen Ed Elective	3
			17

Total Credit Hours: 70

* Students may select one of these general education requirements (math, science, psychology, sociology) for each semester.

** Students may select BUAD 3043 - business law I or MEDA 1133 - medical terminology in either semester.

Also required: One unit of physical education.

GRADUATION REQUIREMENTS

In addition to the AAS degree requirements, the Business Department requires a 2.0 grade point average in required court reporting subjects. All courses listed must be satisfactorily completed and a minimum of 62 credit hours earned. Court reporting students must also meet all the NCRA requirements as stated in the course objectives, including the passing of three, five-minute tests on unfamiliar matter with 95 percent accuracy on two-voice material at 225 wpm, jury charge material at 200 wpm, and literary material at 180 wpm; two five-minute timed writings in keyboarding from unfamiliar material at a minimum of 60 gross wpm with a maximum of five errors; the completion of 40 verified hours of internship experience, including the production of a 40-page transcript; the transcription of a simulated RPR skills test at RPR speed levels in three hours; and the production of accurate transcripts using computer-aided technology as stated in the course outlines. Captioning students must write a five-minute, 180-wpm literary tape with 1.4 syllabic density at 96 percent accuracy; prepare a captioned translation evaluation taken from the internship experience; and complete at least 40 verified hours of actual writing time during the internship.

226 Court Reporting and Captioning

SOC Occupation Listings:
23-2091-00 Court Reporters

Costs for entire program completed in normal time (full-time, in-state):
Tuition and required fees: $11,015.60
Estimated costs of books and supplies: $4,845.
Room and Board charges for living on campus: $20,900
Additional cost information can be found at *www.alfredstate.edu/paying-for-college/tuition-and-costs*

Median Cumulative Loan Debt for students in the program between July 1, 2010, and June 30, 2011:
Median Federal Student Loan debt: $5,500.
Median Private Loan debt: $5,406.
Median Institutional financing plan debt: $0.00

The on-time completion rate for student's completing the program between July 1, 2010, and June 30, 2011, within the normal time using the typical semester recommendations as listed is 100%.

This is a new certificate program and job placement rates are not available.

CULINARY ARTS

AOS Degree – Code #0578

The courses train students in the principles applied to culinary arts. The goal is to prepare men and women for supervisory trainee positions, food production positions, or culinary arts positions which require special skills and knowledge of food, business, and human relations. By learning the fundamental culinary principles basic to the food service industry and employing the techniques of food planning, preparation, and supervision in the lab classes, the students develop skills, confidence, and judgment.

During the second year, students put into practice techniques of personnel management and supervision. These courses help the students to understand themselves and their fellow students and to develop attitudes necessary for success in the field.

WORK EXPERIENCE REQUIREMENTS

The department requires that all students obtain an approved job in the food industry for a minimum of 320 hours of employment during the summer between the first and second years of the program. This is to enhance skill development and improve career advancement after graduation.

OCCUPATIONAL OPPORTUNITIES

- Caterer
- Entrepreneur
- Line Cook
- Garde Mange
- Restaurant Cook
- Broiler Cook
- Hospital Dietary
- Food Service Steward
- Short Order Cook
- Chef
- Food Sales Rep
- Assistant Food Management Trainee
- Health Care Food Supervisor
- Assistant Food Manager
- Cafeteria Supervisor
- Dining Room Manager
- Institutional Food Cook
- Food Marketing Rep

Upon successful completion of this program, students may continue in Alfred State's BBA program in technology management.

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 90 percent are employed; 10 percent transferred to continue their education.

EXPENSES

In addition to regular college expenses, the student must purchase a probe thermometer, calculator, and uniform package from the Alfred State College Campus Bookstore. Uniforms may cost approximately $125-145, depending on the size ordered. All culinary arts students are required to purchase a meal plan. First semester textbooks cost approximately $500 and approximately $100 each succeeding semester.

RELATED PROGRAMS

Culinary Arts: Baking, Production and Management

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Applicants in the culinary arts program must meet the following physical requirements:

- Perform lab functions while standing on their feet for extended periods of time (up to five hours) daily.
- Be proficient in reading (for guest checks, recipes, and instructional manuals) and mathematics (for recipe conversion, cost control, and calculations associated with food production and service).
- Write with sufficient clarity for communication with faculty, kitchen personnel, and guests.
- Lift 40 pounds from floor to eye level.
- Orally communicate with people six to 10 feet away.
- Visually identify degree of product doneness.
- Walk on a slippery floor while carrying 40 pounds with caution and safety.
- Handle kitchen equipment, including knives, with dexterity and safety.

Recommended:
In-depth knowledge of basic math, reading, and writing skills.

CERTIFICATION OR LICENSURE

Students may earn sanitation certification from the Educational Foundation of the National Restaurant Association as part of the program.

CULINARY ARTS - AOS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
FDSR	1084	Sanitation & Food Safety	4
FDSR	1143	Menu Planning	3
FDSR	1373	Foods, Ingredients, and Products	3
FDSR	1478	Quantity Food Lab Unit I	8
			18
Second			
FDSR	2043	Fund of Nutrition	3
FDSR	2183	Purchasing Techniques	3
FDSR	2253	Hospitality Cost Control	3
FDSR	2479	Quantity Food Lab Unit II	9
			18
Third			
FDSR	3163	Furnishing & Equipment	3
FDSR	3253	Beverages	3
FDSR	3353	Hospitality Personnel Relations I	3
FDSR	3479	Quantity Food Lab Unit III	9
			18
Fourth			
FDSR	4032	Facilities Planning & Energy Conservation	2
FDSR	4163	Advanced Cuisine	3
FDSR	4255	Hospitality Personnel Relations II	5
FDSR	4478	Catering	8
			18

GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a “C” average. Note: students must pass 1478 before taking 2479, pass 2479 before taking 3479, and pass 3479 before taking 4478.

CULINARY ARTS: BAKING, PRODUCTION & MANAGEMENT

AOS Degree – Code #0423

To meet the demand for skilled bakers, the program incorporates 1,350 hours of hands-on production experience, of which approximately 80 percent is concentrated in bakery training. The classroom includes detailed instruction in methods, ingredients, measurements, controls, equipment, and merchandising. The production for breakfast, lunch, and dinner requirements is built into one daily schedule.

WORK EXPERIENCE REQUIREMENTS

The department requires that all students obtain an approved job in the baking industry for a minimum of 320 hours of employment during the summer between the first and second years of the program. This is to enhance skill development and improve career advancement after graduation.

OCCUPATIONAL OPPORTUNITIES

- Baker
- Caterer
- Pastry Chef
- Grocery Store Baker
- Commercial Baker & Management

Upon successful completion of this program, students may continue in Alfred State's BBA program in technology management.

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 63 percent are employed; 37 percent transferred to continue their education.

EXPENSES

In addition to the regular college expenses, the student must purchase decorating tips, a probe thermometer, calculator, and a uniform package from the Alfred State College Campus Bookstore. Uniforms may cost approximately $125-145, depending on the size ordered. All culinary arts: baking production & management students are required to purchase a meal plan. First semester textbooks cost approximately $500 and approximately $100 each succeeding semester.

RELATED PROGRAMS

Culinary Arts

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Applicants in the culinary arts: baking, production and management program must meet the following physical requirements:

- Perform lab functions while standing on their feet for extended periods of time (up to five hours) daily.
- Be proficient in reading (for guest checks, recipes, and instructional manuals) and mathematics (for recipe conversion, cost control, and calculations associated with food production and service).
- Write with sufficient clarity for communication with faculty, kitchen personnel, and guests.
- Lift 40 pounds from floor to eye level.
- Orally communicate with people six to 10 feet away.
- Visually identify degree of product doneness.
- Walk on a slippery floor while carrying 40 pounds with caution and safety.
- Handle kitchen equipment, including knives, with dexterity and safety.

Recommended: In-depth knowledge of basic math, reading, and writing skills.

CERTIFICATION OR LICENSURE

Students may earn sanitation certification from the Educational Foundation of the National Restaurant Association as part of the program.

CULINARY ARTS: BAKING, PRODUCTION & MANAGEMENT - AOS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
FDSR	1084	Sanitation & Food Safety	4
FDSR	1153	Intro to Baking	3
FDSR	1373	Foods, Ingredients & Products	3
FDSR	1578	Quantity Food & Baking Lab Unit I	8
			18
Second			
FDSR	2043	Fund of Nutrition	3
FDSR	2183	Purchasing Techniques	3
FDSR	2253	Hospitality Cost Control	3
FDSR	2489	Quantity Food & Baking Lab Unit II	9
			18
Third			
FDSR	3163	Furnishing & Equip	3
FDSR	3293	Intermediate Baking	3
FDSR	3353	Hospitality Personnel Relations I	3
FDSR	3489	Baking Lab Unit III	9
			18
Fourth			
FDSR	4043	Advanced Baking	3
FDSR	4255	Hospitality Personnel Relations II	5
FDSR	4488	Baking Lab Unit IV	8
FDSR	4032	Facilities Planning & Energy Conservation	2
			18

GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is

equivalent to a “C” average. Note: students must pass 1578 before taking 2489, pass 2478 before taking 3489, and pass 3489 before taking 4488.

DIGITAL MEDIA AND ANIMATION AAS

AAS Degree – Code #5606
BS Degree – Code #2018

The emerging field of computer imaging and animation is impacting virtually every industry and profession. The digital media and animation program provides students with a broad range of technical, creative, and problem-solving skills to facilitate their employment in new media and animation. At the core of the program is an eight-semester sequence of studio courses that enhances individual artistic creativity and provides instruction in the traditional arts and industry standard computer graphics software. Students are required to enter a minimum of two film festivals to meet graduation requirements.

A laptop computer is required for students entering the digital media and animation program. Laptop specifications are available at www.alfredstate.edu/academics/macbook-pro.

OCCUPATIONAL OPPORTUNITIES

- Computer Art
- Interactive Media
- Computer Animation
- Fine Art

EMPLOYMENT STATISTICS

AAS: Employment and transfer rate of 100 percent – 20 percent are employed; 80 percent transferred to continue their education.

RELATED PROGRAMS

Computer Technology
Information Technology: Web Development

ENTRANCE REQUIREMENTS/RECOMMENDATIONS (AAS Degree)

Required: Algebra, Geometry (Math A)
Recommended: Algebra 2/Trigonometry (Math B)

DIGITAL MEDIA AND ANIMATION – AAS

TYPICAL FOUR-SEMESTER PROGRAM

First			
CIAT	1403	Computer Animation I	3
CIAT	1423	Intro to Visual Communication	3
CIAT	1413	Foundations: Form/Space	3
CIAT	1333	Survey of Anim & Vis Effects	3
COMP	1503	Freshman Composition	3
			15
Second			
CIAT	2403	Computer Animation II	3
FNAT	2423	3D Design/Color	3
FNAT	2433	Figure and Motion	3
FNAT	1313	Art History	3
LITR	2603	Introduction to Literature	3
	xxx3	Gen Ed/Math Elective	3
			18
Third			
CIAT	3403	Computer Animation III	3
CIAT	3203	Interactive Authoring	3
SOCI	1163	General Sociology	3
	xxx3	Gen Ed/LAS Elective	3
	xxx3	Gen Ed/Natural Sciences Elective	3
			15
Fourth			
CIAT	4443	Computer Animation IV	3
CIAT	4103	Interactive Design	3
SPCH	1083	Effective Speaking	3
FNAT	3513	Art History II	3
LITR	2813	Intro to Film	3
COMP	3703	Technical Writing I	3
			18

Entry level of student into math and composition/literature sequences is a function of student's high school preparation and mathematics and English placement examinations.

Minimum of "C" is required for CIAT 1403, CIAT 2403, CIAT 3403, and CIAT 4414. A 2.75 GPA in core courses is required to go from AAS to BS degree. A portfolio submission is required of all continuing students not meeting this requirement.

Also required - One unit of physical education.

DIGITAL MEDIA AND ANIMATION BS

AAS Degree – Code #5606
BS Degree – Code #2018

The emerging field of computer imaging and animation is impacting virtually every industry and profession. The digital media and animation program provides students with a broad range of technical, creative, and problem-solving skills to facilitate their employment in new media and animation. At the core of the program is an eight-semester sequence of studio courses that enhances individual artistic creativity and provides instruction in the traditional arts and industry standard computer graphics software. Students are required to enter a minimum of two film festivals to meet graduation requirements.

A laptop computer is required for students entering the digital media and animation program. Laptop specifications are available at www.alfredstate.edu/academics/macbook-pro.

OCCUPATIONAL OPPORTUNITIES

- Computer Art
- Interactive Media
- Computer Animation
- Fine Art

EMPLOYMENT STATISTICS

(BS) Employment and transfer rate of 100 percent – 100 percent employed.

RELATED PROGRAMS

- Computer Technology
- Information Technology: Web Development

ENTRANCE REQUIREMENTS/RECOMMENDATIONS (BS Degree)

Required: Algebra, Geometry (Math A), SAT and/or ACT scores with a recommended combined SAT score of 1000 (critical reading and math) or a composite ACT score of 21.
Recommended: Algebra 2/Trigonometry (Math B)

DIGITAL MEDIA AND ANIMATION - BS DEGREE

TYPICAL EIGHT-SEMESTER PROGRAM

First			
CIAT	1403	Computer Animation I	3
CIAT	1423	Intro to Visual Communication	3
CIAT	1413	Foundations: Form/Space	3
CIAT	1333	Survey of Anim & Vis Effects	3
COMP	1503	Freshman Composition	3
			15

Second			
CIAT	2403	Computer Animation II	3
FNAT	2423	3D Design/Color	3
FNAT	2433	Figure and Motion	3
FNAT	1313	Art History	3
LITR	2603	Introduction to Literature	3
	xxx3	Gen Ed/Math Elective	3
			18

Third			
CIAT	3403	Computer Animation III	3
CIAT	3203	Interactive Authoring	3
SOCI	1163	General Sociology	3
	xxx3	Gen Ed/LAS Elective	3
	xxx3	Gen Ed/Natural Sciences Elective	3
			15

Fourth			
CIAT	4443	Computer Animation IV	3
CIAT	4103	Interactive Design	3
SPCH	1083	Effective Speaking	3
FNAT	3513	Art History II	3
LITR	2813	Intro to Film	3
PSYC	1013	General Psychology	3
			18

Entry level of student into math and composition/literature sequences is a function of student's high school preparation and mathematics and English placement examinations.
Minimum of "C" is required for CIAT 1403, CIAT 2403, CIAT 3403, and CIAT 4414. A 2.75 GPA in core courses or comparable courses at another institution is required to guarantee admission into CIAT 5103, 5403 and 5603. A portfolio submission is required of all continuing or transfer students not meeting this requirement.

TYPICAL FIVE- THROUGH EIGHT-SEMESTER PROGRAM

Fifth			
CIAT	5103	Production I	3
CIAT	5603	Interactive Media	3
CIAT	5403	Advanced Modeling	3
COMP	5703	Technical Writing II	3
SOCI	5213	Sci Tech and Society	3
			15

Sixth			
CIAT	6103	Production II	3
CIAT	6203	Motion Graphics	3
CIAT	6403	Adv. Texturing, Light and Render.	3
	xxx3	Gen Ed/LAS Elective (Upper Level)	3
	xxx3	Gen Ed/Western Civilization OR Foreign Language	3
			15

Seventh			
CIAT	7106	Senior Studio Project I	6
CIAT	7103	Community Service Project	3
	xxx3	Gen Ed/LAS Elective	3
	xxx3	Gen Ed/LAS Elective	3
			15

Eighth			
CIAT	8106	Senior Studio Project II	6
CIAT	8103	Portfolio II	3
	xxx3	Gen Ed/LAS Elective	3
	xxx3	Gen Ed/American History OR Other World Civilization	3
			15

Students must complete at least one course from 7 of the 10 SUNY General Education silos.
Minimum of "C" is required for CIAT 1403, 1423, 1413, 1333, 2403, 3403, 3203, 4414, 4423, 5103, 5203, 5403, 6103, 6203, 6403, 7106, 7103, 8106, 8103.
Minimum of "C" is also required for FNAT 2423, 2433, 1313, 3513.
Also required - One unit of physical education.

DRAFTING/CAD

Code # 0450

Karen M. Young, Program Coordinator
E-mail address: youngkk@alfredstate.edu

The drafting/CAD (computer-aided drafting) program provides students with the CAD skills and knowledge to qualify for entry-level positions in a wide variety of industries.

During the first year, students focus on gaining a thorough understanding of the fundamentals of CAD drafting, tolerancing, manufacturing processes, and mathematics.

The senior year is devoted to a specific drafting/CAD discipline which the student selects: model building & process piping drawing or technical illustration.

OCCUPATIONAL OPPORTUNITIES

- Mechanical Drafter
- Controls Drafter
- Drafting Manager
- Field or Service Engineer
- CAD Operator
- Designer
- Mechanical Designer
- Parts Analyst
- Sales Representative

Upon successful completion of this program, students may continue in Alfred State's BBA program in technology management.

RELATED PROGRAMS

- CAD/CAM Technology
- Drafting/CAD: Model Building & Process Piping Drawing
- Drafting/CAD: Technical Illustration
- Mechanical Engineering Technology

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Applicants in any of the drafting/CAD programs must meet the following physical requirements:

- Must be able to visually read computer monitor or laptop.
- Must be capable of using digitizing equipment.
- Must have good hand/eye coordination to operate the above.

Recommended: Algebra (Math A)

The first year will focus on gaining a thorough understanding of the fundamentals of traditional as well as CAD drafting. This will include production of industrially correct detail drawings, assembly drawings, and weldment drawings.

A laptop computer is required for students entering the drafting/CAD program. Laptop specifications are available at www.alfredstate.edu/required-laptops.

DRAFTING/CAD - AOS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
DCAD	1205	Intro to Industrial Dftg	5
DCAD	1305	Industrial Drafting I	5
DCAD	1405	Industrial Drafting II	5
DCAD	1053	Technical Calculations I	3
			18
Second			
DCAD	2205	Industrial Drafting III	5
DCAD	2305	Welding Drawing	5
DCAD	XXX5	Technical Elective	5
DCAD	2063	Technical Calculations II	3
			18
Third			
DCAD	3024	Layout & Detail	4
DCAD	3044	Fluid Power	4
DCAD	3104	Advanced Mech Layout	4
DCAD	3023	GD&T	3
DCAD	2053	Intro to Unigraphics	3
			18
Fourth			
DCAD	4125	Process Piping I	5
DCAD	xxx5	Technical Elective	5
DCAD	4335	CNC Machine Program'g	5
DCAD	4003	Senior Project	3
			18
Second Semester Electives:			
DCAD	2805	Draft'g for Res Construction	5
DCAD	4155	Technical Illustration I	5
Fourth Semester Electives:			
DCAD	4225	Process Piping II*	5
DCAD	4155	Technical Illustration	5
DCAD	2805	Draft'g for Res Construction	5
DCAD	4900	Industrial Application	5

*Prerequisite: DCAD 4125 process piping I

GRADUATION REQUIREMENTS

Students are required to earn a grade of "C" or higher in technical calculations I and II (DCAD 1053 & DCAD 2063) to be eligible for graduation. (Articulation is available in this area.) Articulation agreements are also available for 2805 drafting for residential construction.

DRAFTING/CAD: MODEL BUILDING & PROCESS PIPING DRAWING

AOS Degree – Code #0419

Karen M. Young, Program Coordinator
E-mail address: youngkk@alfredstate.edu

Process piping is a specialized area of drafting which uses a language of its own to transmit necessary information for the construction of a project. To achieve this, each student gains the necessary understanding of piping processes for industries such as petroleum distillation, air separation, paper pulping, and chemical processes.

OCCUPATIONAL OPPORTUNITIES

- Pressure Vessel Designer
- Sales Representative
- Checker
- Field or Service Engineer
- Structural Detailer
- Process Technician
- Drafting Manager
- Process Piping Drafter
- Designer
- CAD Drafter
- Piping Designer
- Controls Drafter
- Parts Analysts

Upon successful completion of this program, students may continue in Alfred State's BBA program in technology management.

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 88 percent are employed; 12 percent transferred to continue their education.

RELATED PROGRAMS

- Architectural Engineering Technology
- CAD/CAM Technology
- Mechanical Design Engineering Technology

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Applicants in any of the drafting/CAD programs must meet the following physical requirements:

- Must be able to visually read computer monitor or laptop.
- Must be capable of using digitizing equipment.
- Must have good hand/eye coordination to operate the above.

Recommended: Algebra (Math A)

A laptop computer is required for students entering this program. Laptop specifications are available at www.alfredstate.edu/required-laptops.

DRAFTING/CAD–MODEL BUILDING & PROCESS PIPING DRAWING - AOS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
DCAD	1205	Intro to Industrial Dftg	5
DCAD	1305	Industrial Drafting I	5
DCAD	1405	Industrial Drafting II	5
DCAD	1053	Technical Calculations I	3
			18
Second			
DCAD	2205	Industrial Drafting III	5
DCAD	2305	Welding Drawing	5
DCAD	XXX5	Technical Elective	5
DCAD	2063	Technical Calculations II	3
			18
Third			
DCAD	3024	Layout & Detail	4
DCAD	3044	Fluid Power	4
DCAD	3104	Advanced Mech Layout	4
DCAD	3023	GD&T	3
DCAD	2053	Intro to Unigraphics	3
			18
Fourth			
DCAD	4125	Process Piping I	5
DCAD	xxx5	Technical Elective	5
DCAD	4335	CNC Machine Program'g	5
DCAD	4003	Senior Project	3
			18
Second Semester Electives:			
DCAD	2805	Draft'g for Res Construction	5
DCAD	4155	Technical Illustration I	5
Fourth Semester Electives:			
DCAD	4225	Process Piping II*	5
DCAD	4155	Technical Illustration	5
DCAD	2805	Draft'g for Res Construction	5
DCAD	4900	Industrial Application	5

*Prerequisite: DCAD 4125 process piping I

GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average. Students are also required to have earned grades of "C" or better in technical calculations I & II. (Articulation is available in this area.)

A "C" or better for DCAD 4003 senior project is required.

DRAFTING/CAD: TECHNICAL ILLUSTRATION

AOS Degree – Code #0418

Karen Young, Program Coordinator
E-mail address: youngkk@alfredstate.edu

Students enrolled in the technical illustration curriculum will enhance their drafting/CAD skills for various graphic publications.

Assignments apply 2D or 3D computer methods to create print-ready publications utilizing isometric exploded illustrations for instructions, Web sites, and pictorial graphic presentations.

Graduates can explore career paths and build their skills in drafting/CAD and technical illustration areas.

OCCUPATIONAL OPPORTUNITIES

The occupational opportunities are unique in the drafting/CAD: technical illustration program, as the graduate has an opportunity for employment as an entry-level technical illustrator as well as opportunities in CAD occupations such as:

- Drafter
- Designer
- Purchaser/Sales Representative
- Checker
- Drafting Manager
- Field Service Engineer
- CAD Drafter
- Graphic Artist
- Multi-Media Designer
- Commercial Artist

Upon successful completion of this program, students may continue in Alfred State's BBA program in technology management.

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 100 percent are employed.

RELATED PROGRAMS

- CAD/CAM Technology
- Drafting/CAD: Model Building & Process Piping Drawing
- Mechanical Design Engineering Technology

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Applicants in any of the drafting/CAD programs must meet the following physical requirements:

- Must be able to visually read computer monitor or laptop.
- Must be capable of using digitizing equipment.
- Must have good hand/eye coordination to operate the above.

Recommended: Algebra (Math A)

A laptop computer is required for students entering this program. Laptop specifications are available at www.alfredstate.edu/required-laptops.

DRAFTING/CAD: TECHNICAL ILLUSTRATION - AOS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
DCAD	1205	Intro to Industrial Dftg	5
DCAD	1305	Industrial Drafting I	5
DCAD	1405	Industrial Drafting II	5
DCAD	1053	Technical Calculations I	3
			18
Second			
DCAD	2205	Industrial Drafting III	5
DCAD	2305	Welding Drawings	5
DCAD	XXX5	Technical Elective	5
DCAD	2063	Technical Calculations II	3
			18
Third			
DCAD	3024	Layout & Detail	4
DCAD	3044	Fluid Power	4
DCAD	3104	Advanced Mech Layout	4
DCAD	3023	GD&T	3
DCAD	2053	Intro to Unigraphics	3
			18
Fourth			
DCAD	4125	Process Piping I	5
DCAD	xxx5	Technical Elective	5
DCAD	4335	CNC Machine Program'g	5
DCAD	4003	Senior Project	3
			18
Second Semester Electives:			
DCAD	2805	Draft'g for Res Construction	5
DCAD	4155	Technical Illustration I	5
Fourth Semester Electives:			
DCAD	4225	Process Piping II*	5
DCAD	4155	Technical Illustration	5
DCAD	2805	Draft'g for Res Construction	5
DCAD	4900	Industrial Application	5

*Prerequisite: DCAD 4125 process piping I

GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average. Students are also required to have earned grades of "C" or better in technical calculations I & II.

(Articulation is available in this area.)

ELECTRICAL CONSTRUCTION AND MAINTENANCE ELECTRICIAN

AOS Degree – Code #0498

This program provides in-depth instruction in the theories and principles of electricity. Principles of operation for electrical devices and equipment, and correct and safe operation of tools are covered. The student will study and learn to interpret and apply the requirements of the National Electric Code for designing electrical layouts, installation methods, and the maintenance, trouble shooting, and repair of electrical circuits and equipment.

During their two years of study, students will receive instruction and hands-on training in the laboratory for the following areas of specialization.

Residential Wiring	Magnetic Motor & Circuit Control
Raceway Systems	Programmable Logic Controllers (PLC)
Lighting Systems	Industrial/Commercial Wiring
Alarm Systems	Single & 3-Phase Electrical Power Systems
1ø & 3ø Motors	Hydraulics
Hazardous Location Wiring	Pneumatics
Process Measurements	

Practical (hands-on) application of the classroom theory is the main emphasis of the laboratory work. Electrical construction and maintenance electrician students assist in the design and installation of the electrical installations of many projects both on and off campus. Approximately one-third of lab time is spent on actual work sites, gaining real-life work experience.

Senior electrical students create completely automated projects in the lab using PLCs, pneumatics, electronics, and process controls.

INTERNSHIP OPPORTUNITIES

Summer internships are available to selected students through the International Brotherhood of Electrical Workers, Village of Wellsville Electric Department, and Kodak in Rochester, allowing students to gain additional, valuable trade experience.

TRANSFER OPPORTUNITIES

The following local chapters of the International Brotherhood of Electrical Workers (IBEW) have signed articulation agreements with the electrical construction and maintenance electrician program at Alfred State College.

IBEW Local 86, Rochester	IBEW Local 237, Niagara Falls
IBEW Local 139, Elmira	IBEW Local 241, Ithaca

The above IBEW Locals have agreed to award qualified graduates from Alfred State College's electrical construction and maintenance electrician program, advanced placement in their apprenticeship programs. The degree of advanced placement to be awarded will be determined after review by the joint apprenticeship committee and after all conditions of the joint apprenticeship standards have been met.

Upon successful completion of this program, students may continue in Alfred State's BBA program in technology management.

OCCUPATIONAL OPPORTUNITIES

- Designer
- Installer
- Construction Site Electrician
- Electrical Estimator
- Electrical Inspector
- PLC Programmer
- Salesperson
- Electrical Trade Union or Non-Union Apprentice
- Electric Motor Control Technician
- Private Contractor (Residential, Commercial)
- Industrial Maintenance Electrician
- Technical Field Representative
- Wholesale Representative
- Electrical Technician
- Wind Turbine Technician/Installer
- Photovoltaic Technician/Installer

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 82 percent are employed; 18 percent transferred to continue their education.

RELATED PROGRAMS

- Building Trades: Building Construction
- Electrical Engineering Technology
- Electromechanical Engineering Technology

SCHOLARSHIPS

The Margaret Pfuntner Scholarship is awarded to a third-semester student.

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Applicants in the electrical construction and maintenance electrician program must meet the following physical requirements:

- Must be able to visually translate information on analog or digital meters and other test equipment.
- Must be able to lift 50 pounds to eye level.
- Must be able to communicate orally with a person six-10 feet away.
- Must be able to read and decipher information found in technical manuals.
- Must be able to adhere to and perform all safety requirements.

Recommended: Algebra (Math A); good writing and reading comprehension skills

ELECTRICAL CONSTRUCTION & MAINTENANCE ELECTRICIAN - AOS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
ELTR	1156	Residential Wiring I	6
ELTR	1166	Res Wiring Lab I A	6
ELTR	1176	Res Wiring Lab I B	6
			18
Second			
ELTR	2156	Residential Wiring II	6
ELTR	2166	Res Wiring Lab II A	6
ELTR	2176	Res Wiring Lab II B	6
			18
Third			
ELTR	3156	Electrical Power Systems	6
ELTR	3326	Magnetic Motor Controls	6
ELTR	3306	Alarms & Special Systems	6
			18
Fourth			
ELTR	3336	Photovoltaic & Wind Turbine Systems	6
ELTR	3356	Programmable Controls for Industrial Automation	6
ELTR	3326	Industrial Automation & Process Controls	6
			18

Note: Seniors will rotate through the six courses listed in the third and fourth semesters. These six are taught both semesters.

GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a “C” average.

ELECTRICAL ENGINEERING TECHNOLOGY

AAS Degree – Code #0699
BS Degree – Code #0216

The electrical engineering technology programs provide the skills and occupational competence necessary for entry into the field as an electronic or electrical technician or technologist. The technician works with and is responsible for all the electronic equipment in the field. Thus, in addition to a firm foundation in electrical circuit concepts, a technician must have laboratory experience.

The electrical engineering technology programs emphasize basic knowledge and skills during the first year of the program. Studies include fundamental DC and AC circuit analysis and digital circuit logic to develop skills in use of electronic test equipment and in use of tools and printed circuit fabrication equipment. Laboratory experiments supplement classroom instruction and problem solving. Computer problem solving and simulation aid in course instruction.

The second year of the associate degree program continues the study of fundamental electronic circuits. The areas of study include microcontroller circuitry and programming, electronic communication circuits and systems, and IC circuit fabrication on silicon wafers.

Through a recent NYS Science, Technology, and Academic Research (NYSTAR®) grant opportunity, Alfred State College has implemented a new semiconductor manufacturing laboratory cleanroom facility. The new microelectronics laboratory has been equipped with Modu-Lab® semiconductor device manufacturing equipment, which gives students realistic exposure to the semiconductor planer processes, the technology in which integrated circuits or "chips" are manufactured. Integrated circuits are extremely small circuits fabricated on a monolithic semiconductor substrate. The rapid advances in the number of transistors per chip have led to integrated circuits with increases in capability and performance and have changed virtually every aspect of our lives over the past three decades. Oxidation, diffusion, photolithography, etch, and vapor deposition stations allow the students the opportunity to design, fabricate, and test their own simple integrated circuit devices while gaining experience in microelectronic fabrication techniques. The understanding of general processes gained through laboratory experiences will prepare students to either continue their education in the microelectronics field or work in modern high-tech industrial laboratories found at companies like Advanced Micro Devices (AMD), Kionix, Micron Technology, Motorola, National Semiconductor, and Texas Instruments to name a few. Students interested in a career in semiconductor manufacturing technology should consult with their adviser regarding selection of appropriate elective course work during their first semester.

Both electrical engineering technology programs are accredited by the Technology Accreditation Commission, Accreditation Board for Engineering Technology, Inc. (TAC/ABET), 111 Market Place – Suite 1050, Baltimore, MD 21202; (410) 347-7700.

A laptop computer is required for students entering the electrical engineering technology programs. Laptop specifications are available at www.alfredstate.edu/required-laptops. Some courses may require specialized tools and/or electronic components.

Program Educational Objectives

The AAS in electrical engineering technology program produces graduates who:

- Apply knowledge of mathematics and science using critical thinking and creative skills to solve electrical engineering problems;
- Function professionally with effective communication and with ethical responsibility as individuals and as members of a multidisciplinary team;
- Continuously improve and engage in life-long learning and adapt to a technologically advancing society
- Apply knowledge of contemporary issues and anticipate the impact of electrical engineering solutions on industry and the general public;
- Use current techniques, skills, and tools necessary to support electrical engineering practice.

In addition to the AAS program educational objectives, the BS in electrical engineering technology program produces graduates who:

- Design electrical engineering systems, components, or processes to meet industry needs;
- Design electrical engineering experiments, as well as analyze and interpret data to support the problem-solving process and project design.

OCCUPATIONAL OPPORTUNITIES

- Electrical or Electronics Technician (two-year)
- Electrical or Electronics Technologist (four year)
- Communications Technician/Technologist

- Computer Technician/Technologist
- Semiconductor Manufacturing Technician/Technologist
- Electrical Power Technician/Technologist

EMPLOYMENT STATISTICS

Employment and transfer rate:
Electrical Engineering Technology (AAS degree): 100 percent transferred to continue their education.
Electrical Engineering Technology (BS degree): 100 percent are employed.

RELATED PROGRAMS

Computer Engineering Technology
Computer & Network Technician
Electrical Construction and Maintenance Electrician
Engineering Science

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/Trigonometry (Math A and B)
Recommended: Physics

ELECTRICAL ENGINEERING TECHNOLOGY - AAS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
ELET	**1001**	**Seminar**	1
ELET	**1202**	**Intro to Electrical Technology**	2
ELET	**1111**	**Digital Logic Lab**	1
ELET	**1133**	**Digital Logic**	3
MECH	**1603**	**Graphics/CAD**	3
COMP	1503	Freshman Composition	3
MATH	1033	College Algebra	3
HPED	xxx1	Phys Ed Elective	1
			17

Second			
ELET	**1103**	**Circuit Theory I**	3
ELET	**1151**	**Circuits Theory Lab**	1
ELET	**1143**	**Electronic Fabrication**	3
MATH	2043	College Trigonometry	3
PHYS	1024	General Physics I	4
LITR	xxx3	Gen Ed - Literature Elective	3
			17

Third			
ELET	**2103**	**Electronics I**	**3**
ELET	**2151**	**Electronics I Lab**	**1**
ELET	**2124**	**Electrical Power Circuits**	**4**
ELET	**2143**	**Embedded Controller Fund**	**3**
MATH	1063	Technical Calculus	3
PHYS	2023	General Physics II	3
			17

Fourth			
ELET	**3103**	**Electronics Theory II**	3
ELET	**3151**	**Electronics Theory II Lab**	1
ELET	**4224**	**Alternative Energy Generation**	4
ELET	**4154**	**Microelectronics**	4
SPCH	1083	Effective Speaking	3
	xxx3	Gen Ed Elective	3
			18

ASSOCIATE DEGREE GRADUATION REQUIREMENTS

- 69 semester credit hours
- 28 semester credit hours of liberal arts and sciences from at least five of the General Education content groups: mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilization, arts, foreign language, and basic communications (must include COMP 1503)
- 2.0 cumulative grade point average, and 2.0 grade point average in major courses (ELET, EMET)
- Approval of department faculty

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B), SAT and/or ACT scores with a recommended combined SAT score of 1000 (critical reading and math) or a composite ACT score of 21.
Recommended: Physics

CERTIFICATION OR LICENSURE

The bachelor of science degree in engineering technology is recognized as a “professional degree” that qualifies for experience/education credit toward New York Professional Engineering Licensure. Graduates from Alfred State’s program are allowed six years of the required 12 years of education/experience credit and are eligible to take the Fundamentals of Engineering (FE), formerly called Engineer-in-Training (EIT), examination upon graduation.

ELECTRICAL ENGINEERING TECHNOLOGY – BS Degree

TYPICAL FIVE- THROUGH EIGHT-SEMESTER PROGRAM

Fifth			
CISY	**5123**	**Scientific Program in C & C++**	**3**
EMET	**5004**	**Instrumentation**	**4**
CHEM	5013	Applied Chem Principles	3
COMP	5703	Technical Writing II	3
MATH	2074	Technical Calculus II	4
			17

Sixth			
ELET	**2163**	**Data Communications**	3
ELET	**4143**	**Electrical Machines & Controls**	3
ELET	**6004**	**Advanced Power System**	4
ELET	**7404**	**Embedded Systems Applications**	4
MATH	6114	Differential Equations	4
			18

Seventh			
BSET	**7001**	**Senior Seminar & Project Design**	1
ELET	**6014**	**Microelectromechanical Systems**	4
MATH	7113	Economic Analysis for Engr Tech	3
MATH	7123	Statistics for Engineering Tech	3
PHYS	8013	Modern Physics	3
	xxx3	Gen. Ed. Elective	3
			17

Eighth			
BSET	**8006**	**Senior Internship/Project**	6
EMET	**6004**	**Feedback Control Systems**	4
	xxx3	Gen Education Elective	3
	xxx3	Gen Education Elective	3
			16

BACHELOR OF SCIENCE DEGREE GRADUATION REQUIREMENTS

- 138 semester credit hours
- 60 semester credit hours of liberal arts and sciences from at least seven of the General Education content groups: mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilization, arts, foreign language, and basic communications (must include COMP 1503)
- Minimum of 45 hours upper division
- Minimum of 24 hours upper division in major
- Minimum of 30 hours upper division in residence
- 2.0 cumulative grade point average, and 2.0 grade point average in major courses (BSET, ELET, EMET, CISY)
- Approval of department faculty

Courses which repeat or significantly overlap courses taken in the student's associate degree program cannot be taken for upper level credit. If the associate degree covered the subject matter in one of the required baccalaureate courses, a different course must be substituted and approved by the faculty adviser.

ELECTROMECHANICAL ENGINEERING TECHNOLOGY

AAS Degree – Code #0557
BS Degree – Code # 0236

Electromechanical engineering technology provides a thorough understanding of both electrical-electronics and mechanical principles, together with the problems associated with combining electrical and mechanical components into electromechanical devices or systems. Throughout the program, emphasis is placed on electromechanical system control for automated processes. The program includes knowledge of electrical-electronic apparatus, circuitry, instrumentation, computers, mechanisms and machine elements, and manufacturing processes. A thorough background in programming, development, and application of microprocessors together with digital or analog components enables graduates to work with the development of new products or systems. This program is for individuals with an interest in devices or machines and a desire to devise better, more efficient ways of doing things. A current emphasis in the program is robotics and the application of robotics in developing automated manufacturing systems.

Both electromechanical engineering technology programs are accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (TAC/ABET), 111 Market Place – Suite 1050, Baltimore, MD 21202; (410) 347-7700.

A laptop computer is required for students entering the electromechanical engineering technology programs. Laptop specifications are available at www.alfredstate.edu/required-laptops. Some courses may require specialized tools and/or electronic components.

Program Educational Objectives

The AAS in electromechanical engineering technology program produces graduates who:
- Apply knowledge of mathematics and science using critical thinking and creative skills to solve electromechanical engineering problems;
- Function professionally with effective communication and with ethical responsibility as individuals and as members of a multidisciplinary team;
- Continuously improve and engage in life-long learning and adapt to a technologically advancing society;
- Apply knowledge of contemporary issues and anticipate the impact of electromechanical engineering solutions on industry and the general public;
- Use current techniques, skills, and tools necessary to support electromechanical engineering practice.

In addition to the AAS program educational objectives, the BS in electromechanical engineering technology program produces graduates who:
- Design electromechanical engineering systems, components, or processes to meet industry needs;
- Design electromechanical engineering experiments, as well as analyze and interpret data to support the problem solving process and project design.

OCCUPATIONAL OPPORTUNITIES

- Technician (two-year)/Technologist (four-year)
- Field Service Representative
- Research and Development Technician/Technologist
- Design-Development Technologist
- Equipment Maintenance or Repair Representative

EMPLOYMENT STATISTICS

Employment and transfer rate:
Electromechanical Engineering Technology (AAS degree): 100 percent - 100 percent transferred to continue their education
Electromechanical Engineering Technology (BS degree): 100 percent – 50 percent are employed; 50 percent transferred to continue their education

RELATED PROGRAMS

- CAD/CAM Technology
- Electrical Engineering Technology
- Mechanical Design Engineering Technology
- Mechanical Engineering Technology

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required:	Algebra, Geometry, Algebra2/Trigonometry (Math A and B)
Recommended:	Physics

ELECTROMECHANICAL ENGINEERING TECHNOLOGY - AAS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
ELET	**1001**	**Seminar**	1
ELET	**1202**	**Intro to Electrical Tech**	2
ELET	**1111**	**Digital Logic Lab**	1
ELET	**1133**	**Digital Logic**	3
MECH	**1603**	**Graphics CAD 1**	3

COMP	1503	Freshman Composition	3
MATH	1033	College Algebra	3
HPED	xxx1	Phys Ed Elective	1
			17

Second

ELET	**1103**	**Circuit Theory I**	3
ELET	**1151**	**Circuits Theory Lab**	1
ELET	**1143**	**Electronic Fabrication**	3
MATH	2043	College Trigonometry	3
PHYS	1024	General Physics I	4
LITR	xxx3	Gen. Ed. - Literature Elective	3
			17

Third

ELET	**2103**	**Electronics Theory I**	3
ELET	**2151**	**Electronics I Lab**	1
ELET	**2143**	**Embedded Controller Fund**	3
MECH	**3113**	**Statics**	3
MECH	**3223**	**Mechanical Design Principles**	3
MATH	1063	Technical Calculus I	3
			16

Fourth

MECH	1643	Manufacturing Processes	3
MECH	4023	Dynamics	3
MECH	4223	Mechanical Systems Design	3
PHYS	2023	General Physics II	3
SPCH	1083	Effective Speaking	3
	xxx3	Gen. Ed. Elective	3
			18

Also required: One unit of physical education.

ASSOCIATE DEGREE GRADUATION REQUIREMENTS

- 68 semester credit hours in program as listed above
- 28 semester credit hours of liberal arts and sciences from at least five of the General Education content groups: mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilization, arts, foreign language, and basic communications (must include COMP 1503)
- 2.0 cumulative grade point average, and 2.0 grade point average in major courses (ELET, EMET, CISY)
- Approval of department faculty

ENTRANCE REQUIREMENTS/RECOMMENDATIONS (BS)

Required: Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B), SAT and/or ACT scores with a recommended combined SAT score of 1000 (critical reading and math) or a composite ACT score of 21.

Recommended: Physics

ELECTROMECHANICAL ENGINEERING TECHNOLOGY – BS Degree

TYPICAL FIVE- THROUGH EIGHT-SEMESTER PROGRAM

Fifth

CISY	**5123**	**Scientific Prog in C & C++**	3
EMET	**5004**	**Instrumentation**	4
MECH	**5334**	**Mechanics of Materials**	4
COMP	5703	Technical Writing II	3
MATH	2074	Technical Calculus II	4
			18

Sixth

ELET	**4143**	**Electrical Machines & Controls**	3
ELET	**7404**	**Embedded & Real Time Systems**	4
MECH	**4023**	**Mechanical Systems Design**	3
MECH	**8334**	**Theory of Machines**	4
MATH	6114	Differential Equations	4
			18

Seventh

BSET	**7001**	**Senior Seminar & Project Design**	1
CHEM	5013	Applied Chem Principles	3
MATH	7113	Economic Analysis for Engr Tech	3
MATH	7123	Statistics for Engineering Tech	3
PHYS	8013	Modern Physics	3
	xxx3	Gen. Ed. Elective	3
			16

Eighth

BSET	**8006**	**Senior Project/Internship**	6
EMET	**6004**	**Feedback Control Systems**	4
	xxx3	Gen Ed. Elective	3
	xxx3	Gen Ed. Elective	3
			16

BACHELOR OF SCIENCE DEGREE GRADUATION REQUIREMENTS

- 136 semester credit hours in eight-semester program
- 60 semester credit hours of liberal arts and sciences from at least seven of the General Education content groups: mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilization, arts, foreign language, and basic communications (must include COMP 1503)
- Minimum of 45 hours upper division
- Minimum of 24 hours upper division in major
- Minimum of 30 hours upper division in residence
- 2.0 cumulative grade point average, and 2.0 grade point average in major courses (BSET, ELET, EMET, MECH, CISY)
- Approval of department faculty

Courses which repeat or significantly overlap courses taken in the student's associate degree program cannot be taken for upper level credit. If the associate degree covered the subject matter in one of the required baccalaureate courses, a different course must be substituted and approved by the faculty adviser.

CERTIFICATION OR LICENSURE

The bachelor of science degree in engineering technology is recognized as a “professional degree” that qualifies for experience/education credit toward New York Professional Engineering (PE) licensure. Graduates from Alfred State’s program are allowed six years of the required 12 years of education/experience credit and are eligible to take the Fundamentals of Engineering (FE), formerly called Engineer-in-Training (EIT), examination upon graduation.

ENGINEERING SCIENCE

AS Degree – Code #0530

Embracing a strong core of courses in chemistry, mathematics, and physics, and including basic English and humanities sequences, this program is augmented by basic engineering courses essential to all engineering disciplines.

The primary objective of this program is to provide a basic two years of study for students who wish to continue their education at the baccalaureate level in any of the engineering disciplines. With a baccalaureate degree, opportunities for employment exist in the civil, computer, electrical, environmental, mechanical, nuclear, chemical, and aerospace industries. Opportunity for advancement is excellent, and the financial return is high for those with ability and ambition.

Alfred State College is a member of the SUNY Two Year Engineering Science Association (TYESA). The purpose of this organization is to facilitate the transfer of engineering science graduates to New York State universities with accredited engineering programs. Recent Alfred State engineering science graduates have successfully transferred to Alfred University, Binghamton University, Clarkson University, Rensselaer Polytechnic Institute, Rochester Institute of Technology, NYS College of Ceramics at Alfred University, University at Buffalo, and Syracuse University.

Upon successful completion of this program, students may continue in Alfred State's BBA program in technology management.

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 12 percent are employed; 88 percent transferred to continue their education.

RELATED PROGRAMS

- Architectural Engineering Technology
- CAD/CAM Technology
- Computer Technology
- Construction Engineering Technology
- Electrical Engineering Technology
- Electromechanical Engineering Technology
- Mechanical Design Engineering Technology
- Mechanical Engineering Technology
- Surveying Engineering Technology

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B), Pre-calc; Physics or Chemistry

Recommended: Both Physics and Chemistry

ENGINEERING SCIENCE - AS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
COMP	1503	Freshman Composition	3
CHEM	1984	Chemical Principles I	4
ENGR	1201	Engr Science Orientation	1
MATH	1084	Calculus I	4
	xxx3	Gen Education Elective	3
	xxx3	Gen Education Elective	3
			18

Second			
PHYS	1064	Physics for Engr Science I	4
	xxx3	Technical Elective	3
	xxx3	Technical or Gen Ed Elective	3
LITR	xxx3	Gen Ed Literature Elective Preferred	3
MATH	2094	Calculus II	4
			17

Third			
ENGR	3213	Analytical Mechanics I	3
ENGR	4104	Circuit Analysis	4
	xxx3	Technical Elective	
or	xxx3	Gen Education Elective	3
ENGR	2201	Engineering Science Seminar	1
MATH	6114	Differential Equations	4
PHYS	2064	Physics for Engr Science II	4
			19

Fourth			
ENGR	3254	Systems Dynamics	4
ENGR	4213	Analytical Mechanics II	3
ENGR	4264	Engr Mechanics of Materials	4
MATH	6104	Multivariate & Vector Calc	4
	xxx3	Gen Education Elective	3
			18

Technical Electives:

BIOL	1104	General Biology I
BIOL	2204	General Biology II
CHEM	2984	Chemical Principles II
CHEM	3514	Organic Chemistry I
CHEM	4524	Organic Chemistry II
CISY	4003	Introduction to Data Structures
CISY	5123	Scientific Prog in C & C++
CIVL	1204	Surveying I
CIVL	2204	Surveying II
ELET	1133	Digital Logic
ELET	1111	Digital Logic Laboratory
ELET	1143	Electronic Fabrication
ELET	2143	Embedded Controller Fund
ELET	2153	Introduction to Microelectronics
ELET	3144	Embedded Controller Appl
ELET	4224	Alternative Energy Generation
MATH	7113	Econ Anal for Engr Tech
MATH	7123	Statistics for Engr Tech
MECH	1203	Materials Science
MECH	1423	Intro to Solid Modeling
MECH	1603	Graphics/CAD
MECH	1643	Manufacturing Processes
MECH	1641	Manufacturing Processes Lab
PHYS	8013	Modern Physics
		Elective (adviser approved)

Also required: One unit of physical education.

GRADUATION REQUIREMENTS

- 72 semester credit hours in program as listed above
- 40 semester credit hours of liberal arts and sciences from at least five of the General Education content groups: mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilization, arts, foreign language, and basic communications (must include COMP 1503). A total of three courses in the humanities and social sciences is recommended to enhance transfer.
- 2.0 cumulative grade point average, and department requirement of 2.0 grade point average in major courses (ENGR, ELET, CIVL, MECH, CISY)
- Approval of department faculty

ENTREPRENEURSHIP

AAS degree – Code #1362
Certificate – Code #1192

James Grillo, Program Coordinator
E-mail address: grillojj@alfredstate.edu

This program of study is designed to prepare the recent high school graduate, vocational student, displaced worker, or individual who is re-entering the work force for a career as a small business owner. Over the next decade, much of the growth in the American economy will come from the start-up and growth of small business. Many ask whether entrepreneurship can truly be taught or whether it is an innate characteristic. Research has shown that entrepreneurship is a process and many aspects of entrepreneurship are learned behaviors. Alfred State will teach the student those skills and behavior patterns necessary to contribute to personal and business success. Courses in accounting, sales, advertising, management, small business operations, leadership, and problem solving, as well as two courses in entrepreneurship will be taught in addition to the more traditional liberal arts and business courses. One of the key success factors of entrepreneurship is planning, definitely a learned skill. Our program offers two specific courses in entrepreneurship: the first to develop a feasibility plan to evaluate and explore ideas, as well as a general overview of general business foundations; the second to develop a viable individualized business plan which will be used both as a map for success, as well as a document students could use as a financing proposal (a real-life simulation project with cooperating businesses in town). Extensive use of guest speakers, experts in various aspects of small business, will be used in both these classes.

A laptop computer is recommended, but not required, for students entering the entrepreneurship program. The College will provide a list of appropriate laptops and wireless modem cards to all students who have been accepted to attend Alfred State College.

TRANSFER OPPORTUNITIES

Students may transfer directly into one of our own BBA programs or to another college to pursue a bachelor's degree.

OCCUPATIONAL OPPORTUNITIES

- Manager of Small Business
- Owner-Operator of Small Business

EMPLOYMENT STATISTICS

Employment and transfer rate:
Entrepreneurship (certificate): 100 percent - 50 percent are employed; 50 percent transferred to continue their education.
Entrepreneurship (AAS degree): 100 percent – 50 percent are employed; 50 percent transferred to continue their education.

RELATED PROGRAMS

- Accounting
- Business Management (Career)
- Business Administration (BBA)
- Business Administration (Transfer)
- Marketing

ENTRANCE REQUIREMENTS

Required: Algebra (Math A)
Recommended: Geometry, Algebra 2/Trigonometry (Math B)

ENTREPRENEURSHIP - AAS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
ACCT	1124	Financial Accounting	4
MKTG	2073	Principles of Marketing	3
CISY	1103	Information Technology Mgt.	3
COMP	1503	Freshman Composition	3
MATH	xxx3	Math Elective	3
HPED	xxx1	Physical Education Elective	1
			17

Second			
ACCT	2224	Managerial Accounting	4
BUAD	2033	Business Communications	3
BUAD	3153	Fundamentals of Management	3
BUAD	3043	Business Law I	3
	xxx3	Humanities Gen. Ed. Elective	3
MATH		Math Elective	3
			19

Third			
**MKTG	1033	Advertising Principles	3
BUAD	4203	Intro to Personal Financial Planning	3
ECON	1013	Macroeconomics	3
	xxx3	Gen Education Elective	3
	xxx3	Business Elective	3
			15

Fourth			
*BUAD	4004	Essentials of Entrepreneurship & Small Business Mgt	4
*MKTG	1063	Principles of Sales	3
ECON	2023	Microeconomics	3
*BUAD	4193	Insurance and Risk Management	3
*BUAD	4053	Business Law II	3
			16

*Offered in the spring semester only.
**Offered in the fall semester only.

Total Credit Hours - 67

GRADUATION REQUIREMENTS

67 semester hours with a 2.0 cumulative index.

ENTREPRENEURSHIP - Certificate

First			
ACCT	1124	Financial Accounting	4
BUAD	3153	Fundamentals of Management	3
BUAD	3043	Business Law I	3
CISY	1103	Information Technology Mgt.	3
MKTG	2073	Principles of Marketing	3
			16

Second			
ACCT	2224	Managerial Accounting	4
BUAD	4193	Insurance and Risk Management	3
MKTG	xxx3	Marketing Elective	3
BUAD	4004	Essentials of Entrepreneurship & Small Business Mgt	4
BUAD	xxx3	Business Elective	3
			17

Total Credit Hours - 33

GRADUATION REQUIREMENTS

33 semester hours with a 2.0 cumulative index.

225 - Entrepreneurship
SOC Occupation Listings:
11-1011.00 Chief Executives
11-1011.03 Chief Sustainability Officers
11-1021.00 General and Operations Managers
11-2022.00 Sales Managers
11-3011.00 Administrative Services Managers
11-3051.00 Industrial Production Managers
11-3051.01 Quality Control Systems Managers
11-3051.02 Geothermal Production Managers
11-3051.03 Biofuels Production Managers
11-3051.04 Biomass Production Managers
11-3051.05 Methane/Landfill Gas Collection System Operators
11-3051.06 Hydroelectric Production Managers
11-3071.00 Transportation, Storage, and Distribution Managers
11-3071.01 Transportation Managers
11-3071.02 Storage and Distribution Managers
11-9021.00 Construction Managers
11-9151.00 Social and Community Service Managers
11-9199.00 Managers, All other
13-1051.00 Cost Estimators
13-1111.00 Management Analysts
25-1011.00 Business Teachers, Postsecondary

Costs for entire program completed in normal time (full-time, in-state):
Tuition and required fees: $6,518.
Estimated costs of books and supplies: $1,200.
Room and Board charges for living on campus: $10,450

Additional cost information can be found at *www.alfredstate.edu/paying-for-college/tuition-and-costs*

The job placement rate for students who completed their program between July 1, 2008, through June 30, 2009, can be found in the following chart.

Employment and Transfer Report
Employment and Transfer Rate: 100%
:

Survey Details	2007	2008	2009
Receiving Degrees	N/A	N/A	2
Responding to Survey	--	--	2 (100%)
Employed	--	--	1 (50%)
Employed in Field	--	--	1 (100%)
Transferred	--	--	1 (50%)
Unemployed & Seeking Employment	--	--	--
Unemployed & Not SeekingEmployment	--	--	--

Employment and Transfer Salary Information:

Prefer not to disclose (1)

FINANCIAL PLANNING

BBA Degree – Code #1938

Ron Rhoades, Program Coordinator
E-mail address: rhoadera@alfredstate.edu

The Business Department is now offering a BBA degree in financial planning. Students receiving their AAS or AS degree in virtually any business concentration will be able to seamlessly transfer into this program and receive the BBA degree in four more semesters, which includes a full semester internship in the field.

Personal financial services is one of the most lucrative and rapidly expanding professions in existence. By combining expertise in estate planning, investment planning, risk management, insurance evaluation, tax planning, retirement planning, and employee benefits planning, the CERTIFIED FINANCIAL PLANNERr™ professional offers one-stop comprehensive expert advice and planning which would have formerly required a prospective client to seek advice from a variety of different professionals. Students completing this four-year degree will be eligible to sit for the the CERTIFIED FINANCIAL PLANNER™ examination, a rigorous multi-part exam that is one important step in becoming a CFP® practitioner. While there are numerous job opportunities for employment in various types of financial institutions such as banks, investment firms, and the insurance industry, perhaps the greatest earnings potential lies in becoming a self-employed CFP® practitioner.

This is an extremely rewarding profession. Not only is there tremendous earning potential, but it is also a very satisfying way to make a living because you are helping people bring order to their lives by teaching them how to acquire, and retain, wealth.

A laptop computer is required for students entering this degree program. Laptop specifications are available at www.alfredstate.edu/required-laptops.

This program is registered with the Certified Financial Planner Board of Standards, Inc.

Certified Financial Planner Board of Standards, Inc. owns the trademarks CFP®, CERTIFIED FINANCIAL PLANNER™ and CFP® (with flame design) certification marks in the U.S., which it awards to individual who successfully complete CFP Board's initial and ongoing certification requirements.

Alfred State College does not certify individuals to use the CFP®,CERTIFIED FINANCIAL PLANNER™ and CFP® (with flame design) certification marks. CFP® certification is granted solely by Certified Financial Planner Board of Standards, Inc. to individuals who, in addition to completing an educational requirement such as this CFP Board-Registered Program, have met ethics, experience, and examination requirements.

OCCUPATIONAL OPPORTUNITIES

- Banking
- Insurance
- Investment Firms
- Financial Planning Firms
- Attorneys' Offices
- Self-Employment
- Employee Benefits Specialists
- Accounting Firms

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 83 percent are employed; 17 percent transferred to continue their education.

RELATED PROGRAMS

- Accounting
- Business Administration (Transfer)
- Business Management (Career)
- Entrepreneurship
- Financial Services
- Marketing

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B), SAT and/or ACT scores with a recommended combined SAT score of 1000 (critical reading and math) or a composite ACT score of 21

FINANCIAL PLANNING - BBA Degree

TYPICAL EIGHT-SEMESTER PROGRAM

First			
ACCT	1124	Financial Accounting	4
CISY	1103	Information Technology Mgt.	3
MKTG	2073	Principles of Marketing	3
MATH	1123	Statistics I or Statistical Methods	3
COMP	1503	Freshman Composition	3
HPED	xxx1	Physical Education Elective	1
			17

Second			
ACCT	2224	Managerial Accounting	4
BUAD	2033	Business Communications	3
CISY	3023	Adv Micro Spreadsheets	3
	xxx3	Humanities Gen Ed Elective	3
SPCH	1083	Effective Speaking	3
	xxx3	Natural Science Elective	3
			19

Third			
BUAD	3153	Fund of Management	3
BUAD	3043	Business Law I	3
BUAD	4203	Intro to Personal Financial Planning	3
ECON	1013	Macroeconomics	3
BUAD	4133	Investments	3
ACCT	3453	Tax Accounting I	3
			18

Fourth			
MKTG	1063	Principles of Sales	3
ECON	2023	Microeconomics	3
BUAD	4193	Insurance & Risk Management	3
	xxx3	Western Civ Elective	3
	xxx3	Other World Civ Elective	3
	xxx3	Business Elective	3
			18

Fifth			
BUAD	5003	Management Communications	3
BUAD	5023	Human Resource Management	3
FSMA	7023	Estate Planning	3
	xxx3	Foreign Language Elective	3
COMP	5703	Technical Writing II	3
TMGT	5001	Business Seminar	1
			16

Sixth			
FSMA	6003	Employee Benefit Planning	3
BUAD	xxx3	Management Elective-Upper	3
	xxx3	Fine Arts Elective	3
	xxx3	American History Elective	3
BUAD	5033	Retirement Planning	3
			15

Seventh			
FSMA	7123	Personal Fin. Planning Capstone	3
FSMA	5003	Investment Planning	3
FSMA	5103	Tax Planning	3
FSMA	7103	Money and Banking	3
	xxx3	Business Elective	3
BUAD	xxx3	Management Elective Upper Level	3
			18

Eighth			
FSMA	8112	Internship	12
			12

GRADUATION REQUIREMENTS

- 133 credit hours, including one credit hour of physical education
- 30 credit hours of the 45 upper-level credit hours for this degree must be taken at Alfred State College.
- cumulative overall index of at least 2.0

FINANCIAL SERVICES

AAS Degree – Code #0641 ☐

Francine Staba, Program Coordinator
E-mail address: stabafm@alfredstate.edu

The financial services program is designed to provide students with an overview of the various financial institutions and their importance in the economy and to provide a description of the products and services offered by financial institutions. With this degree, students may enter directly into the work force or continue their education in a four-year baccalaureate program. Generally, graduates begin their careers in entry-level positions such as tellers and salespersons with career ladders reaching toward loan officers, researchers, stock brokers, financial planners, and insurance agents. This program provides introductory courses in the basic fields of financial services; helps the student appreciate the broad business principles necessary for successful management of a financial institution; prepares the student to recognize the ethical considerations that are important in the financial advisory process; enables the student to understand the role that financial institutions play in the economy; and keeps the student informed on changes in legislation and technology and how these will affect the future of the financial services industry.

A laptop computer is recommended, but not required, for students entering the financial services program. The College will provide a list of appropriate laptops and wireless modem cards to all students who have been accepted to attend Alfred State College.

TRANSFER OPPORTUNITIES

Students may transfer directly into one of our own BBA degree programs or to another college. Although not limited to these schools, common transfer institutions include: Alfred University, St. Bonaventure University, Rochester Institute of Technology, St. John Fisher College, SUNY at Albany, University at Buffalo, SUNY College at Brockport, SUNY College at Fredonia, SUNY College at Geneseo, SUNY College at Oneonta, SUNY College at Oswego, SUNY at Binghamton, Canisius College, Niagara University, and Hilbert College.

OCCUPATIONAL OPPORTUNITIES

- Commercial Banks
- Thrift Institutions
- Credit Unions
- Mutual Funds
- Insurance Companies
- Pension Funds
- Financial Planning Firms

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 17 percent are employed; 83 percent transferred to continue their education.

RELATED PROGRAMS

☐ Accounting
☐ Business Administration (Transfer)
☐ Business Administration (BBA)
☐ Business Management (Career)
☐ Financial Services
☐ Marketing
☐ Technology Management

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry (Math A)
Recommended: Algebra 2/Trigonometry (Math B)

FINANCIAL SERVICES - AAS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
ACCT	1124	Financial Accounting	4
COMP	1503	Freshman Composition	3
CISY	1103	Information Technology Mgt.	3
MATH	xxx3	Math Elective	3
MKTG	2073	Principles of Marketing	3
HPED	xxx1	Physical Education Elective	1
			17

Second			
ACCT	2224	Managerial Accounting	4
BUAD	2033	Bus Communications	3
	xxx3	Gen Ed Elective (Humanities)	3
MATH	xxx3	Math Elective	3
	xxx3	Gen Ed Elective	3
	xxx3	Computer Elective	3
			19

Third			
BUAD	3153	Fundamentals of Management	3
BUAD	3043	Business Law I	3
BUAD	4133	Investments	3
BUAD	4203	Intro to Personal Financial Planning	3
ECON	1013	Macroeconomics	3
			15

Fourth			
BUAD	4053	Business Law II	3
BUAD	4193	Insurance and Risk Mgt	3
MKTG	1063	Principles of Sales	3
ECON	2023	Microeconomics	3
	xxx3	Business Elective	3
			15

GRADUATION REQUIREMENTS

66 semester hours with a 2.0 cumulative index.

FORENSIC SCIENCE TECHNOLOGY

FORENSIC SCIENCE TECHNOLOGY - BS Degree - Code #2023

Dr. Jerry Fong, Program Coordinator
E-mail address: FongJD@alfredstate.edu

The forensic science technology program is a technically rigorous four-year degree culminating in a bachelor of science degree in forensic science. Students in this on-campus program will have the choice of focusing on biological applications within forensics, e.g., DNA fingerprinting, genetic analysis, and microbiology or can specialize in the chemical practicalities, notably: physicochemical analysis and identification of drugs, fibers, soils, glass, and other types of physical evidence.

Majors will also have the opportunity to broaden and deepen their training by selecting three technical electives and one open elective.

All majors in the program will be required to take a core course load that includes extensive preparation in physics, mathematics, biology, and chemistry as well as more advanced training in organic chemistry, biochemistry, instrumental methods, criminalistics, law, criminal justice, technical writing, and a senior internship and/or independent research experience.

OCCUPATIONAL OPPORTUNITIES

- Law Enforcement Laboratories
- Government Crime Laboratories
- Private Forensic Testing Laboratories
- Industrial Laboratories Employing Chemical or Biological Technologist

FUTURE EDUCATIONAL OPPORTUNITIES

- Graduate Level Forensic Science Programs
- Medicine
- Dentistry
- Pharmacy
- Biology
- Chemistry
- Environmental Science

EMPLOYMENT STATISTICS

Annual nationwide mean salary of forensic science technologists is $55,070 based on U.S. Department of Labor, Bureau of Labor Statistics, May 2009.

RELATED PROGRAMS

Biological Science

INTERNSHIP OPPORTUNITIES

Internship opportunity agreements are in place with a number of forensic laboratories including New York State Police Western Regional Crime Laboratory, United States Drug Enforcement Administration (DEA) Northeast Laboratory, and Onondaga County Center for Forensic Sciences.

FACILITIES

The program is located in the Agriculture Science Building with six laboratories and a greenhouse. Students have access to a myriad of technologies and instrumentation. Explore the alphabet soup list below.
UV-VIS - Ultraviolet - Visible Spectrophotometry
FTIR - Fourier Transform Infrared Spectrophotometry
AAS - Atomic Absorption Spectrophotometry
NMR - Nuclear Magnetic Resonance
FS - Fluorescence Spectrophotometry
GC-MS - Gas Chromatography/Mass Spectroscopy
HPLC - High Performance Liquid Chromatography
CE - Capillary Electrophoresis
PCR - Polymerase Chain Reaction
Comparison microscopy

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B), Biology, Chemistry, SAT and/or ACT scores with a recommended combined SAT score of 1000 (critical reading and math) or a composite ACT score of 21.

Recommended: Physics

Students must be able to physically lift 25 lbs. and possess fine motor skills which allow them to focus a microscope with fine adjustment and use forceps

FORENSIC SCIENCE TECHNOLOGY

TYPICAL EIGHT-SEMESTER PROGRAM

First			
CHEM	1984	Chemical Principles I	4
BIOL	1104	General Biology I	4
FRSC	1001	Intro to Forensic Technology I	1
COMP	1503	Freshman Composition	3
HIST	XXX3	American History Elective	3
			15

Second			
FRSC	2001	Intro to Forensic Technology II	1
CHEM	2984	Chemical Principles II	4
BIOL	2204	General Biology II	4
MATH	1084	Calculus I	4
SPCH	1083	Effective Speaking	3
HPED	xxx1	Physical Education Elective	1
			17

Third			
CHEM	3514	Organic Chemistry I	4
SPAN	xxx3	Gen Ed Foreign Language Elective	3
MATH	2124	Statistical Methods & Analysis	4
CJUS	1003	Intro. to Criminal Justice	3
FNAT	xxx3	Fine Arts Elective	3
			17

Fourth			
CHEM	4524	Organic Chemistry II	4
CJUS	6003	Law and Criminal Evidence	3
LITR	xxx3	Literature	3
	xxx3	Open Elective	3
	xxx3	Technical Elective	3
			16

Fifth			
CHEM	5414	Analytical Principles (Chem option)	4
		OR	
BIOL	5254	Principles of Microbiology (Bio option)	4
PHYS	1044	College Physics I	4
HIST	1113	Western Civilization	3
	xxx3	Technical Elective	3
			14

Sixth			
CHEM	6854	Physical Chemistry (Chem option)	4
		OR	
BIOL	6534	Genetics (Bio option)	4
CHEM	6614	Instrumental Analysis	4
PHIL	6053	Philosophy of Science	3
PHYS	2044	College Physics II	4
			15

Seventh			
CHEM	7784	Biochemistry	4
FRSC	7104	Criminalistics I	4
SOCI	5213	Science, Technology and Society	3
HIST	5133	Africa and the West	3
COMP	5703	Technical Writing	3
			17

Eighth			
FRSC	8104	Criminalistics II	4
FRSC	8111	Capstone Experience	1
FRSC	8113	Professional Preparation	3
FRSC	8803	Senlor Research Project	3
		OR	
FRSC	8813	Internship	3
	xxx3	Technical Elective	3
			14

Approved Technical Electives:
BIOL 1404 & 2504 Anatomy & Physiology I and II
BIOL 2633 Histotechniques
BIOL 4403 Pathophysiology
BIOL 5223 Genetic Engineering
CISY 3023 Advanced Computer Spreadsheets
MATH 2094 Calculus II
MATH 6114 Differential Equations
MATH 5900 Directed Study, Mathematics
MEDR 1132 Essentials of Pharmacology
CHEM 4900 Directed Study, Chemistry
FRSC 8900 Directed Study, Forensic

GRADUATION REQUIREMENTS

- Completion of above-listed courses
- Minimum of 124 total credit hours, a minimum of 45 which must be from upper division course work
- Completion of either a minimum 120 hour-long internship in a working forensic laboratory setting OR a semester-long directed research/independent study project
- Grade of "C" or higher in all chemistry, biology, and forensic science courses
- Completion of a "mock trial" capstone experience

HEALTH INFORMATION TECHNOLOGY

AAS Degree – Code #1969 ☐

Tracy Locke, Program Director
E-mail address: locketf@alfredstate.edu

Alfred State College offers an online associate of applied science degree in health information technology. Health information technology (HIT) combines a profession in health care with information technology. Students who successfully complete the program are eligible to take the national certification examination to become a Registered Health Information Technician (RHIT). Alfred State College is accredited by the Middle States Association of Colleges and Schools, 3624 Market St., Philadelphia, PA 19104, (215) 662-5606. The HIT program is accredited in good standing by the Commission of Health Information and Informatics Management (CAHIIM) c/o AHIMA, 233 N Michigan Ave, Suite 2150, Chicago, IL 60601-5800 or (312) 233-1131.

The State University of New York (SUNY) College of Technology at Alfred (better known as Alfred State College) has offered traditional HIT courses on campus since 1968 and has offered Web-based online learning or (e-learning) courses since 1999.

HIT professionals are responsible for maintaining components of health information systems consistent with the medical, legal, accreditation, and regulatory requirements of the health care delivery system. HIT professionals maintain, collect, and analyze data crucial to the delivery of quality patient care. The HIT professional compiles and reports health information data for reimbursement, facility planning, marketing, risk management, utilization management, quality assessment, and research; abstracts and codes clinical data using appropriate classification systems; and analyzes health records according to standards.

HIT professionals play a key role in the planning, implementation, and management of the electronic health record (EHR). HIT professionals are educated in the leadership and management of health information. Health information management includes paper, scanned, or electronic. The HIT professional is knowledgeable in electronic health record/electronic medical record (EHR/EMR), health information exchange (HIE), regional health information organizations (RHIOs), and the legal health record (LHR).

HIT professionals care for people's health by taking care of their health information. The HIT professional's primary function is to make sure that all the medical information collected about an individual is complete, accurate, and protected, yet, at the same time, readily available for healthcare providers when it's needed.

PROFESSIONAL PRACTICE EXPERIENCES

Students complete non-paid professional practice experiences (PPEs) in the Health Information Department of an acute care facility (200 hours). PPE arrangements are made in consultation with each student so that convenient locations are selected. Students are not a substitute for paid staff during PPEs, which means they are expected to receive appropriate supervision and mentoring during completion of all tasks.

The Joint Commission Hospital Accreditation Standards Manual requires hospitals to implement “a process to ensure that a person’s qualifications are consistent with his/her job responsibilities.” This standard “applies to staff, students, and volunteers,” and it further states the hospital is responsible for verifying “the following according to law, regulation, or hospital policy: information on criminal background.” As such, Alfred State College students who complete PPEs in the HIT technology program may be required to undergo a criminal background check prior to placement at the facility. In addition, the facility may require students to undergo a physical examination (on-site at the facility or by the student’s primary care provider) prior to beginning the professional practice experience. The physical examination includes drug screening, a TB test, and/or DTB, hepatitis B, and/or MMRV immunization or status. Students may be required to incur costs associated with the criminal background check and/or physical examination.

Once a PPE placement has been arranged, students are expected to contact the professional practice supervisor to arrange a schedule for attendance. Students may be required to attend an on-site orientation at the professional practice facility, which could be several days in length.

The HIT program is accredited by the Commission on Accreditation for Health Informatics and Information Management (CAHIIM). Contact CAHIIM, c/o AHIMA, 233 N Michigan Ave, Suite 2150, Chicago, IL 60601-5800 or (312) 233-1131. Visit the Web site at www.cahiim.org.

ARTICULATION AGREEMENTS

One-plus-one transfer agreements exist between Alfred State and Corning, Jamestown, Genesee, and American Somoa Community Colleges; students complete their first year of study at the local community college and transfer to Alfred State for their second year. Transfer is guaranteed if a student successfully completes the prescribed first-year schedule of courses with a 2.0 cumulative index.

TRANSFER OPPORTUNITIES

Although not limited to these schools, common transfer institutions for HIT bachelor degree programs include SUNY College of Technology at Utica/Rome, Stephens College, St. Scholastica, Regis University, and University of Cincinnati.

OCCUPATIONAL OPPORTUNITIES

- Hospitals
- Clinics and Physicians' Offices
- Insurance Companies
- State and Federal Agencies
- Law/Computer Firms
- Software Companies
- Consultant

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 87 percent are employed; 13 percent transferred to continue their education.

CERTIFICATION

Graduates are eligible to take the national certification examination to become a Registered Health Information Technician (RHIT). Since 1968, when the program was created, Alfred State HIT graduates have traditionally achieved a passing rate above the national average.

Graduates are also eligible to take the Certified Coding Specialist (CCA, CCS and CCS-P) and Certified Professional Coder (CPC, CPC-A, CPC-H-A, CPC-H, and CPC-P) exams. It is strongly recommended that students complete technical elective courses in this area of study and work for a minimum of one year as a coder before taking the coding certification exam(s).

RELATED PROGRAMS

- Coding & Reimbursement Specialist
- Computer Information Systems

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: high school Biology or equivalent
Must be able to visually read computer monitor.
Must be able to use keyboard and mouse.

Recommended: Keyboarding, MS Office Professional

HEALTH INFORMATION TECHNOLOGY - AAS Degree

TYPICAL FOUR-SEMESTER PROGRAM - Full-time

First			
BIOL	1114	Human A&P I	4
COMP	1503	Freshman Composition	3
MEDR	1132	Essentials of Pharmacology	2
MEDR	1133	Medical Terminology	3
MEDR	1114	Intro to Health Info Mgt	4
			16

Second			
BIOL	2214	Human A&P II	4
BIOL	4403	Pathophysiology	3
MEDR	1223	Health Data Management	3
MEDR	1244	CPT Coding & HCPCS Level II Coding	4
MEDR	1234	ICD-9-CM, ICD-10-CM & ICD-10-PCS Coding	4
			18

Third			
MEDR	5114	Electronic Health Record	4
MEDR	5313	Legal Aspects of Health Information Management	3
SOCI	1163	General Sociology	3
		OR	
PSYC	1013	General Psychology	3
LITR	2603	Introduction to Literature	3
		OR	
LITR	2343	Children's Literature	3
		OR	
SPAN	1203	Spanish I	3
SPCH	1083	Effective Speaking	3
HPED	1111	Health & Wellness	1
			17

Fourth			
HIST	2153	American History II	3
		OR	
MATH	1033	College Algebra	3
MEDR	4514	Alternate Care HIM	4
MEDR	5214	Insurance & Reimbursement Proc	4
BUAD	3153	Fundamentals of Mgt	3
			14

Summer Program			
MEDR	1312	Intro to HIM PPE	2
MEDR	1323	Coding PPE	3
MEDR	5111	Health Information Technology Seminar	1
			6

HIT students are required to earn a grade of at least a "C" or better in each BIOL and MEDR prefix courses prior to placement in the PPEs. Students must also earn a grade of at least "C" in all BIOL, MEDR, COMP 1503, and BUAD 3153 courses to graduate from the HIT program.

Should a student fail MEDR or BIOL courses a second time: Students may re-take MEDR and/or BIOL courses as a continuing education student, then upon successful completion with a "C" or better, apply for readmission to the HIT program, or students may re-take the BIOL/MEDR equivalent courses on-campus at Alfred State College or at another college, and transfer the credit back to

Alfred State College, if the course has been pre-approved for transfer credit and the student earned a grade of "C" or better.

Also required: One unit of physical education. HPED 1111 is online and meets the PE requirement.

CISY 1003 (introduction to microcomputers) may be taken in the first semester as an elective.

MEDR 2614 (advanced coding & reimbursement) may be taken in the last semester as an elective.

Part-time students are required to take their general education courses prior to MEDR courses.

HEAVY EQUIPMENT OPERATIONS

AOS Degree – Code #1908

This program provides instruction in the skills required by heavy equipment operators for the light construction and heavy highway industries. Instruction is provided in the theory connected with heavy equipment operations as well as grades, soils, blueprint reading, safety, and supervision.

Programs leading to an AOS degree are hands-on programs and do not include liberal arts and sciences courses. Offered at the School of Applied Technology Campus in Wellsville, heavy equipment operations is geared toward a person who would like to enter the heavy equipment operation industry following graduation.

Classes and labs are scheduled from 8:30 a.m. until 3 p.m. each day with a break for lunch. Each morning, one or two hours are devoted to class lectures on subjects specific to the heavy equipment operation trade. The classroom training is then applied in a hands-on laboratory setting, or off campus at a construction site.

OCCUPATIONAL OPPORTUNITIES

- Town, Village, County Department of Public Works
- NYS Department of Transportation
- Highway and Heavy Construction Companies
- Mining Companies
- Logging Companies

Upon successful completion of this program, students may continue in Alfred State's BBA program in technology management.

Employment Statistics

Employment and Transfer Rate: 100 percent - 100 percent are employed

RELATED PROGRAMS

Heavy Equipment: Truck & Diesel Technician

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Applicants in the heavy equipment operations program must meet the following physical requirements:

- Must be able to lift 50 pounds to shoulder height.
- Must be able to perform safely in the laboratory.
- Must be able to communicate orally with a person 20 feet away.
- Must be able to climb, un-aided, onto and off of equipment using three points of contact.
- Must be able to stand for long periods of time.
- Must be able to visually read from a blueprint or drawing.
- Must be able to hear a backup warning alarm.

Recommended: Algebra (Math A)

Students will be accepted for the heavy equipment operations program based on the strength of their application. Criteria for consideration will include high school average, regents exam scores (if a New York State student), grades in related course work, results of standardized tests (if available), and additional information provided through letters of recommendation, a personal essay indicating career goals, and a resume. Initial application review will begin on Nov. 1.

HEAVY EQUIPMENT EQUIPMENT OPERATIONS - AOS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
BLCT	1053	Safety & Identification of Heavy Equipment	3
BLCT	1044	Blueprint Reading Grades	4
BLCT	1016	Operations - Part I	6
BLCT	1043	Introduction to Earth Moving	3
BLCT	1052	Soils - Part I	2
			18
Second			
BLCT	2023	Equipment Safety-Part II	3
BLCT	2034	Grades & Blueprint Reading II	4
BLCT	2033	Equipment Preventive Maintenance	3
BLCT	2036	Operations-Part II	6
BLCT	2092	Soils-Part II	2
			18
Third			
BLCT	3003	Advanced Equipment Safety	3
BLCT	3002	Blueprint Reading-Part III	2
BLCT	3005	Operations-Part III	5
BLCT	3013	Paving-Part I	3
BLCT	3012	Soils-Part III	2
BLCT	3023	Supervision-Part I	3
			18
Fourth			
BLCT	4002	Below Grade Construction (Heavy Highway)	2
BLCT	4012	Earth Moving (Heavy Highway)	2
BLCT	4022	Finish Operations	2
BLCT	4032	Finishing and Grading	2
BLCT	4004	Operations-Part IV	4
BLCT	4003	Paving-Part II	3
BLCT	4013	Supervision-Part II	3
			18

GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a “C” average.

HEAVY EQUIPMENT: TRUCK & DIESEL TECHNICIAN

AOS Degree – Code #0452

This specialization includes 1,800 hours of practical experience and classroom training. Students receive their basics in the first year on all types of vehicles. The senior year concentrates on trucks, bulldozers, earthmovers, farm tractors, and other diesel-powered equipment. Our heavy equipment: truck & diesel technician program is the only program in New York and New England that is approved by the Association of Diesel Specialists (ADS). The heavy equipment: truck & diesel technician program is one of only nine national ADS TechSmart training programs.

OCCUPATIONAL OPPORTUNITIES

- Agricultural Equipment Mechanic
- Service Manager
- Diesel Fuel System Specialist
- Shop Foreman
- Heavy Equipment Mechanic
- Truck Fleet Mechanic
- Industrial Equipment Mechanic
- Marine Engine Service Technician

Upon successful completion of this program, students may continue in Alfred State's BBA program in technology management.

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 88 percent are employed; 12 percent transferred to continue their education.

RELATED PROGRAMS

- Autobody Repair
- Automotive Parts Technology
- Automotive Service Technician
- Mechanical Engineering Technology
- Welding Technology

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Applicants for all programs in the Automotive Trades Department must meet the following physical requirements:

- Must be able to perform safely in the shop.
- Must be able to lift 50 pounds to eye level.
- Must be able to communicate orally with a person six-10 feet away.
- Must be able to visually decipher an oscilloscope monitor and digital/analog meter, and scan tool displays.
- Must have a valid motor vehicle license and be able to drive a standard transmission vehicle.
- Must be able to diagnose mechanical failures that are distinguished audibly.
- Must be able to understand information found in service repair manuals and use diagnostic flow charts.
- Must meet qualifications for a NYS driver's license.

Recommended: Algebra (Math A)

CERTIFICATION OR LICENSURE

Students may take Automotive Service Excellence (ASE) certification exams in eight areas and the ADS TechCert test. Students are eligible for New York State inspection certification upon successful completion of their freshman year. In their senior year, students may take the test for certification in Basic Engine Theory through the Association of Diesel Specialists.

HEAVY EQUIPMENT: TRUCK & DIESEL TECHNICIAN - AOS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
AUTO	1224	Welding	4
AUTO	1245	Basic Truck Electronics & Component Overhaul	5
AUTO	1219	Truck Brakes, Steering & Suspension Systems	9
			18
Second			
AUTO	1239	Inspection, Maintenance, Air Conditioning, Cooling & Heating	9
AUTO	2169	Truck Gasoline Engine Tune-Up, Electrical Engine Controls & Electrical Diagnosis	9
			18
Third			
AUTO	3609	Heavy Duty Drive Train	9
AUTO	3649	Diesel Engine Service	9
			18
Fourth			
AUTO	3623	Air Brake Service	3
AUTO	4363	Heavy Duty Electrical/Hydraulic Specialties	3
AUTO	4669	Diesel Fuel System Service	9
AUTO	2503	Preventive Maintenance for Heavy Truck & Diesel	3
			18

Continuing Students:
Students successfully completing the heavy equipment: truck & diesel technician program receive first priority for space if they wish a third year (senior year) in automotive service technician. They may be admitted to autobody repair with the department chair's approval.

GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

HUMAN SERVICES

AS Degree – Code #1175

Michael Cobb, Program Coordinator
E-mail address: cobbmj@alfredstate.edu

The human services program is a broadly based, applied program emphasizing both professional course work in the human services and course work in the social sciences and liberal arts. Students take courses that provide them with the skills and knowledge to be successful when working in a variety of human services agencies. Students have the opportunity to take electives in specialty areas such as education, substance abuse, criminal justice, and gerontology.

TRANSFER OPPORTUNITIES

The human services program offers excellent transfer potential in fields such as psychology, human services, human services management, education, social work, sociology, criminal justice, gerontology, and communications. Among the colleges to which recent graduates have successfully transferred are Alfred University, Mansfield University, Hilbert College, SUNY at Brockport, University of Buffalo, and SUNY at Stony Brook. Students may also continue their education in Alfred State's BS program in human services management.

OCCUPATIONAL OPPORTUNITIES

- Early Childhood Programs
- Education
- Social Services
- Youth Services
- Elderly Services
- Criminal Justice
- Disability Services
- Substance Abuse Programs
- Activity Directors

EMPLOYMENT STATISTICS

Employment and transfer rate of 95 percent – 32 percent are employed; 63 percent transferred to continue their education.

RELATED PROGRAMS

- Human Services Management
- Individual Studies
- Liberal Arts & Sciences: Social Science

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra (Math A)

HUMAN SERVICES - AS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
COMP	1503	Freshman Composition	3
PSYC	1013	Gen Psychology	3
SOCI	1163	Gen Sociology	3
HUSR	2083	Intro to Human Services	3
FNAT	xxx3	Fine Arts Elective	3
			15
Second			
PSYC	1023	Human Development	3
PSYC	1063	Basic Helping Skills	3
HUSR	4033	Issues in Human Services	3
LITR	xxx3	Literature Elective	3
MATH	xxx3	Math Elective	3
			15
Third			
SOCI	1223	Minority Cultures	3
	xxx3	Other World Civiliz Elective	3
	xxxx	Natural Science Elective	3-4
	xxx3	Open Elective	3
PSYC	xxx3	Psychology Elective	3
			15-16
Fourth			
SOCI	1183	Contemp Soc Problems	3
*HUSR	1074	Practicum	4
	xxx3	American History Elective	3
	xxx3	Computer Elective	3
	xxx3	Open Elective	3
			16

Also required: One unit of physical education.

* Practicum credit hours are under revision.

Graduation Requirements

A minimum of 62 hours is required for graduation. The overall cumulative grade point average required for graduation is 2.0. The student must satisfactorily demonstrate professionalism as outlined in the department's student handbook. All students must complete COMP 1503 (freshman composition) and a one-credit hour course in physical education. In addition, all students must have at least one course in seven of the 10 general education requirements established by SUNY. Finally, human services graduates must complete a practicum at one of over 70 participating agencies. To be eligible for the practicum, students must be in good academic standing and have completed HUSR 2083, HUSR 4033, and PSYC 1063, with an average grade of "C+" (2.5), and pass any required agency background check.

HUMAN SERVICES MANAGEMENT BS

BS Degree – Code #2153

Michael Cobb, Program Coordinator
E-mail address: cobbmj@alfredstate.edu

The baccalaureate degree (BS) program in human services management prepares workers who, as generalists, can work with clients in a wide range of human services agencies and also can employ sound management practices. This interdisciplinary program not only prepares students to offer direct service to clients but also prepares them in the basics of program management and supervision. The program requires students to take lower- and upper-level courses in the human services, and additional courses in management, accounting, and leadership. An upper-level internship of 400 or more hours in a public or private human services agency is required.

FUTURE EDUCATIONAL OPPORTUNITIES

Graduate level programs in areas including human services, human services administration, social work, social work administration, business administration, business administration - non-profit and government, and public administration.

OCCUPATIONAL OPPORTUNITIES

- Case, Program, or Residential Manager
- Human Services Supervisor
- Aftercare Coordinator
- Quality Assurance Specialist
- Outreach Coordinator
- Grants Management and Organizational Development Specialist
- Program Planner

EMPLOYMENT STATISTICS

The U.S. Bureau of Labor Statistics expects demand for bachelor-prepared human services professionals to grow faster than average through the next decade, especially in rural areas which already face a significant shortage of human services professionals. Depending on location, starting salary will typically range from $35,000 to $45,000.

RELATED PROGRAMS

Business Administration
Human Services
Liberal Arts & Sciences: Social Science

INTERNSHIP OPPORTUNITIES

Internship opportunities exist with a number of local and regional human services agencies including, but not limited to, ACCORD Corp., Adelphoi Behavioral Sciences, Alfred Montessori School, Allegany County ARC, Allegany County Department of Health, Allegany Department of Social Services, Allegany County Office for the Aging, Allegany Rehabilitation Associates, Inc., Catholic Charities, Hillside Children's Services, Hornell Area Concern for Youth, St. James Mercy Healthcare, Trapping Brook House, and the YMCA of Hornell.

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Applicants must have graduated from an approved high school or possess a high school equivalency diploma, and must provide verification of same to the Alfred State College Admissions Office.
Applicants without a college degree must submit ACT or SAT scores. A composite ACT score of 21 or a combined SAT score of 1000 (reading and math) is recommended.
Applicants without a college degree must have successfully completed Math A or its equivalent.
Applicants with previous college course work must submit an official college transcript.
Applicants are informed that many human services agencies require that field practicum students pass background checks before being allowed to begin their field placements.
While the program allows students to pursue their degrees on a part-time basis, applicants should be aware that they must enroll as full-time students in the semester in which they take their senior fieldwork (HUSR 5314).
Financial need is not considered as part of the admissions process.

Required: Algebra (Math A), SAT and/or ACT scores with a recommended combined SAT score of 1000 (critical reading and math) or a composite ACT score of 21.

HUMAN SERVICES - AS Degree

TYPICAL EIGHT-SEMESTER PROGRAM

First			
COMP	1503	Freshman Composition	3
PSYC	1013	Gen Psychology	3
SOCI	1163	Gen Sociology	3
HUSR	2083	Intro to Human Services	3
FNAT	xxx3	Fine Arts Elective	3
HPED	xxx1	Physical Education	1
			16

Second			
PSYC	1023	Human Development	3
PSYC	1063	Basic Helping Skills	3
HUSR	4033	Issues in Human Services	3
LITR	xxx3	Literature Elective	3
MATH	xxx3	Statistical Concepts OR Statistics I	3
			15
Third			
SOCI	1223	Minority Cultures	3
	xxx3	Other World Civiliz Elective *	3
	xxxx	Natural Science Elective	3-4
PSYC	xxx3	Psychology Elective	3
SPCH	1083	Effective Speaking	3
			15-16
Fourth			
SOCI	1183	Contemp Soc Problems	3
HUSR	1074	Practicum **	4
	xxx3	American History Elective ***	3
	xxx3	Computer Elective	3
	xxx3	Open Elective	3
			16
Fifth			
ACCT	5043	Accounting Perspectives	3
BUAD	3153	Fundamentals of Management	3
SOCI	5023	Research Methods	3
PSYC	5013	Counseling Theory	3
HUSR	5003	Community Organization	3
			15
Sixth			
BUAD	5023	Human Resource Management	3
BUAD	5013	Principles of Leadership	3
BUAD	5003	Management Communication	3
HIST	1113	Western Civilization	3
HUSR	5103	Social Policy & Human Services	3
			15
Seventh			
		Foreign Language Elective	3
BUAD	5043	Ethics & Leadership in Management	3
HUSR	5203	Grants, Contracts, Org. Adv. On HS	3
HUSR	5213	Case Management Systems	3
PSYC	5103	Industrial Psychology	3
			15
Eighth			
HUSR	5314	Field Practicum & Seminar ****	14

Note:

* One out of international relations or marriage and family across world civilizations.

** 104 hours of field work and two-hour seminar; requires 2.0 cumulative GPA and C+ average in HUSR 2083, HUSR 4033 and PSYC 1063.

*** One out of American history I, American history II, or American government.

**** Minimum 400 hours field work, three-hour weekly seminar, requires 2.0 cumulative GPA and 2.5 average GPA in all upper-level HUSR courses.

Graduation Requirements

- Successful completion of above-listed courses with a cumulative GPA of 2.0 or higher.
- Successful completion of at least one course in each of the 10 General Education knowledge areas established by SUNY.
- Minimum of 121-122 total credit hours, of which at least 50 must be at the upper level and 60 must be in the liberal arts and sciences.
- Ability to pass any background check required by the internship agency.
- 2.5 GPA or higher in each upper-level human services course prior to taking the senior internship.
- 3.0 GPA or higher in the senior internship.
- Successful completion of a semester-long internship of at least 400 hours at a departmentally approved human services agency offering management internships.

INDIVIDUAL STUDIES

AS Degree – Code #0688

Dr. Terry W. Tucker, Dean, School of Arts & Sciences
E-mail address: tuckertw@alfredstate.edu

The individual studies program serves students' needs three ways:

1. provides an opportunity to explore different career choices
2. prepares for transfer to a four-year school
3. fulfills a career goal that cannot be met by traditional program offerings

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 8 percent are employed; 92 percent transferred to continue their education.

RELATED PROGRAMS

- Business Administration (Transfer)
- Liberal Arts & Sciences: Humanities
- Liberal Arts & Sciences: Math & Science
- Liberal Arts & Sciences: Social Science

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra (Math A)
Recommended: Geometry, Biology

INDIVIDUAL STUDIES - AS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
ASDC	xxx1	College Success OR Career Planning	1
COMP	1503	Freshman Composition	3
	xxx3	Gen Education Elective*	3
	xxx3	Gen Education Elective*	3
	xxx3	Career Area	3
	xxx3	Elective	3
			16

Second			
SPCH	1083	Effective Speaking	3
	xxx3	Gen Education Elective*	3
	xxx3	Gen Education Elective*	3
	xxx3	Career Area	3
	xxx3	Elective	3
			15

Third			
	xxx3	Career Area	3
	xxx3	Elective	3
	xxx3	Elective	3
	xxx3	Gen Education Elective*	3
	xxx3	Gen Education Elective* OR	
		Liberal Arts Elective	3
			15

Fourth			
	xxx3	Career Area	3
	xxx3	Career Area	3
	xxx3	Elective	3
	xxx3	Gen Education Elective*	3
	xxx3	Gen Education Elective* OR	
		Liberal Arts Elective	3
			15

Also required: One unit of physical education.

*Students must satisfy a minimum of seven of the 10 SUNY General Education knowledge/skill content areas and complete a minimum of 30 credit hours in the liberal arts and sciences.

GRADUATION REQUIREMENTS

- A minimum of 61 hours (excluding HPE) is required for graduation with a cumulative index of 2.0.

INFORMATION SECURITY AND ASSURANCE

BTech Degree – Code #2085

The bachelor of technology degree in information security and assurance at Alfred State College is designed to prepare graduates to enter the work force as information security professionals with a special emphasis in network and host security, secure programming, and database applications. A four-course sequence in security is provided. The programming language sequence includes modern languages such as VB.NET, Java, and C++. In addition, students receive a sound foundation in Web development, networking, and microcomputer systems. The department has a Cisco-certified academy and the college has a Pearson Vue testing center. Students completing course work will have a strong foundation to obtain the following professional certifications: Cisco Certified Network Association (CCNA), CCNA Security, Security+, Microsoft Certified Technology Specialist, and Network+. Additional upper-level courses are provided in management, oral and written communication, and business. A full semester internship is included.

A laptop computer is required for students entering the information security and assurance program. Laptop specifications are available at www.alfredstate.edu/required-laptops.

TRANSFER OPPORTUNITIES

Articulation agreements have been established with many community colleges and additional agreements are in development. It is possible, with careful selection of courses, to transfer from a variety of associate degrees, including computer information systems, information technology, computer science, and others. Upon completion of the bachelor's degree, students will be prepared to pursue a graduate degree in information technology. The computer information systems degree (AAS) at Alfred State College is especially well suited for transfer into this degree at the junior level.

OCCUPATIONAL OPPORTUNITIES

Organizations of all types and sizes need information technology professionals and emphasis on security has never been higher. The primary employment field includes security IT specialists, Virtual Private Network administrators, authentication specialists, database administrators, programmers, and system analysts. Due to the solid foundation in other areas, graduates will not be limited to these areas; thus, the job opportunities are wide and numerous.

RELATED PROGRAMS

- Computer Engineering Technology
- Computer Information Systems
- Computer Science
- Digital Media and Animation
- Information Technology: Applications Software Development
- Information Technology: Network Administration
- Information Technology: Web Development

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B), SAT and/or ACT scores with a recommended combined SAT score of 1000 (critical reading and math) or a composite ACT score of 21.

INFORMATION SECURITY AND ASSURANCE - BTECH DEGREE

TYPICAL EIGHT-SEMESTER PROGRAM

First			
CISY	1023	Intro to Information Tech	3
CISY	1123	Intro to Computer Prog. for IT OR	
CISY	1113	Intro to Computer Programming	3
COMP	1503	Freshman Composition	3
	xxx3	Gen Ed "Social Science"	3
	xxx3	Gen Ed "Other"	3
			15
Second			
CISY	4103	Visual Programming & Dev	3
CISY	2143	Microcomputer Systems	3
LITR	2603	Intro to Literature	3
MATH	xxx3	College Algebra or Above	3
CISY	2153	Database Appl & Prog I	
HPED	xxx1	Physical Education	1
			16
Third			
CISY	4033	Networking I	3
CISY	3223	Intro to Web Page Development	3
MATH	2124	Statistics Methods and Analysis OR	
MATH	1123	Statistics I	3-4
	xxx3	Gen Ed "Other"	3
ACCT	1124	Financial Accounting	4
			16-17
Fourth			
CISY	4053	Linux OS and Scripting	3
BUAD	3153	Fundamentals of Management	3
CISY	5203	Network Administration	3
SPCH	1083	Effective Speaking	3
CISY	5723	Essentials of Info Security	3
	xxx3	Gen Ed "Other"	3
			18
Fifth			
COMP	5703	Technical Writing II	3
BUAD	5003	Management Communications	3
CISY	7033	Security Tools	3
CISY	7023	Comp Forensics and Legal Issues	3
	xxx3	Gen Ed "Natural Science"	3
	xxx3	Professional Elective - Upper	3
			18

Sixth			
CISY	7003	Project Management	3
CISY	7013	Network and Host Security	3
CISY	5133	Security Policies, Recovery and Risk Management	3
	xxx3	Open Elective	3
	xxx3	Open Elective	3
	xxx3	Professional Elective - Upper	3
			18
Seventh			
CISY	8703	Information Security Capstone OR	
CISY	8303	Software OP & Interop I	3
CISY	8603	Seminar in Critical Issues in IT	3
	xxx3	Open Elective	3
	xxx3	Professional Elective - Upper	3
	xxx3	Liberal Arts - Upper	3
			15
Eighth			
CISY	8712	Information Technology Internship****	12
			12

Other social science elective to be selected from social science general education list (for example: sociology, psychology), as approved by adviser.

Social science elective to be selected from American history, western civilization, or other world civilization general education list.

**** GPA of 2.5 or higher required in major courses; GPA of 2.0 minimum overall; internship is student-initiated.

GRADUATION REQUIREMENTS

- 128 credit hours inclusive of physical education courses
- 39 credit hours in major field required courses
- 24 credit hours in professional courses
- 18 credit hours in core concentration
- 30 credit hours in liberal arts/general education courses
- a 2.5 grade point average in the major is needed for the required internship
- other requirements as stated in College academic regulations
- 8 general education areas are required, with 3 of 5 (art, language, other world civilizations, American history, or western civilization)

INFORMATION TECHNOLOGY: APPLICATIONS SOFTWARE DEVELOPMENT

BTech Degree – Code #1502

The bachelor of technology degree in information technology: applications software development at Alfred State College is designed to prepare graduates to enter the work force as IT professionals with a special emphasis in programming and database applications. A four-course sequence in database application is provided. The programming language sequence includes modern languages such as VB.NET, Java, and C++. In addition, students receive a sound foundation in Web development, networking, and microcomputer systems. Additional upper-level courses are provided in management, oral and written communication, and business. A full semester internship is included.

A laptop computer is required for students entering the information technology: applications software development program. Laptop specifications are available at www.alfredstate.edu/required-laptops.

TRANSFER OPPORTUNITIES

Articulation agreements have been established with many community colleges and additional agreements are in development. It is possible, with careful selection of courses, to transfer from a variety of associate degrees including computer information systems, information technology, computer science, and others. Upon completion of the bachelor's degree, students will be prepared to pursue a graduate degree in information technology. The computer information systems degree (AAS) at Alfred State College is especially well suited for transfer into this degree at the junior level.

OCCUPATIONAL OPPORTUNITIES

Organizations of all types and sizes need computer professionals. The primary employment field includes database administrators, programmers, and systems analysts. Due to the solid foundation in all the major fields of information technology, the job opportunities for graduates are wide and numerous. They include database administrators, software developers, network support, project managers, user support, Web developers, IT managers, technical sales, and technical support staff, to name a few.

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 75 percent are employed; 25 percent transferred to continue their education.

Related Programs

- Computer Engineering Technology
- Computer Information Systems
- Computer Science
- Information Security & Assurance
- Information Technology: Network Administration
- Information Technology: Web Development

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B), SAT and/or ACT scores with a recommended combined SAT score of 1000 (critical reading and math) or a composite ACT score of 21.

INFORMATION TECHNOLOGY: APPLICATIONS SOFTWARE DEVELOPMENT - BTech Degree

TYPICAL EIGHT-SEMESTER PROGRAM

First			
CISY	1023	Intro to Information Technology	3
CISY	1113	Intro to Computer Prog	3
COMP	1503	Freshman Composition	3
	xxx3	Gen Ed - Social Science	3
	xxx3	Gen Ed - Other	3
			15

Second			
CISY	4103	Visual Programming & Dev	3
CISY	2143	Microcomputer Systems	3
LITR	2603	Intro To Literature	3
MATH	xxx3	College Algebra or Above	3
CISY	2153	Database Appl & Prog	3
HPED	xxx1	Physical Education	1
			16

Third			
CISY	4033	Networking I	3
CISY	3223	Intro to Web Page Development	3
MATH	2124	Statistics Methods and Analysis or	
MATH	1123	Statistics I	3-4
	xxx3	Gen Ed "Other"	3
ACCT	1124	Financial Accounting	4
			16-17

Fourth			
CISY	4063	Systems Analysis & Design	3
BUAD	3153	Fundamentals of Management	3
SPCH	1083	Effective Speaking	3
CISY	4003	Introduction to Data Structures	3
	xxx3	Gen Ed - Other	3
	xxx3	Open Elective	3
			18

Fifth			
CISY	6503	Object Oriented Programming	3
BUAD	5003	Management Communications	3
	xxx3	Gen Ed "Natural Science"	3
	xxx3	Open Elective	3
	xxx3	Professional Elective	3
COMP	5703	Technical Writing II	3
			18

Sixth			
CISY	7003	Project Management	3
CISY	5723	Essentials of Information Security	3
CISY	5403	Database Concepts	3
	xxx3	Concentration Elective	3
	xxx3	Open Elective	3
	xxx3	Professional Elective - Upper	3
			18

Seventh			
CISY	8503	Applied Database Management	3
CISY	8603	Seminar in Critical Issues in IT	3
	xxx3	Open Elective	3
	xxx3	Professional Elective - Upper	3
	xxx3	Liberal Arts Elective - Upper	3
			15

Eighth			
CISY	8712	Information Technology Internship****	12
			12

Other social science elective to be selected from social science general education list (for example: sociology, psychology), as approved by adviser.
Social science elective to be selected from American history, western civilization, or other world civilization general education list.
*** Other literature courses may be selected, as approved by adviser.
**** GPA of 2.5 or higher required in major courses; GPA of 2.0 minimum overall; internship is student-initiated.

GRADUATION REQUIREMENTS

- 128 credit hours inclusive of physical education courses
- 39 credit hours in major field required courses
- 24 credit hours in professional courses
- 18 credit hours in core concentration
- 30 credit hours in liberal arts courses
- a 2.5 grade point average in the major is needed for the required internship
- other requirements as stated in College academic regulations
- 8 general education areas are required with 3 of 5 (art, language, American history, western civilization, other world civilizations)

INFORMATION TECHNOLOGY: NETWORK ADMINISTRATION

BTech Degree – Code #1505

The bachelor of technology degree in information technology: network administration at Alfred State College is designed to prepare graduates to enter the work force as IT professionals with a special emphasis in networking. A five-course sequence in networking includes network operating systems, directory access protocols, system administration, advanced routing and switching, network security and network design, hardware, interoperability, and design. The Department has a Cisco-certified academy and the college has a Pearson Vue testing center. After completing their coursework, students will have a strong foundation to obtain professional certification in the following areas: Cisco Certified Network Association (CCNA), CCNA Security, Microsoft Certified Technology Specialist, CompTIA A+, and Network+. Core courses provide students with a foundation in other areas including Web server administration, programming database application, and microcomputer systems. Additional upper-level courses are provided in oral and written communication, management, and business. A full semester internship is included.

A laptop computer is required for students entering the information technology: network administration program. Laptop specifications are available at www.alfredstate.edu/required-laptops.

TRANSFER OPPORTUNITIES

Articulation agreements have been established with many community colleges and additional agreements are in development. It is possible, with careful selection of courses, to transfer from a variety of associate degrees including computer information systems, information technology, computer science, and others. The computer information systems degree (AAS) at Alfred State College is especially well suited for transfer into this degree at the junior level.

OCCUPATIONAL OPPORTUNITIES

Organizations of all types and sizes need computer professionals. Due to the solid foundation in all the major areas of computer information technology and systems, job opportunities for graduates are wide and numerous. They include network administrators, systems analysts, project managers, user support, Web developers, security specialist, IT managers, and technical support staff, to name just a few.

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 94 percent are employed; 6 percent transferred to continue their education.

Related Programs

- Computer Engineering Technology
- Computer Information Systems
- Computer Science
- Information Security & Assurance
- Information Technology: Applications Software Development
- Information Technology: Web Development

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B), SAT and/or ACT scores with a recommended combined SAT score of 1000 (critical reading and math) or a composite ACT score of 21.

INFORMATION TECHNOLOGY: NETWORK ADMINISTRATION - BTech Degree

TYPICAL EIGHT-SEMESTER PROGRAM

First			
CISY	1023	Intro to Information Tech	3
CISY	1123	Intro Computer Prog for IT **OR**	
CISY	1113	Intro to Computer Programming	3
COMP	1503	Freshman Composition	3
	xxx3	Gen Ed Elective - Social Science	3
	xxx3	Gen Ed Elective - Other	3
			15

Second			
CISY	4103	Visual Programming & Dev	3
CISY	2143	Microcomputer Systems	3
LITR	2603	Intro to Literature	3
MATH	xxx3	College Algebra or Above	3
CISY	2153	Database Appl and Prog I	3
HPED	xxx1	Physical Education	1
			16

Third			
CISY	4033	Networking I	3
CISY	3223	Intro to Web Page Development	3
MATH	2124	Statistics Methods and Analysis **OR**	
MATH	1123	Statistics I	3-4
CISY	3283	Internetworking I **OR**	
	xxx3	Professional Elective	3
ACCT	1124	Financial Accounting	4
			16-17

Fourth			
CISY	4053	Linux OS & Scripting	3
BUAD	3153	Fundamentals of Management	3
CISY	5723	Essentials of Info Security	3
SPCH	1083	Effective Speaking	3
CISY	4283	Internetworking II **OR**	
	xxx3	Professional Elective	3
	xxx3	Gen Ed "Other"	3
			18

Fifth			
COMP	5703	Technical Writing II	3
BUAD	5003	Management Communications	3
CISY	6103	Web Server Administration **OR**	
	xxx3	Concentration Elective	3
CISY	5203	Network Administration	3
	xxx3	Gen Ed "Natural Science"	3
	xxx3	Open Elective	3
			18
Sixth			
CISY	7003	Project Management	3
CISY	6703	Network Design Concepts	3
	xxx3	Gen Ed "Other"	3
	xxx3	Open Elective	3
	xxx3	Open Elective	3
	xxx3	Professional Elective - Upper	3
			18
Seventh			
CISY	8303	Software Oper & Interoperability	3
CISY	8603	Seminar in Critical Issues in IT	3
	xxx3	Open Elective	3
	xxx3	Professional Elective - Upper	3
	xxx3	Liberal Arts Elective - Upper	3
			15
Eighth			
CISY	8712	Information Technology Internship****	12
			12

Other social science elective to be selected from social science general education list (for example: sociology, psychology), as approved by adviser.
Social science elective to be selected from American history, western civilization, or other world civilization general education list.

**** GPA of 2.5 or higher required in major courses; GPA of 2.0 minimum overall; internship is student-initiated.

GRADUATION REQUIREMENTS

- 128 credit hours inclusive of physical education course
- 39 credit hours in major field required courses
- 24 credit hours in professional courses
- 30 credit hours in liberal arts/general education courses
- 18 credit hours in core concentration
- a 2.5 grade point average in the major is needed for the required internship
- other requirements as stated in College academic regulations
- 8 general education areas are required with 3 of 5 (art, language, other world civilizations, American history or western civilization)

INFORMATION TECHNOLOGY: WEB DEVELOPMENT

BTech Degree – Code #1506

The bachelor of technology degree in information technology: Web development at Alfred State College is designed to prepare graduates to enter the work force as IT professionals with a special emphasis in Web development and applications. Web publishing, programming, and Web server administration comprise the upper-level of courses. Additionally, the Web is integrated across the entire program beginning with the very first course. Through core courses students are given a general foundation in programming, database administration, networking, and microcomputer systems. Additional upper-level courses in oral and written communication, management, and business are provided. A semester-long internship is included.

A laptop computer is required for students entering the information technology: web development program. Laptop specifications are available at www.alfredstate.edu/required-laptops.

TRANSFER OPPORTUNITIES

Articulation agreements have been established with many community colleges and additional agreements are in development. It is possible, with careful selection of courses, to transfer from a variety of associate degrees including computer information systems, information technology, computer science, and others. Upon completion of the bachelor's degree, students will be prepared to pursue a graduate degree in information technology. The computer information systems degree (AAS) at Alfred State College is especially well suited for transfer into this degree at the junior level.

OCCUPATIONAL OPPORTUNITIES

Organizations of all types and sizes need computer professionals. The primary employment field includes Web administrators and developers. Due to the solid foundation in other areas, graduates will not be limited to these areas; thus, the job opportunities are wide and numerous. They include database administrators, programmers, systems analysts, network support, project managers, user support, IT managers, technical sales, and technical support staff, to name just a few.

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 100 percent are employed.

RELATED PROGRAMS

- Computer Engineering Technology
- Computer Information Systems
- Computer Science
- Digital Media and Animation
- Information Security & Assurance
- Information Technology: Applications Software Development
- Information Technology: Network Administration

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B), SAT and/or ACT scores with a recommended combined SAT score of 1000 (critical reading and math) or a composite ACT score of 21.

INFORMATION TECHNOLOGY: WEB DEVELOPMENT - BTech Degree

TYPICAL EIGHT-SEMESTER PROGRAM

First			
CISY	1023	Intro to Information Tech	3
CISY	1113	Intro to Computer Programming	3
COMP	1503	Freshman Composition	3
	xxx3	Gen Ed "Social Science"	3
	xxx3	Gen Ed "Other"	3
			15
Second			
CISY	4103	Visual Programming & Dev	3
CISY	2143	Microcomputer Systems	3
LITR	2603	Intro to Literature	3
MATH	xxx3	College Algebra or Above	3
CISY	2153	Database Appl & Programming I	3
HPED	xxx1	Physical Education	1
			16
Third			
CISY	4033	Networking I	3
CISY	3223	Intro to Web Page Development	3
MATH	2124	Statistics Methods and Analysis OR	
MATH	1123	Statistics I	3-4
ACCT	1124	Financial Accounting	4
	xxx3	Gen Ed "Other"	3
			16-17
Fourth			
BUAD	3153	Fundamentals of Management	3
		Professional Elective - HCI (5233) OR Linux (4053) recommended	3
SPCH	1083	Effective Speaking	3
	xxx3	Concentration Elective	3
	xxx3	Gen Ed "Other"	3
	xxx3	Open Elective	3
			18
Fifth			
CISY	5303	Web Programming I	3
BUAD	5003	Mgt Communications	3
CISY	6103	Web Server Administration OR	
CISY	6503	Object-Oriented Programming OR	
CISY	7103	Multimedia Computing	3
	xxx3	Gen Ed "Natural Science"	3
	xxx3	Open Elective	3
COMP	5703	Technical Writing II	3
			18

Sixth			
CISY	7203	Web Programming II	3
CISY	7003	Project Management	3
CISY	5723	Essentials of Info Security	3
CISY	5403	Database Concepts	3
	xxx3	Open Elective	3
	xxx3	Professional Elective - Upper	3
			18

Seventh			
CISY	8403	Web Applications	3
CISY	8603	Seminar in Critical Issues in IT	3
	xxx3	Open Elective	3
	xxx3	Professional Elective - Upper	3
	xxx3	Liberal Arts Elective - Upper	3
			15

Eighth			
CISY	8712	Information Technology Internship****	12
			12

Other social science elective to be selected from social science general education list (for example: sociology, psychology), as approved by adviser.

Social science elective to be selected from American history, western civilization, or other world civilization general education list.

**** GPA of 2.5 or higher required in major courses; GPA of 2.0 minimum overall; internship is student-initiated.

GRADUATION REQUIREMENTS

- 128 credit hours inclusive of physical education course
- 39 credit hours in major field required courses
- 24 credit hours in professional courses
- 18 credit hours in core concentration
- 30 credit hours in liberal arts/general education courses
- a 2.5 grade point average in the major is needed for the required internship
- other requirements as stated in College academic regulations
- 8 general education areas are required, with 3 of 5 (art, language, other world civilizations, American history, western civilization)

INTERIOR DESIGN

AAS Degree – Code #0656

This program is designed to provide graduates with basic knowledge and skills for entry-level positions in the interior design discipline. The program consists of a core graphics sequence with additional courses in appropriate technical areas. Computer applications are integrated throughout the four semesters with a strong component in 2D and 3D computer graphics. The faculty consists of interior designers as well as licensed architects and engineers.

A laptop computer is required for students entering the interior design program. Laptop specifications are available at www.alfredstate.edu/required-laptops.

OCCUPATIONAL OPPORTUNITIES

- Interior Designer (after successfully meeting state requirements)
- Interior Rendering Technician
- CAD Technician
- Computer Modeler
- Interior Computer Animator
- Manufacturer's Representative
- Facility Management
- Corporate Space Planning

Upon successful completion of this program, students may continue in Alfred State's BBA program in technology management.

EMPLOYMENT STATISTICS

Employment and transfer rate of 50 percent – 50 percent transferred to continue their education.

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry (Math A)

INTERIOR DESIGN - AAS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
CIAT	1023	Construction Technology 1	3
CIAT	1184	Design Fundamentals 1	4
FNAT	1303	Architectural History I	3
COMP	1503	Freshman Composition	3
	xxx3	Gen Ed/Social Sciences Elective	3
CIAT	2201	Arch Computer Graphic Appl.	1
			17

Second			
CIAT	1433	Furniture & Finishes	3
CIAT	2223	History of Interiors	3
CIAT	2394	Design Fundamentals 2	4
LITR	2603	Introduction to Literature	3
MATH	1423	Explorations in Geometry	3
			16

Third			
CIAT	2204	Interior Design I	4
CIAT	1443	Color, Lighting, and Acoustics	3
CIAT	3304	Construction Technology 2	4
SPCH	1083	Effective Speaking	3
HLTH	1313	Nutrition	3
			17

Fourth			
CIAT	2304	Interior Design II	4
CIAT	4403	Computer Visualization	3
CIAT	4003	Professional Practice 1	3
BUAD	4004	Essent of Entrepreneurship & Small Bus Mgt	4
FNAT	1313	Art History	3
			17

Entry level of student into math and composition/literature sequences is a function of student's high school preparation and mathematics and English placement examinations.

Minimum of "C" is required for CIAT 1184, CIAT 2394, CIAT 2204, and CIAT 2304.

Also required: One unit of physical education.

GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0 which is equivalent to a "C" average.

LIBERAL ARTS & SCIENCES: ADOLESCENT EDUCATION (TEACHER EDUCATION TRANSFER)

AA Degree – Code #1804

Michael Cobb, Program Coordinator
E-mail address: cobbmj@alfredstate.edu

This transfer program prepares students to transfer into baccalaureate programs in adolescent education at public and private colleges and universities. Graduates will have satisfied all of SUNY's general education knowledge requirements and will have completed two courses in a foreign language, one course in adolescent development, one in foundations of education, and at least four courses in one of six concentrations – history/social studies, biology, chemistry, English, math, or physics.

TRANSFER OPPORTUNITIES

Because transfer requirements for students in adolescent education vary across public and private colleges and universities, students should work closely with their faculty adviser to ensure that they meet the entrance requirements of their chosen transfer college. The minimum cumulative grade point average for admission as a transfer student in adolescent education to SUNY colleges and universities varies from 2.5 to 3.0, with some transfer colleges also setting minimum grade point averages in concentration courses and in courses in adolescent development and foundations of education.

EMPLOYMENT STATISTICS

The New York State Department of Labor rates the employment prospects for secondary school teachers as favorable through 2016 while the U.S. Department of Labor expects employment for secondary school teachers to grow by nine percent through 2018.

RELATED PROGRAMS

- Biological Science
- Liberal Arts & Sciences: Humanities
- Liberal Arts & Sciences: Math & Science
- Liberal Arts & Sciences: Social Sciences

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

- History/Social Studies and English concentrations: Algebra (Math A)
- Biology and Chemistry concentrations: Algebra, Geometry, Algebra 2/Trigonometry (Math A and B), Biology, Chemistry
- Math and Physics concentrations: Algebra, Geometry, Algebra 2/Trigonometry (Math A and B), Biology and Chemistry or Physics

LIBERAL ARTS & SCIENCES: ADOLESCENT EDUCATION (TEACHER EDUCATION TRANSFER) - AA Degree

TYPICAL FOUR-SEMESTER PROGRAM
HISTORY/SOCIAL STUDIES CONCENTRATION

FIRST			
COMP	1503	Freshman Comp	3
PSYC	1013	General Psychology	3
HIST	1143	Survey of American HIstory	3
SPAN	1203	Spanish I	3
MATH	xxx3	Math Elective	3
HPED	1111	Health & Wellness	1
			16

SECOND			
PSYC	2033	Adolescent Dev	3
SPAN	2203	Spanish II	3
XXXX	XXX4	Natl. Sc. Elective w/Lab	4
LITR	2343	Children's Lit OR	3
LITR	2603	Intro to LIt	
HIST	2153	Survey of American History II	3
			16

THIRD			
HIST	1113	Western Civilization	3
FNAT	xxx3	Fine Arts Elective	3
PLSC	1053	Intl Relations OR	3
SOCI	1193	Marriage & Family Across World Civ	
ECON	1013	Macroeconomics	3
XXXX	xxx3	Open Elective	3
			15

Fourth			
EDUC	2163	Foundations of Education	3
SPCH	1083	Effective Speaking	3
PLSC	1043	American Government	3
XXXX	XXX3	Open Elective	3
XXXX	xxx3	Liberal Arts Elective	3
			15

BIOLOGY CONCENTRATION

FIRST			
COMP	1503	Freshman Comp	3
PSYC	1013	General Psychology	3
HIST	1143	Survey of American History	3
BIOL	1104	General Biology	4
MATH	1054	Pre-Calculus	4
			17

SECOND			
PSYC	2033	Adolescent Dev	3
LITR	2603	Intro to Lit	3
HIST	1113	Western Civilization	3
BIOL	2204	General Biology II	4
FNAT	XXX3	Fine Arts Elective	3
			16

THIRD			
SPAN	1203	Spanish	3
HPED	1111	Health & Wellness	1
BIOL	4254	General Micro	4
SOCI	1193	Marriage & Family Across World Civ	3
XXXX	XXX	Open Elective	3-4
XXXX	XXX	Liberal Arts Elective	3
			17-18

FOURTH			
SPAN	2203	Spanish II	3
EDUC	2163	Foundations of Education	3
XXXX	XXX4	Natl. Sc. Elective w/Lab	4
SPCH	1083	Effective Speaking	3
XXXX	XXX	Open Elective	3-4
			17
			16-17

CHEMISTRY CONCENTRATION

FIRST			
COMP	1503	Freshman Comp	3
PSYC	1013	General Psychology	3
HIST	1143	Survey of American History	3
CHEM	1984	Chemical Principles	4
MATH	1054	Pre-Calculus	4
			17

SECOND			
PSYC	2033	Adolescent Dev	3
LITR	2343	Children's Lit OR	3
LITR	2603	Intro to Lit	
HIST	1113	Western Civilization	3
CHEM	2984	Chemical Principles II	4
FNAT	XXX3	Fine Arts Elective	3
			16

THIRD			
PLSC	1053	Intl. Relations OR	3
SOCI	1193	Marriage & Family Across World Civ.	
SPAN	1203	Spanish I	3
HPED	1111	Health & Wellness	1
XXXX	XXXX	Open Elective	3-4
XXXX	XXX3	LIberal Arts Elective	3
CHEM	3514	Organic Chemistry	5
			17-18

FOURTH			
EDUC	2163	Foundations of Education	3
SPCH	1083	Effective Speaking	3
SPAN	2203	Spanish II	3
CHEM	4524	Organic Chemistry II	4
XXXX	XXXX	Open Elective	3-4
			16-17

PHYSICS CONCENTRATION

FIRST			
COMP	1503	Freshman Comp	3
PSYC	1013	General Psychology	3
HIST	1143	Survey of American History	3
SPAN	1203	Spanish I	3
MATH	1054	Pre-Calculus	4
			17

SECOND			
PSYC	2033	Adolescent Dev	3
LITR	2343	Children's Lit OR	3
LITR	2603	Intro to Lit	
SPAN	2203	Spanish II	3
PHYS	1044	College Physics I	4
MATH	1084	Calculus I	4
			17

THIRD			
PLSC	1053	Intl. Relations or	3
SOCI	1193	Marriage & Family Across World Civ.	
HIST	1113	Western Civilization	3
MATH	2094	Calculus II	4
PHYS	2044	College Physics II	4
FNAT	XXX3	Fine Arts Elective	3
			17

FOURTH			
EDUC	2163	Foundations of Education	3
SPCH	1083	Effective Speaking	3
MATH	6104	Multivariate & Vector Calculus	4
XXXX	XXX3	Open Elective	3
HPED	1111	Health & Wellness	1
			14

MATH CONCENTRATION

FIRST			
COMP	1503	Freshman Comp	3
PSYC	1013	General Psychology	3
HIST	1143	Survey of American History	3
SPAN	1203	Spanish I	3
MATH	1054	Pre-Calculus	4
HPED	1111	Health & Wellness	1
			17

SECOND			
PSYC	2033	Adolescent Dev	3
LITR	2343	Children's Lit OR	3
LITR	2603	Intro to Lit	
SPAN	2203	Spanish II	3
	XXX4	Nat. Sci. Elective w/Lab	4
MATH	1084	Calculus	4
			17

THIRD			
PLSC	1053	Intl. Relations OR	3
SOCI	1193	Marriage & Family Across World Civ.	
HIST	1113	Western Civilization	3
MATH	2094	Calculus II	4
MATH	3003	Linear Algebra	3
FNAT	XXX3	Fine Arts Elective	3
			16

FOURTH			
EDUC	2163	Foundations of Education	3
SPCH	1083	Effective Speaking	3
MATH	6104	Multivariate & Vector Calculus	4
	XXX3	LIberal Arts Elective	3
MATH	2163	Discrete Mathematics	3
			16

ENGLISH CONCENTRATION

FIRST			
COMP	1503	Freshman Comp	3
PSYC	1013	General Psychology	3
HIST	1143	Survey of American History I	3
SPAN	1203	Spanish I	3
MATH	XXX3	Math Elective	3
HPED	1111	Health & Wellness	1
			16

SECOND			
PSYC	2033	Adolescent Dev	3
LITR	2603	Intro to Lit	3
SPAN	2203	Spanish II	3
	XXX4	Natl. Sci. Elective w/Lab	4
COMP	7003	Classical Rhetoric	3
			16

THIRD			
PLSC	1053	Intl. Relations OR	3
SOCI	1193	Marriage & Family Across World Civ.	
HIST	1113	Western Civilization	3
LITR	3233	Survey of American Lit. I	3
LITR	2343	Children's Lit	3
FNAT	XXX3	Fine Arts Elective	3
			15

FOURTH			
EDUC	2163	Foundations of Education	3
SPCH	1083	Effective Speaking	3
LITR	7203	British Literature	3
	xxx3	Open Elective	3
	XXX3	Liberal Arts Elective	3
			15

GRADUATION REQUIREMENTS

A student must successfully complete all courses in the four-semester program required by his or her concentration and earn a minimum cumulative grade point average of 2.0 ("C" average).

LIBERAL ARTS & SCIENCES: HUMANITIES

AA Degree – Code #0201

Robert Curry, Program Coordinator
E-mail address: curryrl@alfredstate.edu

Liberal arts & sciences: humanities is for those planning to continue their education at a four-year college or university. By careful selection of elective credits, the graduate is qualified to enter a baccalaureate program as a third-year student in a variety of fields. The program also serves an exploratory function for those students who have not decided on a field of study or a specific career.

The liberal arts & sciences: humanities program prepares students for life by stressing the importance of reading, writing, and thinking while developing in them an appreciation of the arts and the wisdom of great minds.

TRANSFER OPPORTUNITIES

Although not limited to these schools, common transfer institutions include Hilbert College and Alfred University. Students may also enter Alfred State's BBA program in technology management.

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 17 percent are employed; 83 percent transferred to continue their education.

RELATED PROGRAMS

- Health Information Technology
- Human Services
- Individual Studies
- Liberal Arts & Sciences: Math & Science
- Liberal Arts & Sciences: Social Science
- Nursing

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra (Math A)
Recommended: Geometry, Biology

LIBERAL ARTS & SCIENCES: HUMANITIES - AA Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
COMP	1503	Freshman Composition	3
	xxx3	Critical Thinking	3
MATH	xxx3	Math Elective	3
	xxx3	Gen Psych or Sociology	3
	xxx3	Western Civilization	3
			15

Second			
LITR	2603	Introduction to Literature	3
	xxx3	Humanities Elective	3
MATH	xxx3	Math Elective	3
HIST	xxx3	American History I or II	3
FNAT	xxx3	Fine Arts	3
			15

Third			
	xxx3	Humanities Elective	3
SOCI	xxx3	Social Science Elective	3
SPCH	1083	Effective Speaking	3
	xxxx	Science Elective	3-4
	xxx3	Open Elective	3
			15-16

Fourth			
	xxx3	Humanities Elective	3
	xxxx	Science Elective	3-4
	xxxx	Open Electives	9
			15-16

All students must take COMP 1503 freshman composition and LITR 2603 introduction to literature.

Each student must take five (5) courses from the following list:

ITAL	1303	Italian I
ITAL	2303	Italian II
LITR	2033	The Short Story
LITR	2343	Children's Literature
LITR	2503	Identity and Literature
LITR	2703	Science Fiction
LITR	2813	Introduction to Film
LITR	2913	Introduction to Poetry
LITR	3233	Survey of American Literature I
LITR	3333	Survey of British Literature I
LITR	7003	Literature and Nature
COMP	3703	Technical Writing
PHIL	1073	Intro to Philosophy
PHIL	2173	Ethics
RELG	7003	Religion of the World
SPAN	1203	Spanish I
SPAN	2203	Spanish II

Also required: Writing portfolio and one unit of physical education.

GRADUATION REQUIREMENTS

(for all liberal arts & sciences: humanities and individual studies students)
Each student must successfully complete 60 credit hours (excluding HPE) with a minimum grade point average of 2.0.

Portfolio Requirement for All Liberal Arts: Humanities Students:

Liberal arts and sciences: humanities (430) students must satisfy the writing portfolio graduation requirement. The writing portfolio, submitted during the student's last semester of study, has these specific requirements:

1. The portfolio must contain a minimum of four papers.
2. One of the four must use outside sources and correct documentation format.
3. Not more than three of the four papers should be from an English or humanities class.
4. One of the papers should be from the student's first semester of study.

5. One paper should represent the student's best work.
6. The portfolio may contain up to two other pieces of writing that the student would like included to demonstrate writing ability (for a maximum of six papers total).
7. If available, a record of the composing process, including prewriting steps and drafts with evidence of editing, should accompany one of the papers.

Papers submitted in the portfolio must be copies (not the originals handed in for class) and be clear of any grades or comments. A signed professor certification form must accompany each paper. The student should indicate on that form the semester the paper was written.

The portfolio must contain a letter to the Department of English and Humanities writing faculty containing these items:

1. a brief explanation of what the assignment was for each of the enclosed papers,
2. a self-evaluation of the work with reference to the Alfred State College writing rubric,
3. any additional information the student would like the writing faculty to consider, and
4. commentary on any increased thinking and writing ability demonstrated throughout the portfolio.

The criteria for evaluation are contained in the ASC writing rubric. Students should include papers that demonstrate these abilities:

1. establish a central idea (thesis) and a controlling viewpoint;
2. create an appropriate organization plan – with a clear beginning, middle, and end – suitable for the audience and purpose of the paper;
3. develop paragraphs with specific, concrete information;
4. write sentences that avoid errors that decrease the writer's credibility; and
5. use external sources appropriately by paraphrasing, quoting, summarizing, and documenting all sources properly.

The writing faculty of the Department of English and Humanities will evaluate the portfolio to determine whether it should be graded "high pass," "pass," or "fail." This evaluation will appear on the student's permanent Alfred State College transcript.

Questions about this graduation requirement should be directed to the student's academic adviser.

WRITING RUBRIC

Papers must demonstrate competence in each of the following areas. A score of 3 in one area indicates competence (meeting the standard) in that area. A total score of 15 or more indicates at least a general level of competence for the whole paper. A total score of 14 or less indicates not meeting the standard. 0 in any one of the categories below indicates that the paper cannot be scored according to the various criteria below.

	EXCEEDS (4 pts/criterion)	**MEETS (3 pts/criterion)**	**APPROACHES (2 pt/criterion)**	**DOES NOT Meet (1pt/criterion)**
Elaboration/ Support/Style	The thesis is original, well established, and intelligently presented. The thesis is crafted well to address a specific and an appropriate audience and is developed to meet or to exceed the assignment specifications.	The writing has a thesis; this thesis gives adequate attention to issues of audience and is developed to meet the assignment specifications.	The writing has a thesis that is unclear and/or inadequate for the subject scope and/or only meets, in part, the assignment specification.	The writing has no thesis and does not meet assignment specifications.
Focus/Coherence/ Organization	The writing as a whole responds intelligently and creatively to the assignment prompt, is highly attentive to audience, has a single and well-directed focus, exhibits a logical flow of ideas and events ordered in clear and coherent paragraphs, and includes an opening that draws the reader in as well as an effective close.	The writing as a whole gives a complete response to the assignment prompt, is appropriate to audience, has a single focus and exhibits a logical flow of ideas and/or events that is ordered in clear and coherent paragraphs, and includes an effective introduction and conclusion.	The writing does not give an adequate response to assignment prompt, is not attentive to audience, has a focus that leaves underdeveloped only some main points, but it does not, in all cases, order ideas in effective paragraphs or have an adequate introduction and conclusion.	The writing does not respond to assignment prompt, is not attentive to audience, does not focus on topic, does not order ideas in complete paragraphs, and does not have an introduction and conclusion.
Purpose/Principle/ Argument	Each main idea is thoroughly and completely supported by details and is cited, when appropriate, according to the MLA, APA or the style specified by the instructor; all details relate to the topic; the choice of details is effective; ideas/events are related by effective transition words and phrases. The writing exhibits a distinctive sentence style and precise, interesting, and vivid word choices.	The main ideas are well supported by details and are cited, when appropriate, according to the specified documentation style; the details are, by and large, connected well to the topic; ideas/events are related by transition words and phrases. The writing uses a language appropriate to the discipline.	The main ideas are not sufficiently supported by details and are not, in many cases, cited according to the specified documentation style; details and/or evidence in some paragraphs may be sketchy; details are frequently unrelated to the topic; transitions are not generally used, sentence style is not maintained; word choice is not fully adequate to convey meaning and appropriate to audience and to discipline.	The main ideas are inadequately or unevenly developed; the narrative details are sketchy or irrelevant and are not cited according to the specified documentation style; few or no transitions are used; the style is not appropriate to audience. The use of language is inadequate.
Revisions	The writing demonstrates a sophisticated and consistent command of Standard English; is free of spelling, capitalization, and usage errors; uses precise syntax; and contains few, if any, errors in punctuation.	The writing demonstrates the knowledge of Standard English; is free of spelling, capitalization, and usage errors; uses correct syntax; and contains few, if any, errors in punctuation.	The writing contains a number and type of errors that, with frequency, obscure meaning; exhibits a consistent command of Standard English; and contains few, if any, spelling, capitalization, or usage errors and few, if any, errors in punctuation.	The number and/or type of errors obscure meaning; there are frequent errors in spelling, capitalization, and usage; there are serious and frequent errors in punctuation; there are fragments or run-on sentences.
Grammar, Usage, and Mechanics	The writing exhibits considerable changes from the rough to the final draft. These revisions as a whole demonstrate the writer's high level of skill in diagnosing issues in areas such as coherence and elaboration and in devising creative and intelligent ways to improve significantly the quality of the written communication.	The revisions as a whole exhibit the writer's ability to diagnose significant issues in areas such as coherence and elaboration and to devise competent solutions to raise measurably the quality of the written communication.	The revisions as a whole exhibit only partial competency on the part of the writer in diagnosing issues in areas such as coherence and elaboration and in devising competent solutions to raise measurably the quality of the written communication.	The writing exhibits little or no change from the rough to final draft.

LIBERAL ARTS & SCIENCES: MATH & SCIENCE

AA Degree – Code #0645

Dr. Earl Packard, Program Coordinator
E-mail address: packared@alfredstate.edu

The mathematics and science emphasis serves students who wish to transfer and enter career programs which depend upon a background in mathematics and/or science.

TRANSFER OPPORTUNITIES

This program offers two options: liberal arts & sciences: math & science or pre-environmental science & forestry. The first allows students the opportunity to concentrate in either math and/or science. This program is designed in such a way that the student and adviser work together to match courses at Alfred State with first- and second-year courses at the desired transfer school so that the student may enter a baccalaureate program as a full third-year student. Some typical fields of study which graduates choose to enter are mathematics, statistics, math or science education, physical education, biology, chemistry, physics, physical therapy, athletic training, engineering, pre-med, pre-vet, dentistry, or pharmacy.

Articulation agreements are available with Alfred University (biology), Syracuse University (environmental science), New York Chiropractic College, and SUNY Health Science Center at Syracuse (joint admission). A cooperative 2+2 articulation agreement in athletic training with Alfred University is available.

Students may also continue in Alfred State's BBA program in technology management.

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 15 percent are employed; 85 percent transferred to continue their education.

RELATED PROGRAMS

- Biological Science
- Individual Studies
- Liberal Arts & Sciences: Humanities
- Liberal Arts & Sciences: Social Science
- Pre-Environmental Science & Forestry

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required:
Algebra, Geometry, and Algebra 2/ Trigonometry (Math A and B); Biology; Chemistry or Physics

Recommended:
Both Chemistry and Physics

LIBERAL ARTS & SCIENCES: MATH & SCIENCE - AA Degree

TYPICAL FOUR-SEMESTER PROGRAM

First	
Freshman Composition	3
Mathematics	3-4
Science	4
Psychology or Sociology	3
Gen Education Elective	3
	16-17

Second	
Literature	3
Mathematics	3-4
Science	4
Gen Education Elective or Philosophy	3
Computer Language	3
	16-17

Third	
Mathematics and/or Science	6-8
Gen Education Elective	3
Free Elective	6
	15-17

Fourth	
Mathematics and/or Science	6-8
Gen Education Elective	3
Free Elective	6
	15-17

Also required: One unit of physical education.

GRADUATION REQUIREMENTS

A minimum of 60 credit hours is required for graduation with a cumulative index of 2.0. Students must also have a cumulative index of at least 2.0 in mathematics and science sequence courses.

LIBERAL ARTS & SCIENCES: SOCIAL SCIENCE

AA Degree – Code #0212

Michael Cobb, Program Coordinator
E-mail address: cobbmj@alfredstate.edu

This transfer program emphasizes course work in the social and behavioral sciences and in the liberal arts. By careful selection of electives, graduates are able to enter baccalaureate programs at the third-year level with all of their 10 general education requirements met.

TRANSFER OPPORTUNITIES

Graduates are qualified to enter baccalaureate programs in a variety of academic disciplines such as psychology, sociology, anthropology, history, and political science as well as in such professional fields as early childhood/childhood education, adolescent education, criminal justice, pre-law, human services management, and business administration. Among the colleges to which recent graduates have successfully transferred are Alfred University, University of Buffalo, Cornell University, SUNY Cortland, SUNY Fredonia, SUNY Geneseo, and St. Bonaventure University.

Students may also continue their education in Alfred State's BBA program in technology management.

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 5 percent are employed; 95 percent transferred to continue their education.

RELATED PROGRAMS

- Human Services
- Human Services Management
- Individual Studies
- Liberal Arts & Sciences: Adolescent Education (Teacher Education Transfer)
- Liberal Arts & Sciences: Humanities
- Liberal Arts & Sciences: Math & Science

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra (Math A)
Recommended: Geometry, Biology

LIBERAL ARTS & SCIENCES: SOCIAL SCIENCE - AA Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
COMP	1503	Freshman Composition	3
PSYC	1013	General Psychology	3
SOCI	1163	General Sociology	3
MATH	xxx3	Math Elective	3
	xxx3	American History Elective	3
			15
Second			
PSYC	1023	Human Development	3
LITR	2603	Introduction to Literature	3
SOCI	xxx3	Sociology Elective	3
MATH	xxx3	Math Elective	3
HIST	1113	Western Civilization	3
			15
Third			
SOCI	1183	Contemporary Social Problems	3
PSYC	xxx3	Psychology Elective	3
FNAT	xxx3	Fine Arts Elective	3
	xxxx	Nat Sci Elective	3-4
	xxxx	Open Elective	3
			15-16
Fourth			
	xxx3	Other World Civiliz Elective	3
	xxxx	Natural Science Elective	3-4
	xxx3	Open Elective	3
	xxx3	Open Elective	3
SOCI	1223	Minority Cultures	3
			15-16

Also required: One unit of physical education.

GRADUATION REQUIREMENTS

A minimum of 61 hours is required for graduation. The overall grade point average required for graduation is 2.0. All students must complete COMP 1503 (freshman composition) and one credit hour of physical education. In addition, all graduates must complete course work in eight of the 10 general education areas established by SUNY. With careful use of their open electives, students may complete all 10 general education areas.

MACHINE TOOL TECHNOLOGY

MACHINE TOOL TECHNOLOGY - AOS Degree – Code #0551

The machine tool technology program features instruction in the safe operation of all basic machine tools, such as lathes, milling machines, drill presses, various saws, and grinding equipment, as well as proper measurement and inspection of parts. Interpreting engineering drawings and mathematical calculations required by all machinists is also presented.

The second year includes shop math and CNC (Computer Numerical Controls) programming with an emphasis on hands-on skills using advanced machine tools. A strong emphasis on shop safety is an integral part of the program. The AOS degree program includes operation of CNC lathes (turning centers), and CNC milling machines (machining centers). This includes set-up as well as operation of the machines. Interpreting engineering drawings and control documents will also be emphasized. The understanding of quality control and how to conduct appropriate measurements and inspection will be integrated into the course work. The intent is to graduate someone with overall advanced machine shop skills.

A full CNC laboratory as well as machining centers, turning centers, and access to an electronic discharge machine are located at the Dresser-Rand facility in Wellsville used by Alfred State machine tool students.

With the successful completion of the two years, an AOS (associate of occupational studies) degree will be awarded in machine tool technology.

The average salary for a machinist in industry today is ranked the seventh highest among all American professions (including doctors, lawyers, etc.), and this average salary is higher than the average salary for all four-year college graduates.

So if earning a high salary is on your list for selecting occupational opportunities, you need to look at machine tool technology. Over 50 percent of all machinists in America today will retire in the next 10 to 15 years. This fact alone shows the tremendous opportunity that awaits the trained and well-qualified machinist.

OCCUPATIONAL OPPORTUNITIES

- CNC Machinist
- Tool and Die Makers
- Machine Setters and Operators
- Machinists
- Mold Makers

Upon successful completion of this program, students may continue in Alfred State's BBA program in technology management.

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 75 percent are employed; 25 percent transferred to continue their education.

RELATED PROGRAMS

Welding Technology

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Applicants for the machine tool technology program must meet the following physical requirements:

- Must be able to perform safely in the shop.
- Must be able to lift 50 pounds up to eye level.
- Must be able to communicate orally with a person six-10 feet away in a shop environment.
- Must be able to visually decipher an oscilloscope monitor and digital/analog meter, and scan tool displays.
- Must be able to diagnose mechanical failures that are distinguished audibly.
- Must be able to understand and retain information found in service repair manuals and use diagnostic flow charts.
- Must be able to visually read an LCD display on welding equipment.
- Must have the dexterity and mobility to weld in all the welding positions to meet all requirements.
- Good eyesight is recommended.

Recommended: Algebra (Math A)

MACHINE TOOL – AOS Degree

First			
MATT	1004	Basic Industrial Machining	4
MATT	1014	Industrial Machining I	4
MATT	1024	Industrial Machining II	4
MATT	1713	Read'g Engineering Drawings I	3
MATT	1913	Machinist Calculations I	3
			18

Second			
MATT	1234	Industrial Machining III	4
MATT	1244	Industrial Machining IV	4
MATT	1254	Industrial Machining V	4
MATT	1723	Read'g Engineering Drawings II	3
MATT	1923	Machinist Calculations II	3
			18

Third			
MATT	2305	Intro CNC Machine Program'g	5
MATT	2315	CNC Industrial Machining I	5
MATT	2325	CNC Industrial Machining II	5
MATT	1733	Geo Dimension & Tolerancing	3
			18

Fourth			
MATT	2435	CNC Industrial Machining III	5
MATT	2445	CNC Industrial Machining IV	5
MATT	2455	CNC Industrial Machining V	5
MATT	2803	Senior Project	3
			18

GRADUATION REQUIREMENTS:

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

Students are required to have earned a minimum grade of "C" in MACH. CALC. I & II also MATT 4003 senior project. (Articulation is available in MACH. CALC. area.)

MARKETING

AAS Degree – Code #0633

Steven Reynolds, Program Coordinator
E-mail address: reynolsa@alfredstate.edu

The American Marketing Association defines marketing as "the process of planning and executing the conception, promotion, and distribution of ideas, goods, and services to create exchanges that satisfy individual and organizational objectives." Marketing includes the numerous business activities required to satisfy the needs of the consumer and industrial buyer. The marketing program at Alfred State College focuses on the consumer and industry. Communication skills are emphasized in basic courses in management, accounting, advertising, consumer behavior, industrial marketing, and salesmanship. The program's liberal arts foundation provides a basis for the human relations elements in the study of marketing.

A laptop computer is recommended, but not required, for students entering the marketing program. The College will provide a list of appropriate laptops and wireless modem cards to all students who have been accepted to attend Alfred State College.

TRANSFER OPPORTUNITIES

Students may transfer directly into one of our own BBA degree programs or to another college. Although not limited to these schools, common transfer institutions include Alfred University, St. Bonaventure University, Rochester Institute of Technology, St. John Fisher College, SUNY at Albany, University at Buffalo, SUNY College at Brockport, SUNY College at Fredonia, SUNY College at Geneseo, SUNY College at Oneonta, SUNY College at Oswego, SUNY at Binghamton, Canisius College, Niagara University, and Hilbert College.

OCCUPATIONAL OPPORTUNITIES

- Consumer and Industrial Sales
- Service Institutions
- Banks
- Advertising Agencies
- Financial and Credit Agencies
- Insurance Companies
- Recreational Businesses
- Tourist Bureaus
- Transportation Systems

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 25 percent are employed; 75 percent transferred to continue their education.

RELATED PROGRAMS

- Accounting
- Business Administration (Transfer)
- Business Administration (BBA)
- Business Management (Career)
- Financial Planning
- Financial Services
- Technology Management

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra (Math A)
Recommended: Geometry, Algebra 2/Trigonometry (Math B)

MARKETING - AAS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
MKTG	2073	Principles of Marketing	3
ACCT	1124	Financial Accounting	4
CISY	1103	Information Technology Management	3
COMP	1503	Freshman Composition	3
MATH	xxx3	Math Elective	3
HPED	xxx1	Physical Education Elective	1
			17
Second			
ACCT	2224	Managerial Accounting	4
BUAD	2033	Business Communications	3
BUAD	3153	Fundamentals of Management	3
MATH	xxx3	Math Elective	3
	xxx3	Humanities Gen Ed Elective	3
	xxx3	Gen Ed Elective	3
			19
Third			
BUAD	3043	Business Law I	3
ECON	1013	Macroeconomics	3
MKTG	1033	Advertising Principles	3
BUAD	4203	Personal Financial Planning	3
	xxx3	Business/Computer Elective	3
			15
Fourth			
BUAD	4053	Business Law II	3
ECON	2023	Microeconomics	3
MKTG	1063	Principles of Sales	3
MKTG	3153	Web Design & Marketing	3
BUAD	xxx3	Business Elective	3
			15

GRADUATION REQUIREMENTS

66 semester hours with a 2.0 cumulative index.

MASONRY

AOS Degree – Code #0401

George Richardson, Program Coordinator
E-mail address: richargh@alfredstate.edu

The building construction program provides basic instruction in masonry. Each year there are students desiring additional instruction in masonry and employers seeking graduates with additional masonry skills. This program provides instruction in an extensive masonry program in the second, or senior, year. All masonry students must previously complete the common building construction freshman year program in good standing. Each student may specify in his/her initial application the desire for masonry, or may have the option of choosing masonry after completing the freshman year.

OCCUPATIONAL OPPORTUNITIES

- Brick or Stone Salesman
- Kiln Mason
- Construction Foreman
- Estimator
- Salesperson
- Private or Commercial Remodeler
- Maintenance Supervisor
- Construction Superintendent
- Concrete Foreman
- Expediter
- Contractor
- Mason

Upon successful completion of this program, students may continue in Alfred State's BBA program in technology management.

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 78percent are employed; 22 percent transferred to continue their education.

RELATED PROGRAMS

Air Conditioning & Heating Technology
Building Trades: Building Construction
Electrical Construction and Maintenance Electrician

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Applicants in the masonry program must be able to meet the following physical requirements:

- Must be able to lift 50 pounds to shoulder height.
- Must be able to perform safely in the laboratory.
- Must be able to communicate orally with a person 20 feet away.
- Must be able to climb a ladder.
- Must be able to stand for long periods of time.
- Must be able to visually read from a blueprint or drawing.
- Must be able to hear a backup warning alarm.

Recommended: Algebra (Math A)

MASONRY- AOS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
BLCT	1132	Estimating I	2
BLCT	1142	Masonry I	2
BLCT	1021	College Life Skills	1
BLCT	1023	Construction Essentials I	3
BLCT	1024	Construction Essentials II	4
BLCT	1034	Work Place Envir & Safety	4
BLCT	1022	Wood Fabrication Tech I	2
			18
Second			
BLCT	2132	Estimating II	2
BLCT	2142	Masonry II	2
BLCT	2044	Construction Essentials III	4
BLCT	2054	Construction Essentials IV	4
BLCT	2064	Structural Components	4
BLCT	2032	Wood Fabrication Tech II	2
			18
Third			
BLCT	3159	Masonry III	9
BLCT	3169	Masonry IV	9
			18
Fourth			
BLCT	4176	Masonry V	6
BLCT	4186	Masonry VI	6
BLCT	4043	Masonry Sketching & Detailing	3
BLCT	4053	Blueprint Reading for Masonry Systems	3
			18

GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a “C” average.

MECHANICAL DESIGN ENGINEERING TECHNOLOGY

AAS Degree – Code #1336 ☐

Christopher Tomasi, Program Coordinator
E-mail address: tomasicj@alfredstate.edu

Mechanical design engineering technology graduates pursue careers in the design of machinery and industrial consumer products. Related areas of employment include technical sales, automotive component design, manufacturing, and performance testing of machines and products. Graduates will be able to use industry accepted codes and specifications such as ANSI-ASME, AGMA, AWS, AISC, ASTM, and ABMA to complete mechanical analysis and create working industrial drawings. This will be accomplished using the latest two-dimensional CAD and three-dimensional solid modeling software packages. Machinery will be animated for motion analysis, and strength calculations will be performed. Excel will be used to perform parametric mechanical analysis for calculations to determine the size and dimensions of components and parts. The program provides general mechanical engineering technology fundamentals with an emphasis in the design and development of products and machines.

The mechanical design engineering technology program is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology, Inc. [TAC/ABET, 111 Market Place Suite 1050 Baltimore, MD 21202; (410) 347-7700, Fax: (410) 625-2238; e-mail: accreditation@ABET.org; Web site: http://www.ABET.org].

A laptop computer is required for students entering the mechanical design engineering technology program. Laptop specifications are available at www.alfredstate.edu/required-laptops.

PROGRAM EDUCATIONAL OBJECTIVES

Program educational objectives were established with the assistance of the Industrial Advisory Committee and are reviewed periodically. The mechanical design engineering technology program produces graduates who:

1. have knowledge and skills to succeed in continued technical and formal education;
2. can function effectively as technicians in the mechanical or related field of engineering technology;
3. can function professionally and with ethical responsibility as an individual and on multidisciplinary teams;
4. can demonstrate the ability to communicate effectively in oral, written, visual, and graphical modes in both interpersonal and group/team environments;
5. can continuously improve, engage in lifelong learning, and adapt to rapidly changing technologies;
6. can effectively design products and machines using sound engineering principles and practice;
7. can produce proper documentation for design using appropriate methods such as CAD drawings, calculations, and codes.

TRANSFER OPPORTUNITIES

Mechanical design engineering technology is a 2 + 2 program in which the graduate, at the successful completion of two years of course work, earns an AAS degree. The graduate can start his career in industry or continue directly into the third and fourth years to complete a bachelor of science in mechanical engineering technology here at Alfred State College. The direct continuance of studies into the third and fourth years enhances the graduate's skills in a wider selection of mechanical engineering technology courses. The graduate improves and expands career opportunities with a special emphasis in mechanical design.

OCCUPATIONAL OPPORTUNITIES

The graduate is prepared for entry level careers in the industrial environment such as:

- Mechanical Designer
- Aerospace Industry
- Manufacturing Process Planner
- Fluid Power System Designer
- Test Technician
- Field Service
- CAD Drafter
- Heavy Equipment Designer
- Installation Supervisor
- Mechanical CAD Designer
- Mechanical Technician
- Product Development
- Sales and Applications
- Machinery Field Technician
- Product Designer
- Tool and Die Design
- Hydraulic Designer

INTERNSHIP OPPORTUNITIES

Internships are possible with many industries through Career Development located in the Hunter Student Development Center and may be eligible for technical credit.

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 100 percent are employed.

RELATED PROGRAMS

- CAD/CAM Technology
- Electromechanical Engineering Technology
- Mechanical Engineering Technology

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)
Recommended: Physics

MECHANICAL DESIGN ENGINEERING TECHNOLOGY - AAS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
MECH	**1003**	**Intro to MECH / Lab**	**3**
MECH	**1603**	**Graphics / CAD**	**3**
MECH	**1203**	**Materials Science**	**3**
COMP	1503	Freshman Composition	3
MATH	1033	College Algebra	3
HPED	xxx1	Phys Ed Elective	1
			16

Second			
MECH	**1643**	**Manufacturing Processes**	**3**
MECH	**1641**	**Manufacturing Processes Lab**	**1**
MECH	**2543**	**Advanced CAD Applications**	**3**
MECH	**4523**	**Control System Fundamentals**	**3**
MATH	2043	College Trigonometry	3
SOCI	1193	Marriage and Family* OR	3
PLSC	1043	American Government	3
			16

Third			
MECH	**3223**	**Mechanical Design Principles**	**3**
MECH	**3113**	**Statics**	**3**
MECH	**3203**	**CAM**	**3**
PHYS	1024	General Physics I	4
MATH	1063	Technical Calculus I	3
LITR	2603	Introduction to Literature	3
			19

Fourth			
MECH	**4024**	**Dynamics**	**4**
MECH	**4224**	**Mechanical Systems Design**	**4**
MECH	**4003**	**Solid Modeling**	**3**
PHYS	2023	General Physics II	**3**
MATH	2074	Technical Calculus II	4
			18

GRADUATION REQUIREMENTS

- 69 maximum credits
- 20 credits of liberal arts and sciences
- **2.0 grade point average in major courses** (in bold text above)
- 2.0 cumulative grade point average
- Approval of department faculty
- 5 of 10 General Education areas

* Any student who does not enroll in SOCI 1193 or PLSC 1043 must enroll in two courses that satisfy General Education requirements.

MECHANICAL ENGINEERING TECHNOLOGY

AAS Degree - Code #0493
BS Degree - Code #0235

Milton Brown, AAS Program Coordinator
E-mail address: brownmc@alfredstate.edu
Dr. Edward Tezak, BS Program Coordinator
E-mail address: tezakeg@alfredstate.edu

Mechanical engineering technology program graduates are prepared to be mechanical technicians for industry in engineering-related areas including automotive component design, heating, ventilation, and air conditioning (HVAC), process and component design, mechanical systems design, energy systems, product development, and technical support and sales. Graduates will be able to design, specify, test, analyze, and install mechanical systems. They will have broad content exposure through the development of analytical skills and theory in the classroom and experience working with engines, complete energy systems, compressors, fans, pumps, controls, instrumentation, engineering graphics, and material testing. Every bachelor graduate is required to complete a capstone project to bring together theoretical and practical skills.

Mechanical engineering technology is accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology [TAC/ABET, 111 Market Place Suite 1050 Baltimore, MD 21202; (410) 347-7700, Fax: (410) 625-2238; e-mail: accreditation@ABET.org; Web site: http://www.ABET.org].

A laptop computer is required for students entering the mechanical engineering technology programs. Laptop specifications are available at www.alfredstate.edu/required-laptops.

PROGRAM EDUCATIONAL OBJECTIVES

Program educational objectives were established with the assistance of the Industrial Advisory Committee and are reviewed periodically. The AAS in the mechanical engineering technology program produces graduates who:

1. have knowledge and skills to succeed in continued technical and formal education;
2. can function effectively as technicians in the mechanical or related field of engineering technology;
3. can function professionally and with ethical responsibility as an individual and on multidisciplinary teams;
4. can demonstrate the ability to communicate effectively in oral, written, visual, and graphical modes in both interpersonal and group/team environments;
5. can continuously improve, engage in lifelong learning, and adapt to rapidly changing technologies;
6. can function effectively in an applications-oriented environment by using the techniques, skills, and modern engineering technology tools necessary to support applied technology practice.

In addition to the AAS program educational objectives, the BS in the mechanical engineering technology program produces graduates who:

1. can function effectively as technologists in the mechanical or related field of engineering technology;
2. can function effectively in open-ended activities involving applications, design, analysis, and implementation;
3. can function effectively in leadership or supervisory roles.

TRANSFER OPPORTUNITIES

A cooperative/transfer program involving one year of appropriate study in either mechanical engineering technology or engineering science at selected regional community colleges, together with a second year of study at Alfred State, will result in the awarding of the AAS degree to qualified graduates.

Graduates from the associate-level mechanical engineering technology program are eligible to continue their education by enrolling in a baccalaureate degree program in mechanical or related engineering technology at Alfred State or elsewhere. Our mechanical engineering technology AAS two-year degree program is the same as the first two years of the mechanical engineering technology BS four-year degree program.

INTERNSHIP OPPORTUNITIES

Internships are possible with many industries through Career Development located in the Hunter Student Development Center and may be eligible for technical credit.

OCCUPATIONAL OPPORTUNITIES

- Automotive Industry
- Aerospace Industry
- Petroleum Industry
- HVAC&R Industry

- Utility Companies
- Engineering Aide
- Development/Design
- Sales and Applications
- Test Technicians
- Field Service
- Process Equipment Industry
- Installation Supervision

EMPLOYMENT STATISTICS

Employment and transfer rate:
Mechanical Engineering Technology (AAS degree): 100 percent - 100 percent transferred to continue their education.
Mechanical Engineering Technology (BS degree):100 percent; 94 percent are employed; 6 percent transferred to continue their education.

RELATED PROGRAMS

- Electromechanical Engineering Technology
- Mechanical Design Engineering Technology

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B)
Recommended: Physics

MECHANICAL ENGINEERING TECHNOLOGY - AAS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
MECH	**1003**	**Intro to MET/Lab**	**3**
MECH	**1603**	**Graphics/CAD**	**3**
MECH	**1203**	**Materials Science**	**3**
COMP	1503	Freshman Composition	3
MATH	1033	College Algebra	3
HPED	xxx1	Physical Education Elective	1
			16

Second			
MECH	**1643**	**Manufacturing Processes**	**3**
MECH	**1641**	**Manufacturing Processes Lab**	**1**
MECH	**4523**	**Control System Fundamentals**	**3**
LITR	2603	Intro to Literature	3
MATH	2043	College Trigonometry	3
PHYS	1024	General Physics I	4
			17

Third			
MECH	**3113**	**Statics**	**3**
MECH	**3124**	**HVAC Systems**	**4**
MECH	**3223**	**Mechanical Design Principles**	**3**
MATH	1063	Technical Calculus I	3
PHYS	2023	General Physics II	3
SOCI	1193	Marriage and Family* OR	
PLSC	1043	American Government	3
			19

Fourth			
MECH	**4024**	**Dynamics**	**4**
MECH	**4224**	**Mechanical Systems Design**	**4**
MECH	**4003**	**Solid Modeling**	**3**
MECH	**3643**	**Manufacturing Management**	**3**
MATH	2074	Technical Calculus II	4
			18

GRADUATION REQUIREMENTS

- 70 maximum credits
- 20 credits of liberal arts and sciences
- **2.0 grade point average in major courses** (in bold text above)
- 2.0 cumulative grade point average
- Approval of department faculty
- 5 of 10 General Education areas

* Any student who does not enroll in SOCI 1193 or PLSC 1043 must enroll in two appropriate General Education courses.

ENTRANCE REQUIREMENTS/RECOMMENDATIONS (BS)

Required: Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B), SAT and/or ACT scores with a recommended combined SAT score of 1000 (critical reading and math) or a composite ACT score of 21.
Recommended: Physics

MECHANICAL ENGINEERING TECHNOLOGY – BS Degree

TYPICAL FIVE- THROUGH EIGHT-SEMESTER PROGRAM

Fifth			
MECH	**7114**	**Applied Thermodynamics**	**4**
MECH	**5334**	**Mechanics of Materials**	**4**
COMP	5703	Technical Writing II	3
MATH	6114	Differential Equations	4
CHEM	5013	Applied Chem Principles	3
			18

Sixth			
MECH	**6334**	**Fluid Mechanics**	**4**
MECH	**7334**	**Heat Transfer**	**4**
MECH	**6204**	**Mechanical Power Systems**	**4**
SPCH	1083	Effective Speaking	3
MATH	7123	Statistics for Engineering Tech	3
			18

Seventh			
EMET	**5004**	**Instrumentation**	**4**
BSET	**7001**	**Senior Seminar/Project Design**	**1**
MECH	**7223**	**Energy Systems**	**3**
MECH	**7503**	**Vibrations**	**3**
MATH	7113	Economic Analysis for Engr Tech	3
	xxx3	Liberal Arts/Science Elective	3
			17

Eighth			
BSET	**8003**	**Senior Technical Project**	**3**
MECH	**7153**	**Fluid Power**	**3**
		OR	
BSET	**8006**	**Senior Internship**	**6**
	xxx3	Liberal Arts/Science Elective	3
	xxx3	Liberal Arts/Science Elective	3
	xxx3	Gen Ed Elective	3
			15

Social Science Electives:

SOCI	1163	General Sociology
SOCI	1193	Marriage & Family Across World Civ
PSYC	1013	General Psychology

Typical General Education Electives:

HIST	1113	History of Western Civilization
HIST	1143	Survey of American History I
HIST	2153	Survey of American History II
PLSC	1043	American Government
PLSC	1053	International Relations
FNAT	1013	Art Appreciation
FNAT	1023	Introduction to Theatre
FNAT	1313	Art History
FNAT	2413	Music History

BACHELOR OF SCIENCE DEGREE GRADUATION REQUIREMENTS

- Completion of above courses
- 138 maximum credit hours
- 45 upper division credit hours
- 60 credit hours of liberal arts and sciences
- **2.0 grade point average in major courses** (in bold text on previous page)
- 2.0 cumulative grade point average
- Approval of department faculty
- 7 of 10 General Education areas

Courses which repeat or significantly overlap courses taken in the student's associate degree program cannot be taken for upper level credit. If the associate degree covered the subject matter in one of the required baccalaureate courses, a different course must be substituted and approved by the faculty adviser.

CERTIFICATION OR LICENSURE

The bachelor of science in engineering technology is recognized as a "professional degree" that qualifies for experience/education credit toward Professional Engineering (PE) licensure. Graduates from Alfred State's program are allowed six years of the required 12 years of education/experience credit and are eligible to take the Fundamentals of Engineering (FE), formerly called Engineer-in-Training (EIT), examination upon graduation.

MOTORSPORTS TECHNOLOGY

AOS Degree - Code #1619

This specialization includes 1,800 hours of practical experience and classroom training applicable to the motorsport field. Program includes brake systems, alignment procedures, electronic controls, engine overhaul, and transmission overhaul. A major emphasis in the program is to teach the students fabrication and set-up on various types of race vehicles.

OCCUPATIONAL OPPORTUNITIES

- Chassis Specialist
- High Performance Motorsport Technician
- Crew Foreman
- Pit Crew Member
- Engine Builder
- Transmission Builder

Upon successful completion of this program, students may continue in Alfred State's BBA program in technology management.

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 82 percent are employed; 18 percent transferred to continue their education.

RELATED PROGRAMS

- Autobody Repair
- Automotive Parts Technology
- Automotive Service Technician
- Mechanical Engineering Technology
- Welding Technology

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Applicants in the motorsports technology program must meet the following physical requirements:

- Must be able to follow all safety standards in each shop.
- Must be able to lift 50 pounds to eye level without assistance.
- Must be able to communicate orally with a person six-10 feet away.
- Must be able to diagnose mechanical failures that are distinguished audibly.
- Must be able to visually read information retrieved from our informational sources, computers, and manuals.
- Must have a valid driver's license.

Recommended: Algebra (Math A)

CERTIFICATION OR LICENSURE

Students may take Automotive Service Excellence (ASE) certification exams.

MOTORSPORTS TECHNOLOGY - AOS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
AUTO	1109	Brakes, Steering, and Suspension Systems	9
AUTO	1124	Automotive Welding	4
AUTO	1135	Automotive Basic Electronics & Component Overhaul	5
			18
Second			
AUTO	3409	Engine Service	9
AUTO	4449	Drive Train Service	9
			18
Third			
AUTO	3506	Intro to Motorsports	6
AUTO	3504	M/S Fabrication I	4
AUTO	3514	Racing Suspension	4
AUTO	3524	High Performance Tune-up/Electronic	4
			18
Fourth			
AUTO	3535	High Performance Engine Building	5
AUTO	3544	M/S Aerodynamics	4
AUTO	3534	High Performance Steering, Brake & Chassis	4
AUTO	3545	M/S Fabrication II	5
			18

GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a “C” average.

NURSING- AAS

AAS Degree - Code #0622

The nursing program prepares individuals to become registered professional nurses. Courses are sequential and progress from simple to more complex situations with specialized content in obstetrics, psychiatric, and pediatric nursing integrated throughout. Learning is enhanced through the use of skill practice for a "hands-on" approach to gain expertise.

Clinical experience, an essential part of each nursing course, further enables students to gain technical competence to apply theoretical knowledge with practice. During the first year, there is one seven-hour clinical lab a week; during the second year, there are two seven-hour labs weekly. Transportation to selected clinical sites may be provided/available.

The program is accredited by the National League for Nursing Accrediting Commission [3343 Peachtree Road, NE, Suite 500, Atlanta, GA 30326; phone (404) 975-5000] and registered by NY State Education Department.

A computer with Internet access and Microsoft Word is required for the nursing program. In addition, an I-Pod Touch without a phone or camera (or with camera disabled) is required.

The nursing program is designed to be completed in two academic years, but may be revised to meet individual needs. Licensed practical nurses or transfer students from other nursing programs may be eligible for advanced placement.

Students must earn a "C" in Nursing I & II and Anatomy & Physiology I & II and a "C+" in Nursing III & IV to progress in the nursing program. Competency in medication clinical computation is required and is tested as part of the Nursing II and III courses.

Further, specific policies related to progression in and readmission to the nursing program are publicized to enrolled nursing students in the Nursing Policies and Procedures Handbook. The Nursing Policies and Procedures Handbook is distributed to nursing students each year as part of the syllabus in the four major nursing courses.

The determination of a student's physical ability to complete the nursing program is based on an individualized assessment that relies on current medical evidence or on the best available objective evidence. If a student's physical ability compromises or threatens the health or safety of others, he/she is not "qualified" and therefore may be denied enrollment or continuation in the program.

In addition to meeting the College health requirements, nursing students are required to provide documentation of an annual PPD and a self-report health assessment. Hepatitis B vaccine or declination of vaccine is also required by affiliating agencies. A policy regarding chemical impairment is publicized to enrolled nursing students.

Any student wishing more information should contact the nursing program director.

FACILITIES

Facilities used for clinical experiences include St. James Mercy Health, Hornell; Noyes Memorial Hospital, Dansville; Jones Memorial Hospital, Wellsville; Olean General Hospital, Olean; Charles C. Cole Hospital, Coudersport, PA; Cuba Memorial Hospital, Cuba; Wyoming County Community Hospital, Warsaw, as well as other area facilities. Some facilities require criminal background checks prior to clinical attendance.

OCCUPATIONAL OPPORTUNITIES

- Hospitals
- Clinics
- Long-term Care Facilities
- Industry
- Ambulatory Settings
- Schools
- Home Health Care
- Health Insurance Providers

EMPLOYMENT STATISTICS

Employment and transfer rate of 98 percent – 78 percent are employed; 20 percent transferred to continue their education.

RELATED PROGRAMS

- Biological Science
- Health Information Technology
- Human Services
- Liberal Arts & Sciences: Humanities

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: It is essential that students are able to fully participate in clinical, caring for clients as assigned. Established entrance requirements for nursing students include being able to:

- ambulate (walk) without assistive devices

- lift at least 30 pounds
- function in a safe manner, not placing clients in jeopardy
- maintain confidentiality in regard to professional practice
- perform effectively under stress, adjusting to changing situations
- communicate effectively, orally and in writing

Required: Algebra (Math A), Biology, Chemistry at high school level; if not taken in high school, then college course with "C" or better is required. Biology: BIOL 2303 Human Biology or BIOL 1104 General Biology I. Chemistry: CHEM 1013 Introductory Chemistry I. Algebra: MATH 1004 Mathematical Concepts. or Math 1014 Algebra Concepts
Recommended: Combined SAT score of 900 (critical reading and math)

CERTIFICATION OR LICENSURE

Graduates are eligible to apply for licensure as a Registered Professional Nurse (RN-NCLEX) in any state.

Completion of the nursing program does not assure registration as a registered professional nurse. Graduates of this nursing program meet the education requirements for admittance to the RN licensure exam; however, there is a requirement that the applicant be of "good moral character" and a fee must be paid for the test and license. On the application for New York State licensure, the applicant is required to truthfully answer the following questions:

- Have you ever been found guilty after trial, or pleaded guilty, no contest, or nolo contendere to a crime (felony or misdemeanor) in any court?
- Are criminal charges pending against you in any court?
- Has any licensing or disciplinary authority refused to issue you a license or ever revoked, annulled, cancelled, accepted surrender of, suspended, placed on probation, refused to renew a professional license or certificate held by you now or previously, or ever fined, censured, reprimanded, or otherwise disciplined you?
- Are charges pending against you in any jurisdiction for any sort of professional misconduct?
- If the answer to any of the questions is yes, the applicant must offer full explanation and establish his/her good moral character with the State Education Department, prior to earning a license.

REGISTERED NURSE PROGRAM NURSING - AAS Degree

TYPICAL TWO-YEAR PROGRAM

First			
COMP	1503	Freshman Composition	3
BIOL	1404	Anatomy & Phys I **	4
NURS	1109	Nursing I	9
			16

Second			
PSYC	1013	General Psychology	3
BIOL	2504	Anatomy & Phys II ***	4
NURS	2209	Nursing II	9
			16

Third			
PSYC	1023	Human Development	3
BIOL	4254	General Microbiology	4
NURS	3311	Nursing III	11
			18

Fourth			
SOCI	1163	Gen Sociology	3
LITR	xxx3	Literature	3
NURS	4411	Nursing IV	11
			17

*Minimum of a "C" grade is required for nursing I and II; minimum of a "C+" grade is required for nursing III and IV.
**BIOL 1404 with a "C" is a prerequisite for NURS 2209
***BIOL 2504 with a "C" is a prerequisite for NURS 3311

Also required: One unit of physical education.

GRADUATION REQUIREMENTS

- 40 credits of nursing (nursing I, II, III, IV)
- 12 credits of natural science (anatomy & physiology I and II, microbiology)
- 9 credits of social science (general psychology, general sociology, human development)
- 6 credits of English/humanities (freshman composition, literature)
- 1 credit of physical education

RN TRANSFER PROGRAM

Approximately eight percent of Alfred State's graduates transfer directly into a baccalaureate nursing program. Alfred State College offers a 2+2 baccalaureate nursing program. All graduates of the AAS program are eligible for admission to the upper level BS nursing program. Courses taken at Alfred State may be awarded transfer credit toward the bachelor of science degree at many colleges and universities.

Alfred State's 3+1 RN Transfer Program allows students to complete their third year on the Alfred State campus and then transfer for their fourth year at Brockport.

NURSING - BS

TYPICAL TWO-YEAR PROGRAM

First			
NURS	5003	Ethical Issues in Health Care	3
NURS	5023	Contemporary Nursing	3
MATH	1123	Statistics	3
SPCH	1083	Effective Speaking	3
XXXX	xxx3	Liberal Arts Elective - Upper	3
			15

Second			
NURS	6003	Nursing Leadership & Management	3
NURS	6413	Health Assessment & Promotion Across the Lifespan	3
BIOL	6403	Advanced Pathophysiology	3
XXXX	xxx3	General Education Elective (FA, FL, WC or AH)	3
HLTH	1313	Nutrition	3
			15

Third			
NURS	7003	Nursing Research	3
NURS	7004	Population Focused Care in the Community	4
XXXX	xxx3	Liberal Arts Elective	3
XXXX	xxx3	Liberal Arts Elective - Upper	3
XXXX	xxx3	Liberal Arts Elective - Upper	3
			16

Fourth			
NURS	xxx3	Nursing Elective	3
NURS	8002	Nursing Informatics	2
NURS	8013	Professional Capstone	3
XXXX	xxx3	Open Elective	3
ANTH	5113	Cross Cultural Encounters	3
XXXX	xxx3	Liberal Arts Elective - Upper	3
			17

*Minimum of a “C” grade is required for upper-division nursing courses. A 2.0 GPA must be maintained throughout the program.

GRADUATION REQUIREMENTS

- 27 credits of upper-level nursing
- 3 credits of open electives
- 21 credits of liberal arts and sciences
- 12 credits of upper level liberal arts electives
- 1 credit of physical education if not transferred

ARTICULATION AGREEMENTS

Articulation agreements are in progress between multiple regional community colleges and Alfred State College for the BS-N program.

NURSING - BS

BS Degree - Code #0291

Alfred State College now offers a bachelor of science degree in nursing (BS–N), an upper-division completion program which enhances students' knowledge and skills foundation to function more autonomously and interdependently in diverse, complex, and dynamic health care environments. Moreover, the program will enhance students' potential to expand their responsibilities in practice to be designers, coordinators, and managers of care. Lastly, the program will serve as a solid academic foundation for advanced study in nursing at the graduate level.

The graduate will be prepared to assume a leadership role in the health care delivery system using gained experience, research, and technology for evidence-based decision making. The baccalaureate graduate will be able to deliver, design, and coordinate care for a variety of individuals from diverse backgrounds to improve client outcomes.

Applicants must have completed an accredited or state-approved associate degree or diploma program in nursing and be a qualified registered professional nurses (RN). Those who have not yet passed the NCLEX–RN must obtain their RN license to progress into the second semester BS–N courses.

The core foundational nursing courses are arranged to increase the student's knowledge base and skill level for the expanded role as a baccalaureate-prepared practitioner. The program is designed to prepare a generalist, thus, contains no specialization concentrations. A professional capstone course (NURS 8013) is required as a culminating educational experience of the BS–N program.

All of the BS–N nursing courses are offered in a blended format with online presentation typically coupled with two in-residence classes per semester and have been designed to allow for flexibility within a structured learning environment and to foster face-to-face relationships between and among the instructor and learners.

Two required BS–N courses have clinical components to further advance the student's knowledge base and skills level. Health assessment and promotion across the lifespan (NURS 6413) has a one-credit clinical laboratory component that may be virtual, self-directed, or campus-based. Population focused care in the community (NURS 7004) allows the student an opportunity to address clients with special needs or vulnerable populations in the community through a structured, precepted clinical experience.

Content and curricular aspects relating to rural nursing will be explored to gain an understanding of emerging issues and develop graduates who are effective in autonomous roles. The population focused care in the community course requires a guided preceptor clinical component which will be overseen and evaluated by the course instructor.

A computer with Internet access and Microsoft Word is required for the nursing program.

FEATURES & FACILITIES

- Provide upper-level knowledge and skills needed to care for clients and populations in a variety of settings
- Predominantly virtually based with individualized face-to-face contact with faculty
- Laboratory experience access to high fidelity simulation

OCCUPATIONAL OPPORTUNITIES

Leadership, management, research, education, and practice opportunities in a variety of settings, including hospitals, ambulatory setting, clinics, schools, long-term care facilities, industry, and health insurance providers.

EMPLOYMENT STATISTICS

The BS-N program was established August 2010; therefore, no employment survey details have been collected.

ADMISSIONS REQUIREMENTS

Admission to the BS-Nursing program requires graduation from an approved associate degree nursing or certified diploma program and plans to secure licensure as a Registered Professional Nurse by completion of the first semester in the program. The minimum GPA requirement for admission is 2.00. The applicant's associate degree course work will include at least 30 credits of nursing, eight credits of anatomy and physiology, a lab course in microbiology, and course work in communication, literature, psychology, and sociology. The applicant's diploma course work will include at least 30 credits of nursing, eight credits of anatomy and physiology, a lab course in microbiology, and will follow the voluntary transfer NY State model program. Students may take nine nursing upper level credits prior to matriculating in the BS program.

ENTRANCE REQUIREMENTS

Students must have an active, unencumbered U.S. license to progress into the second semester of BS-N courses. It is essential that students are able to fully participate in clinical, caring for clients as assigned. Established entrance requirements for nursing students include being able to:

- ambulate (walk) without assistive devices
- lift at least 30 pounds
- function in a safe manner, not placing clients in jeopardy
- maintain confidentiality in regard to professional practice
- perform effectively under stress, adjusting to changing situations
- communicate effectively orally and in writing

ACCREDITATION/CERTIFICATION

Alfred State College is accredited by Middle States Commission on Higher Education [3624 Market Street, 2nd Floor West, Philadelphia, PA 19104; (267) 284-5000]. The BS-N program is registered by NYS Education Department.

PRE-ENVIRONMENTAL SCIENCE AND FORESTRY

AA Degree - Code #0202

Dr. Kathleen Ebert, Program Coordinator
E-mail address: ebertkc@alfredstate.edu

This program is designed for those students who ultimately desire a bachelor of science (BS) degree in environmental sciences and/or forestry from the SUNY (State University of New York) College of Environmental Science and Forestry (ESF) - an upper division/graduate center. Program options available within this program include environmental and forest biology, chemistry, forest resources management, dual option in forest ecosystems science and forest resources management, environmental studies, forest engineering, paper science and engineering, construction management and wood products engineering, landscape architecture, and the 1+1 forest technology program (NYS Ranger School).

After the first two years of study at Alfred State College, transfers to ESF may apply to a variety of programs at Syracuse. These include: the biological sciences (botany and forestry pathology, entomology, zoology, wildlife biology, pest management); chemistry (natural and synthetic polymers, biochemistry and natural products, environmental); forest engineering; paper science engineering; wood products engineering; and forestry (resource management, forest resource science, management science, environmental education and communications, urban forestry, world forestry, applied resource management). The program in landscape architecture leads to a baccalaureate degree after one additional year, a bachelor of landscape architecture degree (BLA). A student taking the pre-ESF 1+1 ranger option completes required liberal arts and science courses at Alfred State College and then spends the second year at the Wanakena Campus of ESF. Successful completion of this program leads to an AAS degree in forest technology.

Due to the diverse nature of the various options, illustration of a typical four-semester course outline is not possible. Persons planning to transfer should follow the program requirements in consultation with our pre-environmental science and forestry campus adviser in the selection of all courses including electives.

TRANSFER OPPORTUNITIES

Students in this program spend two years at Alfred State and then generally transfer to the SUNY College of Environmental Science and Forestry (ESF) at Syracuse. Those students who complete, with a "C" or better, the lower-division sequences prescribed by ESF, gain admission to ESF[1] with full junior status. [1]An articulation agreement is available with SUNY ESF at Syracuse.

Students may also continue in Alfred State's BBA program in technology management.

EMPLOYMENT STATISTICS

Employment and transfer rate: no data available.

RELATED PROGRAMS

- Biological Science
- Individual Studies
- Liberal Arts & Sciences: Humanities
- Liberal Arts & Sciences: Math & Science
- Liberal Arts & Sciences: Social Science

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required:
Algebra, Geometry, Algebra 2/Trigonometry (Math A and B); Biology; Chemistry or Physics

Recommended:
Both Chemistry and Physics

SPORTS MANAGEMENT

AS Degree - Code #1396 ☐

Dr. Cliff McPeak, Program Coordinator
E-mail address: mcpeakc@alfredstate.edu

The growing emphasis on athletics, coupled with the increasing amount of leisure time the public now enjoys, has made the world of sports one of the fastest growing segments of American business. Formation of new sports leagues, expansion of franchises to new markets, and legislative enactments opening the door for female athletes have all aided the evolution of new sports markets since the late 1980s. Increased television exposure for non-traditional sports such as soccer, volleyball, and weight training has dramatically increased career opportunities in the sports world.

The sports industry requires a great variety of people with an equal variety of talents. It needs athletes, sales people, publicists, trainers, business managers, scouts, statisticians, coaches, store managers, and health and fitness personnel. The goal of the sports management program is to provide students with a concentration of courses aimed at preparing them for a career in the management and administration of the sport and fitness industry.

A laptop computer is recommended but not required for students entering the sports management program. The College will provide a list of appropriate laptops and wireless modem cards to all students who have been accepted to attend Alfred State College.

TRANSFER OPPORTUNITIES

Students may transfer directly into one of our own BBA programs or to another college. The AS degree in sports management has been designed as a transfer-oriented program preparing students for upper-division study at colleges offering a BS in sports management. Graduates of this program will meet acceptance guidelines for transfer to four-year colleges and universities such as Brockport, Cortland, Ithaca, Medaille, Eastern Kentucky, Bemidji State, Springfield, Washington State, Indiana State, and others. Students should consult with their adviser regarding which courses (SPMG) or (HPED) will transfer to specific four-year colleges.

OCCUPATIONAL OPPORTUNITIES

- Account Sales
- Recreation Service Industry
- Travel and Tourism
- College Athletic Departments
- Sports Marketing Firms
- Special Olympics
- YMCAs
- Equipment Managers

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 100 percent transferred to continue their education.

RELATED PROGRAMS

- Business Administration (BBA)
- Business Administration (Transfer)
- Business Management
- Sport Management (BBA)

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry (Math A)
Recommended: Algebra 2/Trigonometry (Math B)

SPORTS MANAGEMENT - AS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
ACCT	1124	Financial Accounting	4
SPMG	1123	Intro to Sports Mgt	3
CISY	1103	Information Technology Mgt.	3
COMP	1503	Freshman Composition	3
MATH	xxx3	Math Elective	3
dPHED	xxx1	Physical Education Elective	1
			17
Second			
ACCT	2224	Managerial Accounting	4
BUAD	2033	Business Communications	3
SPMG	2003	Sport in Society *	3
MKTG	2073	Principles of Marketing	3
	xxx3	Literature Elective	3
	xxx3	General Education Elective	3
			19
Third			
BUAD	3153	Fundamentals of Management	3
SPCH	1083	Effective Speaking	3
SPMG	3013	Sport Communication **	3
BUAD	3043	Business Law I	3
	xxx3	General Education Elective	3
			15
Fourth			
PLSC	1053	International Relations	3
SPMG	4003	Sport Law *	3
ECON	xxx3	Micro or Macro Economics	3
SPMG	4123	Sport Facility Mgt Plan & Features *	3
	xxx3	Business Elective	3
			15

* offered in spring semester only

** offered in fall semester only

GRADUATION REQUIREMENTS

66 semester hours with a 2.0 cumulative index.

SPORT MANAGEMENT

BBA Degree - Code #0182 ☐

Dr. Cliff McPeak, Program Coordinator
E-mail address: mcpeakc@alfredstate.edu

The sports industry requires a great variety of people with expertise in business. To meet this growing need, the Business Department at Alfred State College is offering a sport management program resulting in a bachelor of business administration (BBA) degree. A student will enter as a freshman and graduate in four years with a BBA degree, focusing on sport management. This course of study is designed to produce graduates ready to contribute in the areas of administration, marketing, sales, fund development, finance, event promotion and management, communication, and facility management, innovation and development.

This program includes a specialization in marketing and event promotion. Each student will participate in field experiences during the second year and a full-semester internship in the senior year.

A laptop computer is required for students entering this degree program. Laptop specifications are available at www.alfredstate.edu/required-laptops.

OCCUPATIONAL OPPORTUNITIES

- Event and Promotional Firms
- Account and Ticket Sales
- Recreation Service Industry
- Travel and Tourism
- College Athletic Departments
- Sports Marketing Firms
- Special Olympics
- YMCAs
- National Governing Bodies
- Professional Sports

RELATED PROGRAMS

- Business Administration (BBA)
- Business Administration (Transfer)
- Business Management (Career)
- Entrepreneurship
- Financial Planning (BBA)
- Marketing

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra2/ Trigonometry (Math A and B), SAT and/or ACT scores with a recommended combined SAT score of 1000 (critical reading and math) or a composite ACT score of 21

SPORT MANAGEMENT - BBA Degree

TYPICAL EIGHT-SEMESTER PROGRAM

First			
ACCT	1124	Financial Accounting	4
CISY	1103	Information Technology Mgt.	3
COMP	1503	Freshman Composition	3
SPMG	1123	Intro to Sport Management *	3
MATH	xxx3	Math Elective	3
			16

Second			
BUAD	2033	Business Communication	3
ACCT	2224	Managerial Accounting	4
SPMG	2003	Sport in Society **	3
MKTG	2073	Principles of Marketing	3
	xxx3	Literature Elective	3
HPED	xxx1	Physical Education Elective	1
			17

Third			
BUAD	3153	Fundamentals of Management	3
SPCH	1083	Effective Speaking	3
SPMG	3013	Sport Communication *	3
BUAD	3043	Business Law I	3
SPMG	3001	Field Experience I	1
	xxx3	General Education Elective	3
			16

Fourth			
ECON	xxx3	Macro or Microeconomics	3
MKTG	1063	Principles of Sales	3
SPMG	4003	Sport Law **	3
SPMG	4123	Sport Facility Mgt Plan & Features	3
SPMG	4001	Field Experience II	1
	xxx3	General Education Elective	3
			16

Fifth			
COMP	5703	Technical Writing II	3
SPMG	6003	Sport Marketing *	3
SPMG	5003	Sport Business and Finance *	3
TMGT	5001	Professional Business Seminar *	1
	xxx3	General Education Elective	3
	xxx3	Upper-level Business Elective	3
			16

Sixth			
SPMG	6033	Sponsorship **	3
SPMG	6013	Licensing and Endorsements **	3
SPMG	6023	Event Promotion and Sales **	3
	xxx3	General Education Elective	3
	xxx3	Upper-level Business Elective	3
			15

Seventh			
SPMG	7001	Pre-Internship Seminar *	1
SPMG	7023	Strategic Mgt in Sport Organizations *	3
	xxx3	General Education Elective	3
	xxx3	General Education Elective	3
	xxx3	Upper-level Business Elective	3
	xxx3	Upper-level Business Elective	3
			16

Eighth			
SPMG	8112	Internship	12
			12

* Offered only in fall semester

** Offered only in spring semester

GRADUATION REQUIREMENTS

- 123 credit hours, including one credit hour of physical education
- 30 credit hours of the 45 upper-level credit hours for this degree must be taken at Alfred State College
- Cumulative overall index of at least 2.0

SURVEYING ENGINEERING TECHNOLOGY

AAS Degree - Code #1039
BS Degree - Code #1046

Individuals benefit from having a land surveyor determine the boundaries of their property. Governmental agencies, private industries, and individuals all benefit from the surveying and mapping of our natural resources. Surveyors help in the planning of transportation systems, recreational facilities, new cities, and land subdivisions.

The modern surveyor has learned to increase his/her productivity and measurement accuracy by using modern surveying equipment such as the electronic total stations to measure angles and distances. Computational tasks and mapping are enhanced by the use of the computer.

Particularly exciting about the future of the surveying profession are the emerging technologies of Global Positioning Systems (GPS), Geographic Information Systems (GIS) and Land Information Systems (LIS).

The course of study at Alfred State provides a thorough understanding of the basic sciences of mathematics and physics as well as such applied subjects as graphics and computer aided drafting and design. The knowledge obtained from these basic courses is applied to a well-rounded study of modern surveying theory and practice.

The student constantly applies theoretical knowledge in meaningful and comprehensive laboratory sessions. Therefore, upon graduation the student is educated in a two-fold sense, both theoretically and practically.

Both surveying engineering technology programs are accredited by the Technology Accreditation Commission/Accreditation Board for Engineering Technology, Inc. [TAC/ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202; (410) 347-7700.]

A laptop computer is required for students entering the surveying engineering technology programs. Laptop specifications are available at www.alfredstate.edu/required-laptops.

PROGRAM EDUCATIONAL OBJECTIVES

Program educational objectives were established with the assistance of the Industrial Advisory Committee and are reviewed periodically. The surveying engineering technology program produces graduates who:

1. write, read, and orally present technical reports, letters, and projects that meet the standards of the profession;
2. have an understanding of and are able to implement basic field and office survey procedures;
3. are capable of performing elementary research;
4. are competent in surveying techniques;
5. recognize the need for, and an ability to engage in, continued formal education as well as life-long learning.

In addition to the AAS program educational objectives, the BS in the surveying engineering technology program (630) produces graduates who:

1. will be capable of sitting successfully for the Land Surveyor Examination;
2. have the skills to perform a land title survey in all its complexity;
3. will be capable of employing state-of-the-art surveying techniques in leading a survey crew to accomplishment of its goal.

OCCUPATIONAL OPPORTUNITIES

- Land Surveyor (after successfully meeting state requirements)
- Surveying Engineering Technician
- Field Technician
- Drafter - Computer
- Project Surveyor
- Office Assistant
- Party Chief
- Instrument Person
- Mapping Technologist
- GPS Surveyor

EMPLOYMENT STATISTICS

Employment and transfer rate:
Surveying Engineering Technology (AAS degree): No data available.
Surveying Engineering Technology (BS degree) – 100 percent – 100 percent are employed.

RELATED PROGRAMS

- Building Trades: Building Construction
- Construction Engineering Technology
- Construction Management Engineering Technology

CERTIFICATION OR LICENSURE

Both the AAS program and the BS program in surveying engineering technology have been accredited by TAC/ABET as well as the NYS Education Department. These accreditations mean that the graduates from the AAS program will receive two years of credit toward the total

statutory time requirement for licensure as a land surveyor in New York State.

Graduates of the BS program will receive four years of credit toward the total statutory time requirement for licensure as a land surveyor in New York State. The BS graduates are eligible to take the first part of the NCEES licensing exam for land surveying in their senior year, eighth semester, if within 20 semester credit hours of graduation.

Additionally, graduates of the BS program will receive six years of credit toward the statutory time for licensure as a Professional Engineer in New York State. The BS graduates are eligible to take the first part of the NCEES licensing exam for Professional Engineer in the fall following their graduation.

ARTICULATION AGREEMENTS

Alfred State accepts students from other two-year institutions as juniors into the BS surveying engineering technology program with appropriate course work and grade point averages.

SURVEYING ENGINEERING TECHNOLOGY - AAS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
COMP	1503	Freshman Composition	3
CIVL	1011	Civil AutoCAD	1
CIVL	1204	Surveying I	4
CIVL	1013	Portland Cement Concrete	3
CIVL	1182	Civil Tech Graphics	2
MATH	1033	College Algebra	3
			16

Second			
CIVL	2154	Quality Control of Construction Materials	4
CIVL	2204	Surveying II	4
PHYS	1024	General Physics I	4
MATH	2043	College Trigonometry	3
LITR	2603	Introduction to Literature	3
			18

Third			
CIVL	3204	Legal Aspects & Practice of Land Surveying	4
CIVL	3214	Control Surveying	4
PHYS	2023	General Physics II	3
MATH	1063	Technical Calculus I	3
	xxx3	Gen Education Elective	3
			17

Fourth			
CIVL	4204	Subdivision Theory & Application	4
CIVL	4214	Surveying Practicum	4
CIVL	4243	Surveying Computer Applications	3
CIVL	4273	Photogrammetry	3
	xxx3	Gen Education Elective	3
			17

Entry level of student into math and composition/literature sequences is a function of student's high school preparation and mathematics and English placement examinations.

Math through technical calculus I must be completed. Freshman composition and introduction to literature must be taken.

Also required: One unit of physical education.

ENTRANCE REQUIREMENTS/RECOMMENDATIONS (AAS)

Required:
Algebra, Geometry, Algebra 2/Trigonometry (Math A and B)
Recommended: Physics

SURVEYING ENGINEERING TECHNOLOGY - BS Degree

TYPICAL FIVE- THROUGH EIGHT-SEMESTER PROGRAM

Fifth			
MATH	2074	Technical Calculus II	4
SPCH	1083	Effective Speaking	3
COMP	5703	Technical Writing II	3
CIVL	5104	Geological Engr Tech	4
CIVL	5114	Land Surveying OR	
CIVL	7114	Geographic Info Systems	4
			18

Sixth			
MATH	5014	Technical Calculus III	4
BUAD	3043	Business Law	3
CHEM	5013	Applied Chem Principles	3
CIVL	6104	Anal & Adj of Surv Meas	4
CIVL	6113	Environmental Tech Concepts	3
			17

Seventh			
MATH	7113	Economic Analysis for Engr Tech	3
MATH	7123	Statistics for Engr Tech	3
CIVL	8104	Satellite & Geodetic Surv	4
CIVL	5114	Land Surveying OR	
CIVL	7114	Geographic Info Systems	4
CIVL	7001	Senior Seminar & Proj Design	1
	xxx3	Gen Education Elective	3
			18

Eighth			
BSET	8003	Senior Technical Project	3
PHYS	8013	Modern Physics	3
CIVL	7104	Land Develop & Design	4
	xxx3	Gen Education Elective	3
CISY	1123	Introduction to Programming for IT	3
			16

Also required: One unit of physical education

General Education Electives: (maximum- one from each area)

American History	Social Sciences	Western Civilization
Other World Civilization	Arts	

ENTRANCE REQUIREMENTS/RECOMMENDATIONS (BS)

Required: Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B), SAT and/or ACT scores with a recommended combined SAT score of 1000 (critical reading and math) or a composite ACT score of 21.

Recommended: Physics

TECHNOLOGY MANAGEMENT

BBA Degree - Code #1318 ☐

Dr. Karla Back, Program Coordinator
E-mail address: backkm@alfredstate.edu

The technology management degree is designed to allow a student who has earned an associate's degree (AAS, AA, AS, or AOS) in a technical or professional area (or at least 60 credits toward such a degree) to complete a bachelor's degree through this upper-division program. Students seeking entrance into the program will enter at the junior level since they will have already successfully completed at least 60 credits toward an associate-level degree in a technical area. The junior and senior years will have an emphasis in the development of business and management skills with a focus on technology applications. The program includes a significant internship in the final semester of the senior year.

A major feature of the degree is the program design that allows students with a lower-level professional/technical degree to advance into management/administrative positions in their respective professional or technical areas. Another major feature is that this program provides flexibility to the student by providing a variety of choices in upper division directed electives, allowing the students to shape the degree to their needs. It is also designed to provide them with the skills necessary to run a small-to-medium size business in their area of study or to manage a department, a division, or even their own business.

Graduates of this program are eligible for employment in many industries. Business persons in fields ranging from agriculture to auto-body shops to engineering and surveying firms have expressed positive responses to this plan.

The purpose of the BBA in technology management is to provide graduates with the management, administrative, and technological course work necessary to succeed in management and supervisory positions within the business environment surrounding their specific technical or professional field of study.

In order to earn the bachelor's degree, students entering the program with an earned associate's degree must complete all specified upper-level requirements for the bachelor's degree, fulfill all required prerequisites for upper-level courses, and earn a minimum of 66 credits beyond the associate's degree. The student completing this program will take courses that will result in: a) fulfillment all 10 SUNY General Education areas through 39 credit hours, b) 27 credit hours of technical course work, 18 of which must be upper-level, and c) 62 credit hours in the major, 27 of which must be upper-level.

EMPLOYMENT STATISTICS

Employment & Transfer Rate of 100 percent - 86 percent are employed; 14 percent transferred to continue their education.

RELATED PROGRAMS

- Agricultural Business
- Agricultural Technology
- Automotive Service Technician
- Business Administration (Transfer)
- Business Management (Career)
- Coding & Reimbursement Specialist
- Computer Information Systems
- Construction Mgt Engineering Technology
- Interior Design
- Marketing
- Mechanical Engineering Technology
- Pre-Environmental Science & Forestry
- Veterinary Technology

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Successful completion of an associate's degree with a minimum cumulative GPA of 2.0.

TECHNOLOGY MANAGEMENT - BBA Degree

TYPICAL FIVE- THROUGH EIGHT-SEMESTER PROGRAM

Fifth			
BUAD	5003	Management Communications	3
ACCT	5043	Accounting Perspectives	3
BUAD	5053	Software Applications in Business**	3
TMGT	7153	Principles of Management	3
ECON	1013	Principles of Economics I	3
TMGT	5001	Business Seminar	1
	xxx3	Gen Education Elective	3
			19

Sixth			
BUAD	7023	Legal Environment of Business	3
CISY	7003	Project Management*	3
BUAD	6113	Strategic & Creative Problem Solving*	3
	xxx3	Gen Education Elective	3
COMP	5703	Technical Writing II	3
MKTG	6003	Strategic Marketing*	3
			18

Seventh			
BUAD	5043	Business Ethics	3
BUAD	5023	Human Resources Management	3
TMGT	7003	Managing Tech. and Innovation**	3
SPCH	1083	Effective Speaking (if needed) OR	
	xxx3	Gen Education Elective	3
	xxx3	Gen Education Elective	3
	xxx3	Gen Education Elective	3
			18

Eighth			
TMGT	8112	Tech. Management Internship***	12
			12

Also required: One unit of physical education.

* Course offered spring semester only

**Course offered fall semester only
***Accommodations will be offered to students who are unable to fulfill internship requirements.

GRADUATION REQUIREMENTS

- Total minimum credit hours for graduation is 127, including one credit hour of physical education.
- A cumulative overall index of at least 2.0 is required in order to graduate.
- General education electives should come from any of the 10 general education silos not already fulfilled.
- Students may cross register for one course per semester at Alfred University at no additional expense.
- 12 credit hours may be transferred back within a seven-year period if you leave Alfred prior to completing your degree.
- 30 credit hours of the 45 upper-level credit hours for this degree must be taken at Alfred.
- This curriculum meets 10 out of 10 SUNY General Education requirements.
- Be sure to check for prerequisite requirements when scheduling courses.
- You should meet frequently with your academic adviser.

ADMISSION REQUIREMENTS

- Students must either possess an associate's degree or have amassed at least 60 credit hours toward a degree, including courses that fulfill five different general education fields.
- Students entering the program should have a minimum cumulative GPA of 2.0.
- A laptop computer will be required of all technology management majors. Laptop specifications are available at www.alfredstate.edu/required-laptops.

UNDECLARED MAJOR

Code # 0000 ☐

Dr. Earl Packard, Program Coordinator
E-mail address: packared@alfredstate.edu

The undeclared major serves students who are undecided about their choice of study or career goals. The student has an opportunity to select a course of study the first two semesters that fits his/her interests and background.

A student enrolled in the undeclared major program must transfer to a degree-granting program within two semesters of admission. Depending on the choice of a major, a student may enter the workforce upon graduation, or opt to continue his/her education at a four-year institution.

Many support services, including career planning and counseling, are offered through the College's Hunter Student Development Center.

Since the primary goal of the program is to explore various academic areas of interest, individual course schedules will vary. The suggested program below includes both a component of core courses (English, math, social science) and a component of electives in support of the student's interests.

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra (Math A)
Recommended: Biology

UNDECLARED MAJOR

TYPICAL TWO-SEMESTER PROGRAM

First	
Career Decision Making	1-2
English Fundamentals or	0
Freshman Composition	3
Math	3
Social Science Elective	3
Exploratory Elective	3-4
Exploratory Elective	3-4
	16-19

Second	
Freshman Composition or Introduction to Literature	3
Math or Science	3-4
Exploratory Elective	3-4
Exploratory Elective	3-4
Exploratory Elective	3-4
	15-19

VETERINARY TECHNOLOGY

AAS Degree - Code #0521

Dr. Melvin Chambliss, Program Director
E-mail address: chamblm@alfredstate.edu

The veterinary technology program at Alfred State College has full accreditation status as granted by the American Veterinary Medical Association, Committee on Veterinary Technician Education and Activities, Education and Research Division, [1931 N. Meacham Road, Suite 100, Schaumburg, IL 60173-4360; (847) 925-8070].

The veterinary technology program is designed to provide students extensive core information in the theory and principles of veterinary science. The core information is then reinforced with the hands-on technical, animal, and laboratory experiences needed to prepare them to become licensed veterinary technicians. Licensed veterinary technicians are indispensable members of the veterinary medical team who are compassionate and highly motivated professionals dedicated to animal health care. The veterinary technician is capable of providing nursing care, life support, laboratory specimen analysis, physical therapy, surgical assistance, anesthesia, dental hygiene, radiographic imaging, and nutritional management for their animal patients. The veterinary technician is also adept at client education and grief management counseling.

The veterinary technology program is primarily housed on the third floor of the Agriculture Science Building. In the Agriculture Building, a vivarium houses mice, rats, snakes, lizards, tortoises, turtles, fish, birds, rabbits, and guinea pigs; you will also find cat kennels, dog kennels, laboratories for teaching animal health care, animal anatomy and physiology, anatomy/necropsy, parasitology, laboratory animal management and exotics, surgical suites, medical imaging suites, pharmacy, animal examination rooms, and a clinical pathology laboratory. Large animal laboratories are conducted at the Alfred State College Farm. Students learn to safely work with and care for a variety of farm animals including horses, pigs, sheep, goats, alpacas, and dairy cattle of all ages.

An average week consists of 24-36 hours spent in the classroom and/or laboratories. Veterinary technology blends hands-on techniques with lecture-based course materials. Students are assigned an adviser from within the program to assist with career and academic planning.

Veterinary technology students are encouraged to become members of the student chapter of the NYSAVT (New York State Association of Veterinary Technicians) and NAVTA (National Association of Veterinary Technicians in America).

The veterinary technology program is designed to be completed in two academic years. Students enrolled as Alfred State Opportunities Program students have three academic years to complete the program. Transfer students with appropriate advanced degrees or transfer students from other veterinary technology programs may be eligible for advanced placement. In order to progress in the veterinary technology program, students must earn a "C" or better in each core veterinary technology course, with the exception of VETS 1214 large animal anatomy and physiology which requires a minimum of a "D" to pass the course. Students receiving an "F" in two or more successive core veterinary technology courses will be required to change majors.

EXPENSES

Rabies vaccinations are required for all veterinary technology students. The vaccination series cost varies between $600 and $800. Textbooks are the primary annual expense with cost averaging $1,000 to $1,200 each year.

TRANSFER OPPORTUNITIES

The Alfred State College veterinary technology program has an established transfer agreement with Cornell University's College of Agriculture. Students have also successfully transferred into the Purdue University BS veterinary technology program.

OCCUPATIONAL OPPORTUNITIES

- Veterinary Hospitals (Small Animal, Large Animal, Mixed Animal, and Exotic Animal)
- Biomedical Research Institutions
- Zoological Parks
- Educational Institutions
- Specialized Dairy Calf or Cow Management

Upon successful completion of this program, students may continue in Alfred State's BBA program in technology management.

EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 80 percent are employed; 20 percent transferred to continue their education.

RELATED PROGRAMS

- Agricultural Technology
- Nursing

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/ Trigonometry (Math A and B), Biology, Chemistry
Recommended: Physics

CERTIFICATION OR LICENSURE

The veterinary technology program at Alfred State College is a two-year educational course leading to an associate in applied science degree and eligibility for licensing as a veterinary technician. The demand for graduate-licensed or license-eligible veterinary technicians is ever increasing across the country.

VETERINARY TECHNOLOGY - AAS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
VETS	1203	Intro to Vet Technology	3
VETS	1214	A & P of Large Animals	4
CHEM	1114	General Chemistry	4
MATH	1033	College Algebra OR	
MATH	1323	Quantitative Reasoning	3
ANSC	1204	Intro to Animal Science OR	
VETS	3204	Farm Animal Management OR	
COMP	1503	Freshman Composition	3-4
			17-18

Second			
VETS	2014	A&P Small Animal	4
VETS	3013	Animal Parasitology	3
VETS	3003	Animal Health Care	3
ANSC	1204	Intro to Animal Science OR	
VETS	3204	Farm Animal Management OR	
COMP	1503	Freshman Composition	3-4
	XXX3	General Education Elective	3
			16-17

Summer Session			
		Preceptorship Work Experience	

Third			
VETS	4103	Lab Animal Management	3
VETS	3023	Radiography	3
BIOL	5254	Principles of Microbiology	4
VETS	2013	Pathophysiology of Animal Disease	3
ANSC	3013	Animal Disease Control	3
			16

Fourth			
	xxx3	Gen Education Elective	3
VETS	3004	Anesthesia & Surgical Nursing	4
VETS	3024	Clinical Lab Techniques	4
	xxxx	Technical Elective	2-3
BUAD	3153	Fundamentals of Management	3
			16-17

* Students planning to transfer to four-year program must take MATH 1033.

Suggested Technical Electives:

Organic Chemistry	Reproduction and AI	Biology
Genetics	Small Animal Nutrition	Chemistry II
Dairy Calf Management	Dairy Cattle Production	Math

Full-time students can cross register at AU for equestrian classes.

Also required: One unit of physical education.

Preceptorship of 240 hours. Either during summer or semester break after successful completion of second semester course requirements. Preceptorship hours can be fulfilled through part-time employment at an appropriate facility.

GRADUATION REQUIREMENTS

Students must:

- successfully complete the prescribed sequence of courses
- achieve a minimum of 2.0 in their core courses
- achieve a minimum of 2.0 overall
- be recommended by the department faculty

The Admissions and Performance Standards discussed in the following paragraphs define performance expectations that must be met for successful completion of the veterinary technology program at Alfred State College. It is the policy of Alfred State College to provide reasonable accommodations for those with disabilities as defined under the Americans with Disabilities Act. If you need an accommodation due to a disability under the Americans with Disabilities Act, please contact the Learning Center office at (607) 587-4122. Some accommodations may require up to six weeks to prepare. For progression in the veterinary technology program, students are expected to meet the following performance standards:

		Some Examples of Necessary Activities (not all-inclusive)
Critical Thinking	Critical thinking sufficient for clinical judgment.	Identify cause-effect relationships in clinical situations. Develop nursing care plans. Demonstrate problem solving skills. Adapt to stressful situations.
Interpersonal	Interpersonal abilities sufficient to interact with patients, clients, families & groups from a variety of social, emotional, cultural & intellectual backgrounds.	Establish rapport with patients/clients & colleagues. Recognize appropriate boundaries in relationships with patients/clients & colleagues.
Communication	Communication abilities for interaction with others orally & in writing.	Explain treatment procedures, initiate health teaching, document & interpret nursing actions and patient/client responses. Team building skills.
Mobility	Physical abilities sufficient to move from room to room, maneuver in small spaces & provide assistance to patients.	Move around in patient & treatment areas. Administer CPR. Provide physical assistance to clients & colleagues to ensure safety within the environment. Ability to

		prevent or escape injury caused by animals (e.g., biting, kicking, stampeding)
Motor Skills	Gross & fine motor abilities sufficient to provide safe, effective nursing care in a timely manner.	Use of instruments, supplies, safety devices and communication equipment in the care of patients. Performance of nursing care, surgical assistance, & laboratory techniques.
Hearing	Auditory ability sufficient to monitor and assess health needs.	Auditory ability sufficient to hear ausculatory sounds, monitor alarms, monitor and assess health emergency signals and cries for help. Hear needs. warning sounds from animals and humans of impending danger/injury.
Visual	Visual ability sufficient for observation and assessment necessary in nursing care.	Observe patients for expected and unexpected physical and emotional responses to nursing and medical treatment regimens. Use of diagnostic equipment such as a microscope, thermometer, refractometer, etc ...
Tactile	Tactile ability sufficient for physical assessment and performance of nursing duties in a timely manner.	Perform palpation functions of physical exam. Administer oral, intramuscular, subcutaneous, & intravenous medications. Insert and remove tubes and perform wound care management. Surgical assistance.
Physical Condition	Physical ability and stamina sufficient to restrain, lift, & assist in the care of a variety of species of animals. Ability to stand for extended periods of time. Ability to withstand extreme weather conditions. Immune system competence.	Safely lift, position, and restrain animals and supplies for treatment. Surgical assistance. Daily clinical routine. Year round treatment and care of outdoor animals. Exposure to a wide range of chemical and biological agents.

WELDING

WELDING TECHNOLOGY - AOS Degree - Code #0666

The welding technology program is taught according to the standards set by the American Welders Society (AWS) and is AWS-certified.

The program focuses on welding processes performed in all positions on both plate and pipe. Topics Include proper safety methods, required math, related skills, layout and fit up, welding codes and standards, welding inspection, testing, and drawing/welding symbol interpretation.

The first year, students will complete AWS Level I standards for an entry-level welder. The second year will take students toward AWS Levels II and III - advanced welder and expert welder. Additional techniques such as high-pressure vessel, high-pressure pipe, and ship fitting will be taught as well as other advanced welding techniques.

The students perform extensive hands-on work in a fully equipped approximately 2,600-sq.-ft. welding lab. Every student will have an individual welding booth with adequate ventilation and air replacement equipment. Lecture will be held in a separate facility utilizing the latest instructional techniques.

In their second year, the students will work in a 10,000-sq.-ft. fabrication facility located at the nearby Wellsville Dresser-Rand facility. This laboratory was made possible through a commitment from Dresser-Rand and Lincoln-Electric in partnership with Alfred State College.

OCCUPATIONAL OPPORTUNITIES

- Industrial Welder
- Steel Construction
- Equipment Repair
- Self-employment
- Fabrication Welder
- Structural Welder

Upon successful completion of this program, students may continue in Alfred State's BBA program in technology management.

EMPLOYMENT STATISTICS

Employment and transfer rate:

- Welding Technology (AOS degree) – 90 percent – 60 percent are employed; 30 percent transferred to continue their education.

RELATED PROGRAMS

- Air Conditioning and Heating Technology
- Autobody Repair
- Drafting/CAD: Model Building & Process Piping Drawing
- Drafting/CAD: Technical Illustration
- Machine Tool Technology
- Mechanical Engineering Technology

ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Applicants for the welding program must meet the following physical requirements:

- Must be able to perform safely in the shop.
- Must be able to lift 50 pounds to eye level.
- Must be able to communicate orally with a person six-10 feet away in a shop environment.
- Must be able to visually decipher an oscilloscope monitor and digital/analog meter, and scan tool displays.
- Must be able to diagnose mechanical failures that are distinguished audibly.
- Must be able to understand and retain information found in service repair manuals and use diagnostic flow charts.
- Must be able to visually read an LCD display on welding equipment.
- Must have the dexterity and mobility to weld in all the welding positions to meet all requirements.
- Good eyesight is recommended.

Recommended: In-depth knowledge of basic math skills

WELDING-AOS Degree

TYPICAL FOUR-SEMESTER PROGRAM

First			
WELD	1724	Gas Welding, Gas Cutting and Plasma Cutting	4
WELD	1733	Weld Metallurgy, Blueprint Reading and Inspection & Testing	3
WELD	1728	Arc Welding, Carbon Arc Cutting and Gouging	8
WELD	1723	Welder's Calculations	3
			18
Second			
WELD	2715	Shielded Metal Arc and Flux Cored Arc Welding	5
WELD	2725	Gas Metal Arc Welding (GMAW I)	5
WELD	2735	Gas Tungsten Arc Weld'g	5
WELD	2733	Tolerancing and Working Drawings	3
			18
Third			
WELD	3005	SMAW II, Codes/Insp, Basic CNC	5
WELD	3015	GMAW II, FCAW II	5
WELD	3025	GTAW II, Comp of Materials	5
WELD	3813	Metallurgy Codes, Cert, Inspections & Testing	3
			18
Fourth			
WELD	4425	GMAW III, FCAW III, SAW	5
WELD	4435	SMAW III, GTAW III	5
WELD	4445	Welding Fabrication	5
WELD	4013	Senior Project	3
			18

GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a “C” average. Students are required to earn a grade of “C” or higher in WELD 1723 welders calculations to be eligible for graduation. (Articulation is available in this area.)

A "C" or higher must be received also for WELD 4013 senior project.

Course Descriptions

ACCT	Accounting
AGEC	Agriculture Economics Business
AGPS	Agronomy/Plant Science
AGRI	Agriculture
AGSC	Agricultural Science
ANSC	Animal Husbandry Science
ANTH	Anthropology
ASDC	Alfred Student Development Center
AUTO	Automotive
BIOL	Biology
BLCT	Building Construction
BSET	Bachelor of Science in Engineering Technology
BUAD	Business Administration
CHEM	Chemistry
CIAT	Computer Imaging/Architectural Engineering Technology
CISY	Computer Information Systems
CIVL	Civil Engineering Technology
CJUS	Criminal Justice
COMP	Composition
CTRP	Court Reporting
DCAD	Drafting/CAD
ECON	Economics
EDUC	Education
ELTR	Electrical/Electronic Service
EMET	Electromechanical Engineering Technology
ENGR	Engineering Science
ESOL	English Second Language
FDSR	Food Services/Culinary Arts
FNAT	Fine Arts
FRSC	Forensic Science
FSMA	Financial Services
HIST	History
HLTH	Health
HORT	Horticulture
HPED	Health & Physical Education
HUSR	Human Services
IDIS	Industrial Distribution
LITR	Literature
MATH	Mathematics
MATT	Machine Tool Technology
MECH	Mechanical Engineering Technology
MEDR	Medical Records
MEDT	Medical Transcription
MKTG	Marketing
NASC	Natural Science
NURS	Nursing
PHIL	Philosophy
PHYS	Physics
PLSC	Political Science
PSYC	Psychology
READ	Reading
SOCI	Sociology
SPAN	Spanish
SPCH	Speech
SPMG	Sports Management
TMGT	Technology Management
VETS	Veterinary Technology Science
WELD	Welding

NOTE: An * after the course title denotes development/remedial course An * found within the list of pre-requisites denotes that the course and pre-requisite can be taken concurrently

ACCOUNTING

ACCT 1124 - Financial Accounting, 4 Credits

Level: Lower

Topics include: fundamental principals of accounting, the accounting cycle and basic procedures, statement of financial position, determination and reporting of periodic earnings, cash and accrual basis of accounting; accounting for a merchandising firm and inventory valuation, principles of internal control; and accounting for the acquisition, depreciation, and disposition of property, plant, and equipment.

ACCT 2224 - Managerial Accounting, 4 Credits

Prerequisite(s): ACCT 1124 with D or better

Level: Lower

Topics include: current liabilities; nature of corporations and related equity and income reporting issues; long-term liabilities; statement of cash flows; analysis of financial statements; nature and behavior of manufacturing costs; introduction to cost accounting concepts and systems; cost-volume-profit relationships; introduction to budgetary planning.

ACCT 3043 - Accounting Foundations, 3 Credits

Level: Lower

This course is intended to examine and apply the basic assumptions, principles, concepts and methods commonly used in the Accounting profession. The course is intended more for the users of accounting information than for the originators of it. Debits and credits are virtually ignored. Thus, the student examines the "why's" of accounting to a much greater degree than the "how's". The course is split into two major components. The first half examines financial accounting topics, using the financial statements as a basis of study. The second half of the course examines managerial accounting topics, with the primary emphasis being the fulfillment of the needs of management. The course would be particularly beneficial to individuals in engineering technology and other non-business curriculums where the graduate will not actually be expected to do accounting, per se, but will be expected to effectively comprehend accounting reports and statements, as well as communicate with accounting personnel. The course serves equally as well as a capstone or exit course for those in the business disciplines.

ACCT 3423 - Intermediate Accounting I, 3 Credits

Prerequisite(s): ACCT 2224 with C or better

Level: Lower

This course provides an in-depth examination of accounting theory in the treatment of assets, liabilities and stockholder's equity. The accounting cycle is reviewed in detail and a full examination and analysis of financial statement development and usage is undertaken. Continual focus will be on fundamental accounting concepts and principles with special emphasis on the contemporary theory and practice that applies to accounting statements. Topics covered include the foundations of accounting, the accounting process, accounting statements, and asset structure of the balance sheet.

ACCT 3433 - Cost Accounting I, 3 Credits

Prerequisite(s): ACCT 2224 with D or better

Level: Lower

Topics include: objectives of cost accounting, the role of cost accounting in relation to the performance of management functions with the emphasis on control and responsibility accounting; cost/benefit analysis; variable and fixed costs; period and product costs; cost-volume-profit relationships; The development and use of static and flexible budgets as managerial tools for planning and control; variance analysis for product costs under static and flexible budgeting; variable vs. absorption costing, and J.I.T. production.

ACCT 3453 - Tax Accounting I, 3 Credits

Prerequisite(s): ACCT 1124 with D or better

Level: Lower

Topics include: federal income taxation for the individual including filing requirements and status, exemptions, deductions, determination of taxable income, computation of tax, tax credits and tax payments; business or professional income from the sole proprietorship,

self-employment tax, supplemental sources of income, and capital gains and losses.

ACCT 4523 - Intermediate Accounting II, 3 Credits

Prerequisite(s): ACCT 3423 with D or better
Level: Lower
Continuation of ACCT 3423. Topics include: long-term investments, fixed assets, current and long-term debt, and stockholder's equity. Special problems of income determination, statement of cash flow and statements from incomplete records.

ACCT 4663 - Acctng Sys & Computer Appl, 3 Credits

Prerequisite(s): ACCT 2224 with D or better
Level: Lower
This course will cover all aspects of accounting for payroll, including the requirements of the Fair Labor Standards Act, calculations relative to gross pay, statutory and non-statutory deductions, employee and employer payroll taxes, general journal entry work relative to payroll, the payroll register, and the individual earnings record. Determining the amount and timing of payroll deposits, and preparing required quarterly and annual reports will also be covered. The course will then apply payroll and other accounting activities to a contemporary accounting software product covering the following topics: creating a new business, establishing a chart of accounts, recording typical business transactions, creating related financial statements, closing the books and employing available business research and evaluation techniques.

ACCT 4900 - Directed Study, 1 to 3 Credits

Level: Lower
A student may contract for one to three credit hours of independent study through an arrangement with an instructor who agrees to direct such a study or project. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the progress of the study.

ACCT 5043 - Accounting Perspectives, 3 Credits

Level: Upper
This course is intended to examine and apply the basic assumptions, principles, concepts, and methods commonly used in the accounting profession. The course is intended more for the users of accounting information than for the originators of it. Debits and credits are virtually ignored. Thus, the student examines the "whys" of accounting to a much greater degree than the "hows". The course is split into two major components. The first half examines financial accounting topics, using the financial statements as a basis of study. The second half of the course examines managerial accounting topics, with the primary emphasis being the fulfillment of the needs of management. The course would be particularly beneficial to individuals in engineering technology, management, marketing, and vocational technology curriculums where the graduate will not actually be expected to do accounting, per se, but will be expected to effectively comprehend accounting reports and statements as well as communicate with accounting personnel.

AGRICULTURE ECON/BUS

AGEC 3204 - Agriculture Mngmnt & Finance, 4 Credits

Level: Lower
Both the production management and financial management of a farm business are studied in this course. The course emphasizes the skills needed to manage a profitable business including analysis of financial statements, record keeping, key production management areas, leadership and decision-making skills. The relationship between good management performance and financial success will be stressed.

AGEC 3213 - Farm & Rural Bus Management, 3 Credits

Level: Lower
Both the production management and financial management of a rural or farm business is studied in this course. The course emphasizes the skills needed to manage a profitable business including analysis of financial statements, record keeping, key production management areas, leadership and decision-making skills. The relationship between good management performance and financial success will be stressed. Basic management

processes, financial records, and analysis required to manage a farm or rural business will be studied. The course emphasizes the skills needed to understand, analyze and operate a profitable business. Aspects and functions of management and types of decision making will be introduced. Acquiring organizing financial management information will be the primary emphasis of the course including constructing and analyzing financial statements and pertinent productions information. The importance of financial management to the success of the business will be stressed.

AGEC 4303 - Rural Business Finance, 3 Credits

Prerequisite(s): AGEC 3213 with D or better
Level: Lower
Both the production management and financial management of a farm business are studied in this course. The course emphasizes the skills needed to manage a profitable business including analysis of financial statements, record keeping, key production management areas, and leadership and decision-making skills. The relationship between good management performance and financial success will be stressed.

AGEC 4900 - Agribusiness Managerial Acctg, 3 Credits

Level: Lower
A student may contract for an independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

AGRONOMY/PLANT SCIENCE

AGPS 1103 - Soils, 3 Credits

Level: Lower
Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science
Fundamental principles of soil science are studied in an effort to relate soil characteristics to plant growth; plant growth as influenced by soil factors. Soil parent materials and soil formation, physical, chemical and colloidal properties of soils and soil surveys, life in the soil, soil water, and water conservation, plant nutrition, lime and liming practices are all covered in this course. Laboratory components complements lecture material.

AGPS 2113 - Field & Forage Crops, 3 Credits

Level: Lower
The course will combine fundamental knowledge of field crop physiology with practical training in crop production. Crop interactions with other organisms, both beneficial and deleterious (pests), will be studied. Management of synthetic inputs will be included in this course. Emphasis will be given to cultural (or biological) crop management strategies that reduce input costs in crop production and reduce fluctuations (risks) to crop performance and the environment.

AGPS 2203 - Plant Physiology, 3 Credits

Prerequisite(s):
Level: Lower
Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science
Application of basic plant science to understanding the principles of crop production. The course includes such topics as transpiration, water conduction, mineral nutrition, growth regulators, soil-plant relationship, carbohydrate metabolism, photosynthesis, growth and development, physiological disorders, dormancy and others. An opportunity to conduct study projects using the plant growth chambers and plant science greenhouse is available.

AGPS 3004 - Soil Fertility, 4 Credits

Prerequisite(s): AGPS 1103 with D or better
Level: Lower
This course is a comprehensive study of the management of plant nutrients in agronomic systems for economic response and environmental protection; diagnosis of nutrient availability and prediction of crop response to fertilizers; interactions between nutrient response and chemical, physical, and biological properties of soils.

AGPS 4900 - Directed Study, 1 to 4 Credits

Level: Lower

A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

AGPS 5003 - Integrated Pest Management, 3 Credits

Prerequisite(s): AGPS 1103 with D or better and BIOL 1304 with D or better
Level: Upper
This course is an introduction to Integrated Pest Management (IPM): the study of plant pest protection on an interdisciplinary basis. Ecological, biological and economic principles will be emphasized from each of the participating disciplines: entomology, nematology, plant pathology, weed science, engineering, and economics. Reasons and principles for establishing pest management programs will be discussed. Computer-aided instruction is used in portions of the course. The objectives of the course are to: introduce the student to the principles of pest management; develop an understanding of vocabulary and basic concepts; develop an understanding of tactics associated with pest management; and create an awareness of interdisciplinary complexity and necessity of systems approach in IPM.

AGPS 5102 - Sustainable Vegetable Prod Tec, 2 Credits

Prerequisite(s): AGPS 1103 with D or better
Level: Lower
Students will learn how to site, design, and manage a small-scale vegetable farm, using organic or other sustainable practices that support niche-marketing strategies. Particular attention will be paid to crop sequences appropriate for the climates and soils of the Northeastern United States. Students will gain hands-on experience in building soil quality, starting transplants, identifying and managing pests, harvesting and marketing of vegetables. Later in the course, students will work with sustainable winter-production technologies, including passively-heated high tunnels and intensive vegetable production using hydroponic techniques.

AGPS 5103 - Sustainable Vegetb Prodtn Tech, 3 Credits

Prerequisite(s): AGPS 1103 with D or better
Level: Upper
Students will learn how to site, design, and manage a small-scale vegetable farm using organic and/or other sustainable practices that support niche-marketing strategies. Particular attention will be paid to crop sequences appropriate for the climates and soils of the Northeastern United States. Students will gain hands-on experience in building soil quality, starting transplants, identifying and managing pests, harvesting and marketing of vegetables. Later in the course students will work with sustainable winter-production technologies, including passively-heated high tunnels and intensive vegetable production using hydroponic techniques.

AGPS 5900 - Directed Study, 1 to 4 Credits

Level: Upper
A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

AGRICULTURE

AGRI 1002 - Introduction to Agriculture, 2 Credits

Level: Lower
The introduction to Agriculture will give students the opportunity to learn and practice a variety of agriculture skills. Skills will include care and management of dairy animals, machinery and equipment safety and operation, crop, fruit and vegetable production.

AGRI 2012 - Organic & Sustainable Agr Tech, 2 Credits

Level: Lower
This course will introduce students to environmentally sound methods of agriculture. The goal is to help students understand methods and technologies for using water, soil, pasture and manure resources in ways that create a biologically healthy landscape for animals and for

society. This course will introduce students to a more natural approach to animal agriculture as well as to explore the synergy of an integrated organic cropping and animal agricultural systems.

AGRI 2022 - Dairy Cattle Evaluation, 2 Credits

Level: Lower

The course will focus on the phenotypic evaluation of dairy cattle in relation to the productive life of the animals as well as efficiency, and the economic impact on dairy producers. Labs consist of students spending time cow-side evaluating animals via knowledge retained during lecture. Anatomy of the cow will be mastered, value of type traits will be learned, differentiation of the dairy breeds will be understood, and oral presentation skills will be honed.

AGRI 3351 - Live Animal Evaluation, 1 Credit

Level: Lower

The efficiency of animal husbandry depends on the ability of an individual to evaluate, judge and select animals based on their productive and reproductive abilities. Communication, both oral and written, makes the judges reasons much more effective.

AGRI 4002 - Senior Seminar/Capstone Proj, 2 Credits

Level: Lower

This course enables the student to develop career professionalism, job finding techniques and the personal and social skills necessary for success in the world of work. A job search is organized, resumes prepared with cover letters, and practice interviews are conducted. Many types of jobs are studied using successful graduates. Professional and personal goals are discussed.

AGRI 4116 - Sustainable Agrictr Internship, 6 Credits

Level: Lower

This internship is offered to provide students with an experiential learning opportunity in sustainable agriculture practices. Projects may involve vegetable or other crop production, farm animal management, cover crop/green manure trials, vermicomposting, woodlot improvement and other integrative initiatives appropriate to small farms. A planned program of education experiences will then be completed by the student under the supervision of an owner, manager or supervisor in their technical field or professional area. The interns will also be supervised by a faculty member who serves as Internship Coordinator. Written and/or oral reports, along with a journal and/or blog of work activities and experiences, will be required. Evaluation will be based on the quality of experiences gained from the internship and student work performance.

AGRI 4900 - Directed Study, 1 to 4 Credits

Level: Lower

Students must have permission of their advisor and the department chairperson before enrollment. An outline of the study must be submitted before enrollment. Directed study provides an opportunity to continue study in an area of special interest. Study may be carried out within any curriculum in the department in which the student is enrolled.

AGRI 5103 - Sustain Vegetable Prod Tech, 3 Credits

Prerequisite(s): AGPS 1103 with D or better

Level: Upper

Students will learn how to site, design, and manage a small-scale vegetable farm, using organic or other sustainable practices that support niche-marketing strategies. Particular attention will be paid to crop sequences appropriate for the climates and soils of the Northeastern United States. Students will gain hands-on experience in building soil quality, starting transplants, identifying and managing pests, harvesting and marketing of vegetables. Later in the course, students will work with sustainable winter-production technologies, including passively-heated high tunnels and intensive vegetable production using hydroponic techniques.

AGRI 6103 - Precision Agriculture, 3 Credits

Level: Upper

A course designed for students who desire to understand the acquisition and analysis of geographically referenced data for the management of crop production systems. Topics include: mapping, map projections, implementation of global positioning systems, data

formats, geographic information systems, grid sampling, soil fertility and physical properties, yield monitoring, variable-rate application, and economics.

AGRI 7001 - Senior Project Design, 1 Credit

Prerequisite(s): AGRI 4002 with D or better
Level: Upper
First of a two-semester sequence required for all students earning a Bachelor of Technology in Organic and Sustainable Agriculture. Students will develop a detailed project proposal, including strategic justification, project plan, risk management, resource and costs, and evaluation plans.

AGRI 7103 - Construction Techniques for Ag, 3 Credits

Prerequisite(s):
Level: Upper
The construction and maintenance of New York State farm structures will be analyzed in this class. A primary focus of the course will be the design and composition of barns for dairy and other livestock production. Students will learn how to calculate building size requirements, based on herd size, storage needs, and other requirements. Structures will be evaluated for compliance with building codes and cost of construction. As most students will enter into farming using pre-existing structures, retrofitting older structures for safety and improved operation efficiency will be included in the course.

AGRI 8003 - Senior Technical Project, 3 Credits

Prerequisite(s): AGRI 7001 with D or better
Level: Upper
Students gather and synthesize data according to a project design developed in AGRI 7001. Each student must do library research, a formal oral presentation, project demonstration, and submit a written project report.

ANIMAL HUSBANDRY/SCIENCE

ANSC 1101 - Calf Management Practices, 1 Credit

Level: Lower
Replacement rearing is an important enterprise on the modern dairy farm, with the greatest investment of time and money occurring during the first three months of the heifer calf's life. This course will provide the student with a basic understanding of the nutritional, environmental and health challenges a calf must go through during this period. Lab sessions will focus on mastering basic calf care skills including care for the newborn calf, feeding neo-natal calves, weaning practices, diagnostic procedures and biosecurity protocols to address calf health as well as economic comparisons for alternative feeding and housing systems.

ANSC 1201 - Computer Dairy Herd Recrd Mgmt, 1 Credit

Level: Lower
Using computers to manage dairy herds is essential to maintain and improve herd production and profitability. Today's dairy farmer needs to understand and utilize the powerful computer programs available to organize herd information. This course takes the student through the commonly used computer programs and utilizes actual herd information to allow students to practice using the management tools.

ANSC 1204 - Introduction to Animal Science, 4 Credits

Level: Lower
Course Attributes: Liberal Arts and Science
Survey of the dairy cattle and livestock industry, including beef, sheep, swine, and horses. Topics include breeding and feeding systems, disease control measures, housing and basic management practices; selection of animals for production, market, and breeding; characteristics of the major breeds, economic importance and marketing trends.

ANSC 1301 - Manage of the Transition Cow, 1 Credit

Level: Lower
Management of the transition dairy cow involves care of the pregnant cow from approximately one month pre-partum until about 60 days post-partum when the cow is at or near peak production in the lactation cycle. This course addresses management and

monitoring at the herd level as well as at the individual cow level. Recognizing dystocias and abnormalities, calving procedures, fresh cow physical examinations and post calving metabolic disorders and infectious diseases will be discussed. Labs will allow students to perform routine tasks including physical exams, body condition scoring, udder evaluations, collection of milk and blood samples, administration of supportive medications via oral, intramuscular, subcutaneous and intravenous routes. The use of record-keeping systems, protocols and tracking tools will also be included in lectures and labs.

ANSC 1402 - Biol & Manag of Prod Qual Milk, 2 Credits

Level: Lower

This course provides theoretical and hands-on experiences related to the production of quality milk. Emphasis will be placed on the basics of milk production by the cow, assessment of udder health, milking routines and parlor supplies, mastitis and mastitis treatment protocols, milking equipment operation and maintenance, milk inspections, and milk pricing.

ANSC 1501 - Herd Health & Lameness, 1 Credit

Level: Lower

This module will provide students both theory and practical skills in herdsmanship core competencies. Competencies will include cow handling techniques, lameness detection and treatment, herd health, recognizing diseases, nutrition basics, and cow comfort.

ANSC 1601 - Dairy Cow Reproduction Mgmt, 1 Credit

Level: Lower

This course will provide the student with a basic understanding of reproduction and artificial insemination (A.I.) techniques in dairy cattle. The student will gain an understanding of the anatomy of the bovine reproductive tract through examination and palpation of both slaughterhouse specimens and live palpations. The student will learn to read sire summaries, use linear scoring, apply recordkeeping approaches and analyze herd reproductive performance. Common reproductive diseases will be discussed as well as the latest information on heat detection and synchronization programs. The labs and two required field trips provide individual student A.I. training and practice sessions needed for the National Association of Animal Breeders (NAAB) certification.

ANSC 1901 - Introduction to Dairy Science, 1 Credit

Level: Lower

This one week module was developed to provide workforce development opportunities for the dairy industry in Western New York. This module will provide students both theory and practical skills in dairy industry core competencies.

ANSC 2102 - Dairy Cattle Reprod & A.I Tech, 2 Credits

Prerequisite(s): ANSC 1204 with D+ or better or VETS 3204 with C or better

Level: Lower

This course will provide the student with a basic understanding of reproduction and artificial insemination (A.I.) techniques in dairy cattle. The student will gain an understanding of the anatomy of the bovine reproductive tract through examination and palpation of both slaughterhouse specimens and live animal palpations. The student will learn to read sire summaries, use linear scoring, apply recordkeeping approaches and analysis of herd reproductive performance. Common reproductive diseases will be discussed as well as the latest information on heat detection and synchronization programs. The labs and two required field trips provide individual student A.I. training and practice sessions needed for the National Association of Animal Breeders (NAAB) certification.

ANSC 2114 - Dom Animal Anat & Phys, 4 Credits

Level: Lower

Course Attributes: Liberal Arts and Science

This course is a systems approach to the study of anatomy and physiology of common domestic animals, emphasizing Ruminant, Equine, Swine, Canine and Feline as the animal models. The on-line course materials will provide the student with a complete overview of how each body system functions in the maintenance of a normal healthy animal. The on-line course materials will be reinforced in the laboratory where skeletons, models and prosected specimen will allow the student to gain applied perspectives of the gross anatomy and normal physiology. Histologic slides, kodachromes, radiographs and live animals will also be used to enhance student understanding. Computer simulated dissection materials will also be used

to provide the opportunity for the students to refine their understanding of the required information.

ANSC 3003 - Feeds and Nutrition, 3 Credits

Level: Lower

This course provides the student with an understanding of animal nutrition. Students will learn feeding farm animals for growth, production, and profit, nutrient content and physiological value of feeds; nutrient requirements of farm livestock; physiology of digestion and developing and evaluating rations.

ANSC 3004 - Feeds and Nutrition, 4 Credits

Level: Lower

This course provides the student with an understanding of animal nutrition. Students will learn feeding farm animals for growth, production, and profit, nutrient content and physiological value of feeds; nutrient requirements of farm livestock; physiology of digestion and developing and evaluating rations.

ANSC 3013 - Animal Disease Control, 3 Credits

Prerequisite(s): ANSC 1204 with D or better or VETS 3204 with D or better

Level: Lower

Fundamental information on the nature of disease and its control and prevention are studied. Students are introduced to the causes, symptoms, prevention and treatment of common diseases as well as to the life cycles, damage, diagnosis, control and treatment of various internal and external parasites.

ANSC 3103 - Livestock Mgmt & Production, 3 Credits

Level: Lower

The course introduces the student to the management and production of assorted species of livestock. Breeds of sheep, beef, and swine will be studied as well as the skills in selecting and judging these species. Feeding and management of each of these species, as well as housing and equipment requirements for animals in specific types of operations will be examined. Students will be introduced to diseases and parasites that may be encountered when managing a species-specific livestock operation. Students will also gain insight into different types of marketing used in livestock production.

ANSC 3202 - Dairy Management Analysis, 2 Credits

Prerequisite(s): ANSC 3203 with D or better

Level: Lower

Dairy Management Analysis is an overview of specific subject matter which influences dairy cattle production units today. Subject matter includes dairy records analysis, fresh cow management, heifer and calf management, housing and ventilation, economics, profitability and employee management. Participation in the Northeast Dairy Challenge interscholastic competition or an assigned farm assessment is required.

ANSC 3203 - Dairy Cattle Production I, 3 Credits

Prerequisite(s): ANSC 1204 with D or better or VETS 3204 with D or better

Level: Lower

Dairy Cattle Production I is an introduction to specific subject matter which influences cattle production units today. Subject matter includes: on-farm disease control and biosecurity, calf and heifer management, milk letdown and physiology of lactation, udder health, basic herdsmanship skills and introduction to Dairy Comp 305 record keeping software.

ANSC 3204 - Dairy Cattle Production III, 4 Credits

Prerequisite(s): ANSC 1204 with D or better or VETS 3204 with D or better

Level: Lower

Dairy Cattle Production III focuses on dairy farm management analysis to troubleshoot and prioritize production and profitability opportunities. The course includes: developing on-farm observation skills, production records analysis using Dairy Comp 305, monitoring cow and rumen health, nutrition and feeding management and employee management.

ANSC 3222 - Dairy Calf Management, 2 Credits

Prerequisite(s): VETS 1214 with D or better or ANSC 2114 with D or better

Level: Lower

This course will provide the student with a basic understanding of the nutritional, environmental and health challenges a calf must go through from birth to yearling stage. Lab sessions will focus on mastering basic calf care skills. Field trips will be incorporated into the laboratories to expose students to different management approaches including custom calf raisers, and large and small herd replacement enterprises. Students will spend two hours per week practicing calf care procedures.

ANSC 3223 - Dairy Calf Management, 3 Credits

Prerequisite(s): ANSC 2114 with D or better or ANSC 1204 with D or better
Level: Lower
This course will provide the student with a basic understanding of the nutritional, environmental and health challenges a calf must go through from birth to yearling stage. Lab sessions will focus on mastering basic calf care skills. Field trips will be incorporated into the laboratories to expose students to different management approaches including custom calf raisers, and large and small herd replacement enterprises. Students will spend two hours per week practicing calf care procedures.

ANSC 4900 - Directed Study, 1 to 4 Credits

Level: Lower
A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chair. The instructor and student will confer regularly regarding the process of the study.

ANTHROPOLOGY

ANTH 1013 - Cultural Anthropology, 3 Credits

Level: Lower
Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science
This course promotes understanding of the world's cultures by providing an introduction to cultural anthropology, the study of contemporary cultures worldwide. Case studies are selected for specific ethnographic focus, through which to explore different approaches to life, considering questions of power and inequality, gender, personhood, and religion. The experiences of colonial encounters and internal domination are examined. Issues of development and cultural survival are addressed, as is the relationship of ecology to the social world, including one of the most pressing issues of our time: the management of resources that are held in common and utilized by a group. The aim of this course, ultimately, is to assist students in developing the ability to start thinking like an anthropologist; that is, to approach questions that interest them from an anthropological perspective.

ANTH 5113 - Cross-Cultural Encounters, 3 Credits

Level: Upper
Course Attributes: Gen Ed - Old World Civ
This course develops a framework for cross-cultural literacy - understanding different cultural contexts and the dynamics of cross-cultural communication. Attention is paid to the challenges that might be encountered in multi-cultural environments and how they might be resolved. Leading social, economic, and political institutions of several specific cultures will be examined. The course is writing-intensive and a project is required.

ANTH 5223 - Archaeology - Cities of Fire, 3 Credits

Level: Upper
The discovery of the buried city of Pompeii in the 18th century gave birth to the modern science of archaeology, and at the same time added greatly to our understanding of Roman civilization. "Cities of Fire" is offered to students enrolled in the study abroad program in Sorrento, Italy, and takes advantage of the unique cultural heritage of Campania (the region surrounding the Gulf of Naples). The course is a survey of the techniques of archaeology, the vulcanism of the region, and the history and culture of the Roman civilization in Campania. Field lectures at sites including Pompeii, Herculaneum, Baia, Cuma, Puteoli, Mt. Vesuvius and Napoli enrich classroom presentations, and provide a first-hand experience of the ancient cultures of Greece and Rome. Students investigate specific aspects of Roman architecture, city planning, and culture, and present their findings in research reports during field visits.

ALFRED STUDENT DEV CTR

ASDC 1012 - College and Life Skills*, 2 Credits

Level: Lower-Developmental/Remedial Course
Course Attributes: Remedial
This course will assist students in making the transition to college and in completing collegiate work successfully. In this course the student will learn strategies for: making use of campus resources; self-awareness and exploration; academic success; effective communication on a college campus; and management of time, health, and financial resources. Students will read and respond to articles, participate in class discussions, summarize topics verbally or in writing, and complete a short research project.

ASDC 2011 - Career Exploration & Planning*, 1 Credit

Level: Lower-Developmental/Remedial Course
Course Attributes: Remedial
This course will assist students with exploring and selecting a college major and/or career goal. The students will learn a decision making model designed to make appropriate, well-informed career/life choices. The students will engage in a variety of assessments using software programs and self directed career searches. Students will complete out of class assignments designed to integrate self-awareness with career options and will develop their own marketing materials such as resumes, cover letters, and career portfolios. This is a pass/fail course.

ASDC 2193 - Intro to Academic Literacy, 3 Credits

Level: Lower
This course focuses on the continued improvement of literacy skills - reading comprehension skills, reading efficiency and flexibility, critical thinking, development of a college-level vocabulary, and the grammar, writing, and study skills needed for success with college course work. Students may be placed in this course on the basis of their placement test scores or may take it as an elective to expand their basic literacy skill levels.

ASDC 4900 - Directed Study, 1 Credit

Level: Lower
A student may contract for one credit hour of independent study through an arrangement with an instructor who agrees to direct such a study or project. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the progress of the study.

AUTOMOTIVE

AUTO 1003 - Introductn to Parts Management, 3 Credits

Level: Lower
The course is designed to teach students the general function and importance of the automotive aftermarket and aftermarket parts supply network.

AUTO 1013 - Auto Parts Familiarization I, 3 Credits

Level: Lower
This course will teach the students to identify components sold in the automotive parts industry. Major automotive systems covered include brake, exhaust, fuel, ignition, and heating and air conditioning.

AUTO 1109 - Brakes, Steering & Susp Sys, 9 Credits

Level: Lower
This course provides a practical understanding of the principles, operation, diagnosis, and repair of suspension, steering, and brake systems. Vehicle alignment, tire balancing, and vibration diagnosis are included. Students will be trained to operate a variety of brake, suspension, and alignment equipment while performing actual repairs, adjustments, and diagnosis. This training will supplement the students' auto education in preparation for entry-level employment.

AUTO 1124 - Automotive Welding, 4 Credits

Level: Lower
This course covers all facets of welding as they apply to the servicing of cars and light trucks.

Some methods covered are: stick, oxy-acetylene, MIG, and TIG. The safe use of the cutting torch and plasma cutter and booth time is supplemented by the use of various processes in the actual repair of vehicles and equipment.

AUTO 1135 - Bsc Elctrn & Compnt Overhaul, 5 Credits

Level: Lower

This course is designed to provide instruction in the diagnosis and repair of electrical circuits, charging systems, and starting systems. OHMS law, alternators, and starters will be investigated.

AUTO 1149 - Inspec, Main, AC Htng & Clng, 9 Credits

Level: Lower

This course includes lab application of vehicle exhaust, tires, preventive maintenance, and annual safety inspection checks. Repair techniques to insure driver comfort and engine efficiency through the control of heat are studied as they apply to auto cooling, heating, and air conditioning systems.

AUTO 1169 - Tune-Up Elec Controls & Diag, 9 Credits

Level: Lower

The students will become proficient in diagnostics and repair of ignition systems, fuel systems, charging and starting systems, electrical & computer applications, emission systems, and complete engine diagnostics.

AUTO 1219 - Truck Brake, Steer & Sus Sys, 9 Credits

Level: Lower

This unit of instruction is designed to train high school graduates and adult learners in the service and diagnosis of light truck brake, steering, and suspension systems. Vehicle alignment, tire balancing, and vibration diagnosis are included. Students will be trained to operate a variety of brake, suspension, and alignment equipment while performing actual repairs, adjustments, and diagnosis. This training will supplement the students' truck education in preparation for entry-level employment.

AUTO 1224 - Welding, 4 Credits

Level: Lower

The application of several common welding methods in use in the heavy repair field is covered in this course. Actual welding using arc, gas, MIG, TIG, and spot are practiced in the lab. The safe use of the cutting torch and plasma cutter and "booth time" is supplemented by the use of various processes in the actual repair of vehicles and equipment.

AUTO 1239 - Trk Insp, Maint, AC, Clng/Htng, 9 Credits

Level: Lower

This course includes lab application of vehicle preventive maintenance and mandated annual safety inspection. Repair techniques to insure driver comfort and engine efficiency through the control of heat are studied as they apply to the truck cooling, heating and air conditioning systems. Analyzing how refrigerated cargo is maintained is a part of this course.

AUTO 1245 - Trk Bsc Elctrns & Cmpnt Ovrhal, 5 Credits

Level: Lower

This course is designed to provide instruction in the diagnosis and repair of electrical circuits, alternators, distributors, starters, and fuel systems. Basic wrecker operation and the use of manuals and computer information services are also included.

AUTO 1306 - Rust Repair, 6 Credits

Level: Lower

Encompasses the causes, repair, and prevention of rust formation and develops an awareness in the student that it is his/her ethical duty to make rust repairs properly and economically.

AUTO 1313 - Wrecker Operation & Estimating, 3 Credits

Level: Lower

This course provides instruction and practical experience in wrecker operation including hook-ups, winching, dolly use, wheel lifts, and safety. It includes instruction and practical experience in auto body damage estimate writing and analysis.

AUTO 1326 - Body Welding, 6 Credits

Level: Lower

This course covers welding methods used for securing body sheet metal including the thinner, high-strength, low alloy steels. Some of the methods covered in depth are: arc, oxy-acetylene, MIG, and TIG welding. Emphasis is placed on proficiency in repairing steels found in panels and vehicle frames, the use of heat as a straightening medium is investigated, and choosing welding equipment for a body shop, sheet metal fabrication and fuel tank repairs are included.

AUTO 1343 - Refinishing Basics, 3 Credits

Level: Lower

Develops in the student the basic skills of the refinishing industry and provides the technical knowledge of different types of finishes as well as the sequence of foundation coats.

AUTO 1344 - Recondtnng & Mechancl Componts, 4 Credits

Level: Lower

Designed to acquaint trainee with the proper process of reconditioning a vehicle before customer delivery. Students will learn how to remove and install seat upholstery as well as interior trim panels and hardware.

AUTO 2003 - Auto Parts Familiarization II, 3 Credits

Level: Lower

This course will teach the students to identify components sold in the automotive parts industry. Major automotive systems covered include engine components and transmissions.

AUTO 2013 - Cataloging and Pricing, 3 Credits

Level: Lower

The course is designed to teach students the basic format components in most aftermarket catalogs including the contents, application sections and illustrations. The course will also teach students how to obtain correct information from a customer, and as economically as possible, provide assistance.

AUTO 2169 - Truck Gasoline Engine Tune-up, 9 Credits

Level: Lower

The students will become proficient in diagnostics and repair of ignition systems, fuel systems, charging and starting systems, electrical & computer applications, emission systems, and complete engine diagnostics.

AUTO 2309 - Brakes, Susp & Structrl Anlys, 9 Credits

Level: Lower

This unit of instruction is designed to train high school graduates and adult learners in the service and diagnosis of automotive brake and suspension systems as they relate to collision repair. Vehicle alignment, tire balancing, and vibration diagnosis are included. Students will be trained to operate a variety of brake, suspension, and alignment equipment while performing actual repairs, adjustments, and diagnosis. In addition, identification and analysis of structural damage, as well as frame and body measuring techniques are covered. This training will supplement the students' autobody education in preparation for entry-level employment.

AUTO 2365 - Chassis Electrical, 5 Credits

Level: Lower

This unit of instruction is designed to enable trainees to become proficient in chassis electrical testing, repair, and component replacement.

AUTO 2503 - Prev Maint for Hvy Tk & Diesel, 3 Credits

Level: Lower

This course is designed to teach scheduled preventive maintenance procedures as they apply to trucks and heavy equipment. Vehicle system checks include air brakes, tires, critical fluids and lubrication points. Training is focused on ensuring safety and reliability between scheduled Preventive Maintenance checks.

AUTO 3003 - Auto Body & Related Parts, 3 Credits

Level: Lower

This course familiarizes students with auto body parts, construction, nomenclature, paint and materials. Students also learn about body panels, interior trim, and other dealer items in the auto body field. Safety issues will also be addressed.

AUTO 3013 - Auto Parts Management I, 3 Credits

Level: Lower

This course provides instruction and practical application of the various aspects of managing an auto parts sales business. Students will learn how to obtain the current information from technicians and retail customers in dealership operations. Students will also develop an insight into employers' expectations of a salesperson and expert counterperson.

AUTO 3023 - Computer Applitn in Parts Mgmt, 3 Credits

Level: Lower

In this course the students will define and demonstrate the functions of computer hardware, printer and software used in automotive parts management. Students will apply this knowledge both in a simulated classroom environment and in the campus auto parts store.

AUTO 3409 - Engine Service, 9 Credits

Level: Lower

Theory of operation and repair procedures of gasoline engine valve systems, crankshaft and bearings, connecting rods, cylinders, and pistons, diagnosis of engine malfunctions repair procedures, cooling system repairs and diagnosis, cylinder boring, piston pin fitting, connecting rod reconditioning, valve guide resizing and replacement, valve seat replacement, and other machine work and service procedures.

AUTO 3429 - Adv Elctrn & Engine Perfmnc, 9 Credits

Level: Lower

Lecture sessions cover most areas of the automobile except engine and drive train repairs. Designed to update and bring together earlier training with emphasis on diagnosing sophisticated automotive electrical, drivability and emission-related problems. This is an extremely critical area with enhanced inspection programs and OBDII systems.

AUTO 3504 - Motorsport Fabrication I, 4 Credits

Level: Lower

This course is designed to teach the student the fundamental skills of complete chassis and roll cage fabrication. Major topics include principles of layout, bending, bead rolling, riveting and welding processes. Laboratory exercises emphasize technique and skill development to build race cars.

AUTO 3506 - Introduction to Motorsports, 6 Credits

Level: Lower

This course is designed to teach the student the fundamental skills of team organization and management. Major topics include introduction to motor sports, team structure, budgeting and finance. Laboratory exercises emphasize technique and skill development for success at the track. A sponsorship proposal is developed by each student.

AUTO 3514 - Racing Suspension Dynamics, 4 Credits

Level: Lower

This course is designed to teach the student advanced skills in race car chassis. Major topics include principles of suspension set-up, development and weight transfer. Laboratory exercises emphasize technique and skill development in modified suspension and steering geometry to build race cars to meet different track demands.

AUTO 3524 - Hgh Prfmnce Tune-up/Electrncs, 4 Credits

Level: Lower

This course is designed to teach the student the advanced skills of tuning the race car for optimum performance at the track. Major topics include principles of handling modified race fuels and modified delivery. Laboratory exercises emphasize techniques and skills to modify fuel and ignition systems.

AUTO 3534 - Hgh Permnce Sterng/Bks/Chasis, 4 Credits

Level: Lower

This course is designed to teach the student the formulas and concepts of race car brakes and steering. Major topics include the principles of modifying chassis, brakes, and steering. Laboratory exercises emphasize technique and skill development in the different modified

demands.

AUTO 3535 - Hgh Prfmnce Engine Building, 5 Credits

Level: Lower

This course is designed to teach the student the advanced skills for reconstruction of high performance engines. Major topics include modified engine building and dynamometer testing. Laboratory exercises emphasize technique and skill development in engine assembly and dynamometer testing.

AUTO 3544 - Motorsports Aerodynamics, 4 Credits

Level: Lower

This course is designed to teach the student the fundamental principles of aerodynamics for racing and performance cars. Major topics include principles of aerodynamic effects on braking, handling, lift and drag coefficient. Laboratory exercises emphasize technique and skill development to build race cars.

AUTO 3545 - Motorsport Fabrication II, 5 Credits

Level: Lower

This course is designed to teach the student the advanced skills of complete chassis, cage, and suspension fabrication. This course and its laboratory exercises evaluate the actual process of fabricating a complete racecar.

AUTO 3609 - Heavy Duty Drive Train, 9 Credits

Level: Lower

This course consists of the service and repair of heavy duty clutches, transmissions, drive line and rear axle, leaf, torsion bar, and air suspensions, the alignment of front and rear axle, also alignment of trailer suspension and on-vehicle tire balancing. This will include Eaton and Meritor clutches, Mack and Eaton transmissions, and Meritor, Eaton and Mack rear axles. Also covered are Road Ranger auto shift transmissions.

AUTO 3623 - Air Brake Service, 3 Credits

Level: Lower

This course consists of maintenance and repair of air brake systems including compressors, valves, tubing, and circuitry. This course will also include troubleshooting of foundation brakes and related components. Also covered is air ABS brake components, operation and troubleshooting.

AUTO 3649 - Diesel Engine Service, 9 Credits

Level: Lower

This nine credit hour course covers the procedures needed to understand, test, repair, and overhaul diesel engines and their related components. Major emphasis is placed on the mid-range and heavy duty diesels of the following makes: Cummins, Caterpillar, Detroit Diesel, Mack, John Deere, and Navistar. Covered is the use of special tools and equipment necessary to troubleshoot, maintain, and overhaul these engines and their related components.

AUTO 3809 - Inspec, Gen Alignment & AC, 9 Credits

Level: Lower

Includes lab application of body panel alignment and mandated annual safety inspection, repair techniques to insure customer satisfaction with component fit and operation, keeping customer safety in mind when components are replaced, and techniques to insure customer comfort and engine efficiency through control of heat as they apply to auto cooling, heating and air conditioning systems.

AUTO 3819 - Auto Body Skls/Computrzed Est, 9 Credits

Level: Lower

Includes the different states of repair: metal analysis, metal straightening, filling and metal finishing, glass replacement, alignment problems, fender and door replacement, any and all small, quick, one or two day jobs. Also includes how to make manual and computerized estimates.

AUTO 4013 - Auto Parts Inventory Control, 3 Credits

Level: Lower

In this course the student will learn about the various types of inventory controls available to the automotive and related parts replacement fields. These controls include balance versus acquisition costs, computerized management systems, and inventory balance.

AUTO 4023 - Manufacturer Catalog & Pricing, 3 Credits

Level: Lower

The course is designed to teach students the basic format components in most manufacturer's catalogs, including the cover, contents, applications, sections, and illustrations. The course will introduce students to the process of obtaining correct information from a customer, as economically as possible, and provide assistance.

AUTO 4033 - Auto Parts Management, 3 Credits

Level: Lower

This course familiarizes the student with the many aspects of managing a parts store. Areas covered are management responsibilities, individual development, steps in building a successful team and objectives of the management team.

AUTO 4363 - Heavy Duty Elec/Hydr Special, 3 Credits

Level: Lower

This three credit hour course consists of the service and troubleshooting of electrical systems as they pertain to heavy equipment, truck and diesel. This will include series parallel circuits including 12 and 24 volt systems. Included in this course is the service and troubleshooting of hydraulic systems as found in heavy equipment, truck and diesel. This will include pumps, valves, actuators, accumulators and other related components in today's hydraulic systems.

AUTO 4439 - Shop Management & Enhanced Sys, 9 Credits

Level: Lower

This course will provide insight into other aspects of the automotive trade. Covered in shop management is repair order writing, duties of a shop adviser, customer relations, customer communications, questioning and follow-up, estimating repair costs, checking for recalls, searching for technician service bulletins, researching new product information, motorist's bill of rights, lemon laws and understanding the nature of the automotive business and reviewing Hybrid vehicles information. The lab portion allows the student to perform as a service manager in one of our many automotive shops. Work scheduling, quality control, maintenance, and record keeping are stressed as part of this program.

AUTO 4449 - Drive Train Service, 9 Credits

Level: Lower

Study and actual repair of standard, automatic, and automatic transmissions and transaxles with emphasis on overdrives and electronically controlled units. Full coverage of clutches, axles, drivelines, C-V joints, and 4 x 4 transfer cases, as well as open, limited-slip, and front drive differentials. Extensive hands-on work in a busy "line shop" situation. This is a seven and one-half (7 1/2) week course.

AUTO 4629 - Major Refinishing, 9 Credits

Level: Lower

This course is designed to further the student's knowledge and practical experience in the use of painting and refinishing equipment, blending paints, metallic finishes, and hard to match colors, correcting paint failures, custom refinishing and how to solve their problems.

AUTO 4639 - Major Collision Repair, 9 Credits

Level: Lower

Provides instruction in the repair procedures of vehicles considered by appraisers to be totals, or near totals. Study and repair of frame and uni-body damage, suspension repairs. This includes computerized measuring systems, plastic welding, use of structural adhesives, and complete vehicle refinishing.

AUTO 4669 - Diesel Fuel System Service, 9 Credits

Level: Lower

This nine credit hour course is intended for heavy equipment, truck and diesel mechanic majors. Coverage will include the fundamentals of diesel fuel systems, both mechanical and computer-controlled will be covered. Engine tune-up procedures, and diesel fuel system troubleshooting and computer usage will be included. Injection pumps, governors, injectors, emission control devices, automatic advance units and transfer pumps of the following

systems will be covered: American Bosch, Caterpillar, Detroit Diesel, Cummins and Navistar.

AUTO 4900 - Directed Study, 3 to 9 Credits

Level: Lower

A capstone course which provides an integrative experience in applying the knowledge and skills of earlier course work, with particular emphasis on furthering their in depth skills in the contracted area. The student may contract for three to nine hours of independent study through an arrangement with the instructor and approval of the department chairman. The chairperson shall be kept informed of the progress of study by the instructor and student. Enrollment is limited in order to allow each student the opportunity to pursue his/her field of special interest.

BIOLOGY

BIOL 1101 - Topics in General Biology, 1 Credit

Corequisite(s): BIOL 1104

Level: Lower

A one-credit hour course to supplement the General Biology (BIOL 1104) course for biology majors only. The focus of this course is to expand on topics discussed during the lecture/laboratory portions of BIOL 1104 and to discuss current topics of interest to biology students. The format of the course is reading and discussion. Each participant will be responsible for being a discussion leader at least once during the semester. The discussion leader's role is to introduce the topic, provide background information about the subject, and encourage the group to offer comments and ask questions. Topics for discussion may be directly related to lecture material or may originate from current media sources, as long as that topic was already introduced in the BIOL 1104 class lecture or lab and the students have some familiarity with the subjects.

BIOL 1104 - General Biology I, 4 Credits

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This course incorporates a survey of molecular, cellular, and hereditary principles. Topics include the chemistry and physics of cellular activities; the ultra-structure of cells, photosynthesis and cellular metabolism; the structure and function of DNA; recent developments in DNA bio-technology; and hereditary aspects of early embryonic development of plants and animals into complex structures (organogensis).

BIOL 1114 - Human Anat & Physiology I, 4 Credits

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

The first in a two-semester Internet-based course sequence, including laboratory components, that covers the structure and function of the human body. General issues about organization and covering, support and movement of the body are covered. Topics include an orientation to the human body, chemistry of life, cells and tissues, and the integumentary, musculoskeletal, nervous, and sensory systems.

BIOL 1304 - Botany, 4 Credits

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

Each of us is intimately involved with plants. We wear them, ingest them, exchange gas molecules with them, live under them, etc. In this course students will develop knowledge of plant morphology (form) and function that later enhances their lives. Topics include the study of human food, ornamental plants, feed, forestry, and any other use of plants to sustain life on the planet Earth or provide other ecosystem services. The laboratory portion of the course includes field ecology and classification of important plant groups in addition to morphological and anatomical study of the major plant organs. Use of the laboratory, the college farm, field trips, and the plant science greenhouse integrates various teaching methods for the above subjects.

BIOL 1404 - Anatomy and Physiology I, 4 Credits

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This course is the study of the gross and microscopic anatomy of various human systems, emphasizing how structure facilitates function. The areas emphasized are; cells, tissues, and the integumentary, skeletal, muscular, and nervous systems and their organs. Various sense organs are investigated in connection with the nervous system.

BIOL 2111 - Biological Sciences Seminar, 1 Credit

Prerequisite(s): (BIOL 2204 with C or better and BIOL 1104 with C or better and CHEM 1984 with C or better) or (CHEM 1114 with C or better and CHEM 2124 with C or better)
Level: Lower
This course is intended for students typically in their fourth semester of the two-year Biological Sciences curriculum. The course is designed to prepare the student for transfer to a four-year institution and/or enter the workforce. Students are introduced to the theoretical and practical aspects of preparing and delivering a full-feature (40-45 minute length) presentation on a given topic within the realm of a biological discipline.

BIOL 2204 - General Biology II, 4 Credits

Prerequisite(s): BIOL 1104 with D or better
Level: Lower
Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science
A continuation of BIOL 1104 (General Biology I), with emphasis on animal and plant systematics, evolution and ecology. Laboratory topics include the study of the following mammalian organ systems: digestion, respiration, circulation, homeostasis, reproduction, chemical and nervous control, and musculoskeletal structure and function. Lecture topics include systematics, evolution, ecosystems, and bioenergetics, including human impacts on the environment.

BIOL 2214 - Human Anat & Physiology II, 4 Credits

Prerequisite(s): BIOL 1114 with C or better or BIOL 1404 with C or better
Corequisite(s):
Level: Lower
Course Attributes: Liberal Arts and Science
The second in a two-semester Internet-based course sequence, including laboratory components, that covers the structure and function of the human body. General issues include the maintenance of the human body, pregnancy, human development and heredity. Topics include the endocrine, blood, cardiovascular, lymphatic, immunity, respiratory, digestive, urinary, and reproductive body systems.

BIOL 2301 - Human Biology Laboratory, 1 Credit

Level: Lower
Course Attributes: Liberal Arts and Science
A group of laboratory exercises to aid in the study of human systems and their physiology. The laboratory sessions are designed to provide students with a basic understanding of the structure and functions of cells, tissues and organ systems. The goals of the course are to promote an appreciation for the extraordinary complexity of our bodies; to develop a proficiency in the use of laboratory equipment and the proper handling of materials, and to foster the development of self-sufficiency in the conduct of laboratory experiments and observations.

BIOL 2303 - Human Biology, 3 Credits

Level: Lower
Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science
An introduction study of human systems and their physiology. Included in the course are examination of how the body normally functions at the cellular, tissue, organ system levels. Topics will include basic chemistry, cell structure and biochemistry, digestion, circulation and blood, immunity, respiration, excretion, nervous integration, senses, endocrine system, and reproduction. Sexually transmitted diseases also will be discussed. Students cannot receive credit for BIOL 2303 if BIOL 1404 or BIOL 1114 is concurrently or previously taken.

BIOL 2504 - Anatomy & Physiology II, 4 Credits

Prerequisite(s): BIOL 1404 with D or better
Level: Lower
Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science
This course is a continuation of BIOL 1404. It is a study of the gross and microscopic

anatomy of various human systems, emphasizing how structure facilitates function. The areas emphasized are the endocrine, respiratory, reproductive, cardiovascular, urinary, lymphatic, immune, and digestive systems.

BIOL 2633 - Histotechniques, 3 Credits

Prerequisite(s): BIOL 1104 with D or better or BIOL 1404 with D or better or BIOL 1114 with D or better or ANSC 1214 with D or better or VETS 2014 with D or better
Level: Lower
An applied and theoretical technology course which provides instruction and hands-on experiences in the preparation of tissues for microscopic examination by paraffin, and frozen section and smear techniques. Normal and diseased animal and plant tissues will be used to provide the students an opportunity to use a variety of techniques involved in processing tissues. Tissue identification and classification will be discussed as it relates to preparation procedures. Care, maintenance, and use of instrumentation in tissue preparation will be stressed. One-hour lecture and 2 two-hour laboratories per week with significant additional supervised time spent in the lab by students.

BIOL 2703 - Topics in Tropical Ecology, 3 Credits

Level: Lower
Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science
An introduction to the natural and human ecology of Central American rainforests, coastal habitats, and near-shore environments. Major topics of study include rainforest, mangrove, and coral reef structure and biodiversity, ethnobotany, environmental impacts of plantation monoculture, and models of sustainable agriculture. Ecological principles will be observed in a variety of settings in the highland and lowland forests and coastal environments of Costa Rica.

BIOL 2801 - Environmental Science Lab, 1 Credit

Level: Lower
Course Attributes: Liberal Arts and Science
A series of field-oriented laboratory experiences involving analyses of various local ecosystems. Topics to be stressed include identification of organisms, use of environmental monitoring equipment, and collection and interpretation of field data.

BIOL 2803 - Environmental Science, 3 Credits

Level: Lower
Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science
Topics include the interrelationship between and among organisms and their environment and the effect of humans on the environment, including pollution, population, food, power, and other resources.

BIOL 4254 - General Microbiology, 4 Credits

Level: Lower
Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science
Bacteria and their related infections are emphasized along with viruses, rickettsia, fungi, and other disease causing agents. The primary emphasis is the terminology related to microbial agents, clinical diagnosis, laboratory detection, disease and control of microorganisms. Other topics include bacterial reproduction, morphology, structures, nomenclatures, phsyology, genetics, diagnostic bacteriologic media and the immune system.

BIOL 4401 - First Aid, 1 Credit

Level: Lower
An introductory course dealing with the ways to handle first aid situations. Included are measures to be taken in treating shock, bleeding, fractures, poisonings, and drug overdoses. Emphasis is placed on preparing individuals to handle common household emergencies, and recognizing and treating cardiac arrest and choking victims. Completion of the course leads to certification in standard first aid and cardiopulmonary resuscitation.

BIOL 4403 - Pathophysiology, 3 Credits

Prerequisite(s): (BIOL 2504 with C or better * or BIOL 2214 with C or better *) and (BIOL 1404 with C or better or BIOL 1114 with C or better)
Corequisite(s):
Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science
A study of disruptions of normal physiology, the processes that bring about these disruptions, and the various ways in which disruptions manifest themselves as symptoms, signs, physical findings, and laboratory findings. The course will explore the pathophysiology of genetic diseases, hypersensitivity and autoimmune diseases, infectious diseases, neoplasia, diseases due to physical and chemical agents, disturbances of fluid and electrolyte balance, and endocrine dysfunction.

BIOL 4404 - Emergency Medical Technology, 4 Credits

Level: Lower
This course requires active participation in the field of Emergency Medical Services (ambulance, rescue squad, hospital, etc.) and permission of the instructor. The fundamentals of emergency medical care are presented in accordance with the New York State EMS Code. Emphasis is placed on the theory and practice of pre-hospital emergency care. Successful completion of the course requires attendance at all sessions and achievement of a passing grade in all evaluation phases as required by the New York State Department of Health. Learning experiences are acquired in both the classroom and hospital emergency departments. Satisfactory completion of all requirements will lead to certification as an "Emergency Medical Technician."

BIOL 4900 - Directed Study, 1 to 4 Credits

Level: Lower
Elective courses for students interested in advanced work in the biological sciences on problems in their special field of interest. Enrollment limited in order to allow each student the opportunity to pursue his/her field of special interest.

BIOL 5254 - Principles of Microbiology, 4 Credits

Prerequisite(s): BIOL 2303 with C or better or BIOL 1104 with C or better or BIOL 1404 with C or better or BIOL 2204 with C or better or BIOL 2504 with C or better or VETS 1203 with C or better or VETS 1214 with D or better or VETS 2013 with C or better or VETS 2014 with C or better
Level: Upper
Course Attributes: Liberal Arts and Science
A survey of microorganisms, their structures, physiology, and identification, with the various medical and non-medical implications in our daily lives. Topics include prokaryotic cell structure and function; biochemical processes; physical and chemical factors that affect cell growth; classification and identification, and physical and chemical methods of control. A major portion of the course deals with the pathogenic properties of microorganisms and the body's defense mechanisms including the functions of the immune systems. Laboratory topics include bacterial patient specimen collection and processing as done in a microbiology laboratory and pathogen identification and antibiotic sensitivity determination.

BIOL 6403 - Advanced Pathophysiology, 3 Credits

Prerequisite(s): BIOL 2504 with D or better or BIOL 2214 with D or better
Level: Upper
Course Attributes: Liberal Arts and Science
This internet-based course examines abnormal human physiology in a clinical context, with intent to develop specific intellectual skills related to nursing and other allied health professions. Pathophysiology is considered from a systemic perspective, with emphasis given to cellular abnormalities, disruptions of homeostasis, infectious disease, inflammation, and disorders of the blood, immune, cardiovascular, respiratory, digestive, endocrine, neurological, musculoskeletal, integumentary, renal, genitourinary, and reproductive systems. The course concludes with case study presentations to allow students to derive and discuss correlations among clinical healthcare or other related disciplinary settings.

BIOL 6534 - Genetics, 4 Credits

Prerequisite(s): BIOL 1104 with C or better or BIOL 1304 with C or better or BIOL 1404 with C or better or VETS 1214 with C or better
Level: Upper
A study of heredity and the gene from the perspective of the individual, the cell, and the population. The human species will be emphasized along with the recent advances in biotechnology. Laboratory work includes Drosophila breeding, polymerase chain reaction, and DNA electrophoresis.

BUILDING CONSTRUCTION

BLCT 1012 - Blueprint Reading - Part I, 2 Credits

Level: Lower

This course is an introduction to the different types of plans and how they represent a finished building. Shows the parts of blueprints in detail including symbols, the title block, and grid lines. Introduction to site plans.

BLCT 1016 - Operations - Part I, 6 Credits

Level: Lower

This course covers the use and maintenance of the most commonly used machines on a construction site. The course emphasizes safe operation as well as basic operating techniques for each machine. This will include safe setup of machines as well as excavating foundations, septic systems, driveways, etc.

BLCT 1021 - College & Life Skills, 1 Credit

Level: Lower

This course is designed to help the student be successful at college and beyond. General topics will be presented to aid in student success and familiarization with campus life, such as career exploration, work habits, study habits, and critical thinking.

BLCT 1022 - Wood Fabrication Technology I, 2 Credits

Level: Lower

This course introduces hand and power tools. Skills are developed through practical experience in tool usage through a series of required projects. Students will learn hand tool skills by completing a series of wood joints using chisels, planes, handsaws, and layout tools. Students will expand on these skills while building two shop projects; one project using only hand tools and the other project introducing them to stationary power tools, usage, setup and safety. Power tools used include table saws, radial arm saws, jointers, planers, band saws, drills, and sanders.

BLCT 1023 - Construction Essentials I, 3 Credits

Level: Lower

This course provides the student with an introduction to foundation layout, to blueprints, and light commercial construction. Course content includes applicable terminology, reading construction drawings to interpret dimensions, building layout, foundation layout, and light commercial building techniques.

BLCT 1024 - Construction Essentials II, 4 Credits

Level: Lower

This course provides students with a basic knowledge of residential floor and wall framing and introduces them to codes relevant to these systems. The course content includes applicable terminology, plan reading necessary for layout, and instruction in framing conventional floor and wall systems. Units also included are sheathing materials and installation, insulation products with reference to energy codes and installation, roofing materials, and hand/power tool safety.

BLCT 1031 - Identification of Heavy Equip, 1 Credit

Level: Lower

Introduces the ten most used pieces of heavy equipment such as dump trucks, backhoes, and bulldozers. Describes the functional operation and uses for each piece of equipment.

BLCT 1032 - Equipment Safety - Part I, 2 Credits

Level: Lower

Provides a comprehensive overview of safety requirements on job sites with emphasis on OSHA and NIOSH requirements. Presents basic requirements for personal protection, safely driving equipment, and HazCom.

BLCT 1034 - Workplace Environment & Safety, 4 Credits

Level: Lower

This course explores the opportunities provided by the various occupations associated with the construction trades and covers the insurance requirements, as well as the risk management and loss control issues in this industry. Much of this course will follow the

training requirements set forth by the Occupational Safety and Health Administration (OSHA) Construction Safety Outreach Program including the use of personal protective equipment, electrical safety, fall protection and the safe use of scaffolding and ladders. Excavation safety and materials handling, proper record keeping requirements, and harassment policies will also be covered in this course.

BLCT 1043 - Introduction to Earth Moving, 3 Credits

Level: Lower

Provides a broad introduction to the processes of planning and executing earth moving activities on various types of construction projects. xplains the uses of heavy equipment such as bulldozers, scrapers, excavators, and loaders.

BLCT 1044 - Blueprint Reading & Grades-Par, 4 Credits

Level: Lower

This course is an introduction to different types of plans and how they represent finished grades of buildings. This course will present the parts of blueprints in detail including symbols, the title block, and grid lines. Students will be introduced to site plans and the concept of preparing graded surfaces using heavy equipment. Identification of construction stakes and interpretation of marks on each type of stake will be covered. The process for grading slopes will also be discussed.

BLCT 1052 - Soils - Part I, 2 Credits

Level: Lower

This course provides an overview of soil composition and characteristics. The students will describe different types of soil classification methods and how to use them. The course introduces the concept of soil compaction in highway and building construction.

BLCT 1053 - Safety & Ident of Hvy Equip, 3 Credits

Level: Lower

This course introduces the most used pieces of heavy equipment. The course describes the functional operation for each piece of equipment while providing a comprehensive overview of safety requirements on job sites with emphasis on OSHA, and NIOSH requirements. Basic requirements for personal protection, safely operating equipment, and HazCom will be presented.

BLCT 1054 - Wood Fabrication Technology, 4 Credits

Level: Lower

This course introduces shop drawings, hand and stationary power tools, covering interpretation, usage, setup and safety. Skills are developed through practical experience in tool usage through a series of required projects. Each student will build projects that will require shop drawing interpretation, setup and safe use of tools and machines, along with the setup and use of jigs.

BLCT 1062 - Grades - Part I, 2 Credits

Level: Lower

Introduces the concept of preparing graded surfaces using heavy equipment. Covers identification of construction stakes and interpretation of marks on each type of stake. Describes process for grading slopes.

BLCT 1104 - Intro to Superv & Management, 4 Credits

Level: Lower

This course provides students with the necessary tools to pursue an entry level career in construction supervision/management. Topics include but are not limited to safety, contracts, estimating, blue print reading, planning, scheduling, human relations, quality control, cost awareness, documents, negations, and problem solving.

BLCT 1119 - Plumbing Matr & Water Sources, 9 Credits

Level: Lower

Study of the various materials used in the plumbing, heating, and air conditioning business, i.e., cast iron, steel pipe, copper tube, and pvc plastics plus the appropriate use of each one, and learning the use of basic hand tools and machines used in the plumbing trade.

BLCT 1129 - Piping Layout & Fixture Instal, 9 Credits

Level: Lower

Study of applications and pipe sizing of water supply, drains, and vents in residential and

small commercial applications; instruction in design, use, and installation of plumbing fixtures and appliances; repair of plumbing components; business practices and blueprint reading.

BLCT 1132 - Estimating I, 2 Credits

Level: Lower

This course develops mathematical concepts and application skills necessary for the carpenter and mason to estimate building quantities and associated costs. Topics include arithmetic operations with whole numbers, decimals, and fractional numbers. Formulas for area, volume, board foot quantities, and basic geometry as it pertains to construction will be studied. The quantities estimated are in the framing/sheathing stages of enclosing a building including concrete, brick, and block calculations.

BLCT 1142 - Masonry I, 2 Credits

Level: Lower

This course covers basic block laying, sizes, uses, layout, bonding, and foundations. Mortar mixing is studied along with an introduction to concrete footers and footer forming. Foundation drainage and damp proofing are also covered in this course.

BLCT 1523 - Appl Bsc Sevcman Prin II, 3 Credits

Level: Lower

This course is designed to teach students the basic serviceman skills. This is the second course in a three-section program. It is to be reinforced with practical on the job training. This course will be taught within a two-week period.

BLCT 2014 - Basic Masonry, 4 Credits

Level: Lower

This course covers basic block laying, sizes, uses, layout, bonding, footers, and foundations. The various types of mortar mixes and the evolution of the masonry trade, its tools and materials will be studied. Foundation drainage and damp proofing and an introduction to bricklaying are also covered in this course.

BLCT 2023 - Equipment Safety - Part II, 3 Credits

Level: Lower

This course presents safety requirements for operating heavy equipment, activities of the Occupational Safety and Health Administration relative to OSHA inspections and reporting requirements, and use of protective gear. This course will prepare students for the OSHA 10 hour certification exam.

BLCT 2032 - Wood Fabrication Technology II, 2 Credits

Prerequisite(s): BLCT 1022 with D or better

Level: Lower

This course expands on BLCT 1022 Wood Fabrication Technology I., covering hand and power tools usage through practical experience with the tools. Each student will build projects that will require shop drawing interpretation and copying pieces from a jig or actual item. Compound bevels and cutting techniques are introduced that require advanced setups on the table saw and other power tools in the lab. Students are expected to produce a higher quality project. All tool usage is encouraged (hand and power).

BLCT 2033 - Equip Preventive Maintenance, 3 Credits

Level: Lower

This course covers preventive maintenance responsibilities of the entry level heavy equipment operator. Course topics include specifying basic equipment subsystems and major mechanical systems, knowing how and when to complete routine inspections of equipment, and how and when to service equipment.

BLCT 2034 - Grades & Blueprint Reading II, 4 Credits

Level: Lower

This course presents proper practices for setting grades off benchmarks and describes methods of setting grades using various types of levels. The trainee is taught how to read and interpret construction plans to determine grading requirements. It will review basic grading operations, and also cover site prep, U.F.P.O., contours, establishing grades, reading and understanding site plans.

BLCT 2036 - Operations Part II, 6 Credits

Prerequisite(s): BLCT 2033 with D or better *

Level: Lower

This course continues the study of tractors, dump trucks and front-end loaders. Safe operation practices as well as preventive maintenance requirements will be covered for each piece of equipment. Common uses of each piece of equipment and their attachments will also be discussed. Site training will also continue on the backhoe and bulldozer. Students will be introduced to advanced positioning systems and automated controls.

BLCT 2042 - Historic Roofing Materials, 2 Credits

Level: Lower

This course will provide an overview of materials commonly used in historic roofing construction and how they differ from the materials commonly used today. We will look at the natural materials of thatch, wood, slate, and shale processed into terra-cotta tiles, as well as metal roofing products. We will learn how to effectively deal with flashings in a variety of situations.

BLCT 2044 - Construction Essentials III, 4 Credits

Level: Lower

This course is an introduction to drywall, plaster, steel buildings, and transits. An introduction to commercial construction is also included with a focus on apprenticeship training, energy insulated foam systems, and pre-fab concrete systems.

BLCT 2052 - Measu & Docum a Timberframe, 2 Credits

Level: Lower

In this course we will examine accepted methods used in the assessment, measuring, and documentation of a historic timber frame. We will study the systems historically used to layout timbers for fabrication, measurement systems used by the builders, and standardization of the surfaces used for reference.

BLCT 2053 - Introduction to Earth Moving, 3 Credits

Level: Lower

Provides a broad introduction to the processes of planning and executing earth moving activities on various types of construction projects. Explains the uses of heavy equipment such as bulldozers, scrapers, excavators, and loaders.

BLCT 2054 - Construction Essentials IV, 4 Credits

Level: Lower

This course provides the student with a basic knowledge of residential siding. Course content includes applicable terminology, comparisons of different siding types and installation instruction for several types of siding. A unit on cornice design and installation and a unit on windows are included, covering design criteria as specified by building and energy codes as well as installation.

BLCT 2062 - Mech of Decay & Deter in Wood, 2 Credits

Level: Lower

This course will examine many of the factors causing deterioration and decay in wood. We will explore means of prevention of this damage, costs, and hazards associated with deterioration and decay.

BLCT 2064 - Structural Components, 4 Credits

Prerequisite(s): BLCT 1023 with D or better

Level: Lower

This course explores a variety of structural components and building practices in frame construction. Major topics include manufactured building materials, span and load bearing requirements, floor systems, roof systems, fastening techniques, and estimating, as well as common frame construction techniques. The lab exercises allow the student to practice the layout, assembly, and construction of a variety of structural components with concentration on common rafters and manufactured joists, trusses, and beams.

BLCT 2074 - Historic Roofing Materials, 4 Credits

Level: Lower

This course will provide an overview of materials commonly used in historic roofing

construction and how they differ from the materials commonly used today. We will look at the natural materials of thatch, wood, slate, and shale processed into terra-cotta tiles, as well as metal roofing. We will learn how to effectively deal with flashings in a variety of situations.

BLCT 2084 - Mech of Decay & Deter of Wood, 4 Credits

Level: Lower

This course will examine many of the factors causing deterioration and decay in wood. We will also explore means of prevention of this damage, and the costs of and hazards associated with some of these means.

BLCT 2092 - Soils Part II, 2 Credits

Prerequisite(s): BLCT 1052 with D or better

Level: Lower

This course describes basic soil classification methods, details factors affecting classification, and presents soil density and compaction requirements. It also includes the requirements for handling and combining different types of materials.

BLCT 2093 - Window & Door Restoration, 3 Credits

Level: Lower

This course discusses the materials and techniques historically used in the construction of residential windows and doors, and methods commonly used in their restoration. We will cover maintenance issues, glazing options, hardware, wood sash restoration, sill replacement, painting, weather stripping, interior/exterior storm windows, and energy efficiency, as well as appropriate replacement of missing/damaged parts. Appropriate wood species and wood quality issues will be covered.

BLCT 2119 - Forced Air Heating, 9 Credits

Level: Lower

Introduction to heating and air conditioning and factors which affect comfort requirements, forced air heating equipment and its various applications, installation of duct systems in residential structures, heat sources, combustion, and gas and oil burner systems.

BLCT 2129 - Sheet Metal, 9 Credits

Level: Lower

Provides students with entry level knowledge and skills in sheet metal industry, sheet metal machines and tools, developing basic sheet metal skills, sheet pattern layout including edges, seams, assembly and installation, development of patterns for ducts, transitions, and components used in the heating industry.

BLCT 2132 - Estimating II, 2 Credits

Level: Lower

The Estimating II course is a continuation of Estimating I. This course develops mathematical concepts and application skills necessary for the carpenter and mason to estimate building quantities and associated costs. Topics include formulas for area, lineal footage, board foot quantities, and basic geometry as it pertains to construction. The student will be required to figure material takeoffs for sidings, roof materials, and cornice. These are the exterior finish materials for building a house. Upon completion of this course the student will be able to estimate a structure to the point of trimming it out.

BLCT 2142 - Masonry II, 2 Credits

Prerequisite(s): BLCT 1132 with D or better

Level: Lower

This course covers the various types of mortar mixes and their appropriate uses, reinforces and builds on trade aspects and skills introduced in BLCT 1142. The evolution of the masonry trade, tools, and materials used will be studied. We will develop the skills needed by those restoring or maintaining historic masonry structures. Bricklaying and stone veneers will be introduced. The basics of plasterwork will be covered.

BLCT 3002 - Blueprint Reading Part III, 2 Credits

Level: Lower

This course covers the equipment and supplies required to perform structural work. Discussions include the following topics: bridge types and materials, bridge substructures, bridge superstructures, structural concrete and structural steel. Reading and interpreting site

plans will also be reinforced.

BLCT 3003 - Advanced Equipment Safety, 3 Credits

Level: Lower

This course teaches advanced safety techniques and requirements for heavy equipment operators and emphasizes organizing and conducting safety meetings. Discussions include OSHA hazardous material requirements and safe operation of equipment. Course topics also include safety reporting, inspections and investigations.

BLCT 3005 - Operations Part III, 5 Credits

Prerequisite(s): BLCT 1016 with D or better and BLCT 2036 with D or better

Level: Lower

This course presents the use, safe operation, and maintenance of excavators, trucks, and trailers. Students will explain and demonstrate the use of excavators in ditching, grading, and slope-finishing operations, describing various operating techniques. The course describes the types of trucks used in highway/heavy construction including rigid frame trucks, such as dump trucks, transit-mix trucks, and tractor trailer trucks. The trailers discussed include bulk haulers and flatbed trailers. Truck controls and components, preventive maintenance and operation, and required licensing are also covered. This course will continue to reinforce correct operation of backhoes, bulldozers, and front end loaders.

BLCT 3012 - Soils - Part III, 2 Credits

Level: Lower

This course addresses problems associated with bridged areas and breakthroughs, as well as soil stabilization. It presents the proper use of geo-textile materials. Students will reviews soil compaction requirements, specific procedures for running moisture-density tests and methods of fixing compaction problems.

BLCT 3013 - Paving Part I, 3 Credits

Level: Lower

This course includes the processing and preparation of asphalt and concrete, including quarrying, crushing, screening, and testing. The operation of concrete plants, hot mix asphalt plants, and pug mills is also explained. Students will be prepared for MSHA (Mine Safety Health Administration) certification.

BLCT 3023 - Supervision Part I, 3 Credits

Level: Lower

In this course students will learn the principles of project planning, scheduling, estimating, and management, and the basic skills required for supervising personnel.

BLCT 3033 - Cabinet & Counter Top Const, 3 Credits

Prerequisite(s): BLCT 1022 with D or better and BLCT 2032 with D or better

Level: Lower

This course covers the principles of cabinet construction and countertop fabrication. The students will build cabinets and work on fabricating laminate countertops in the laboratory.

BLCT 3119 - Hot Water & Steam Heating, 9 Credits

Level: Lower

Examination of all components and functions in residential hot water and steam heating systems including configurations encountered in common applications, hot water boiler ratings, piping layouts, pump performance, zoning, venting and ventilation principles, sizing, installation and troubleshooting, and energy conservation and equipment.

BLCT 3123 - Construction Drawings & Spec, 3 Credits

Prerequisite(s): BLCT 2054 with D or better

Level: Lower

The four major plan groups are architectural, structural, mechanical, and civil. The students will be able to identify major types of plans. Emphasis is placed on residential plan reading and development.

BLCT 3129 - Electricity & Controls, 9 Credits

Level: Lower

Principles of electricity, power sources, loads, switches, basic house wiring circuits, electrical test equipment, control wiring for forced air and hydronic heating system, fuels, and accessories including zoning.

BLCT 3159 - Masonry III, 9 Credits
Level: Lower
This course covers job supervision, foundations, material estimates, fireplace design and construction, stone masonry skills in these areas and to provide repetition to increase production and accuracy.

BLCT 3169 - Masonry IV, 9 Credits
Level: Lower
This course provides instruction in mortar types for specific applications, masonry repair and restoration, ornamental masonry and bonding patterns. Cold weather construction techniques relevant to concrete and masonry construction is studied. A unit on engineered brick masonry and prefabrication is included. Lab activities are provided to develop hands-on skills.

BLCT 3203 - Estimating III, 3 Credits
Level: Lower
This course involves material cost and quantity estimation, plus work units and labor costs for residential and light commercial construction. CSI Division specifications are applied in an estimate and bid project as part of course requirements.

BLCT 3212 - Intro to Resid Jobsite Mgmt II, 2 Credits
Prerequisite(s): BLCT 3203 with D or better
Level: Lower
Course instruction provides basic management knowledge and skills for a residential jobsite lead carpenter or supervisor. A systematic approach to obtain and manage small projects successfully.

BLCT 3213 - Exterior Construction Details, 3 Credits
Prerequisite(s): BLCT 1023 with D or better
Level: Lower
This course covers the methods used in the construction and installation of residential exterior elements. The course content includes the construction of porches, decks and breezeways. Students will learn about flooring and decking materials, different types of entrance doors and their installation, garage doors, footings and fasteners, railing systems and structural supports, and building code requirements.

BLCT 3223 - Home Remodeling, 3 Credits
Prerequisite(s): BLCT 2032 with D or better
Level: Lower
This course covers the evaluation of overall conditions found in older buildings. Students will learn about the construction techniques used in remodeling and how they differ from new construction. This will include the process of identifying and handling hazardous materials, historical framing styles, and different styles of interior and exterior trim.

BLCT 3233 - Advanced Framing, 3 Credits
Prerequisite(s): BLCT 1023 with D or better
Level: Lower
This course will teach roof design, including the cutting and fitting of hip and valley rafters. The course will also cover truss design and installation of trusses.

BLCT 3313 - Basic CAD for Resid Drawings, 3 Credits
Prerequisite(s): BLCT 2054 with D or better
Level: Lower
Course instruction provides basic computer aided drafting (CAD) techniques. Eight initial projects incorporate the application of appropriate commands, including drawing file management and software settings. CAD basics introduced in lecture are then applied in a laboratory setting with emphasis on developing CAD preliminary residential prints.

BLCT 3323 - Interior Trim, 3 Credits
Prerequisite(s): BLCT 1024 with D or better
Level: Lower
This course covers hanging and trimming doors; trimming windows; and installing interior

moldings in a laboratory setting.

BLCT 3413 - Bluprint Readng-Bldg Construct, 3 Credits

Prerequisite(s):
Corequisite(s): BLCT 3453
Level: Lower
This course covers instruction in blueprint reading, concentrating on plumbing blueprints, building blueprints, and instruction in the use of the architect's scale for taking measurements. The course covers all components of a wood frame structure including foundations. Students will be taught the proper installation of piping and fixtures so as not to jeopardize the building's structural integrity.

BLCT 3423 - Pipe Fitting - Math Estimating, 3 Credits

Prerequisite(s):
Corequisite(s): BLCT 3453
Level: Lower
This course covers basic math and materials estimating the plumbing trades. Pipe fitting math is practiced and applied to ensure proper plumbing drainage, as well as water and gas line pipe length installations. Material lists and job estimating is also taught as it pertains to various plumbing systems and fixtures. The students are given instruction on materials mark up for profit, proper customer billing, and required income and sales tax as it pertains to a self-run plumbing business.

BLCT 3433 - Cop Pipe & Tub, Water Sys Des, 3 Credits

Prerequisite(s):
Corequisite(s): BLCT 3453
Level: Lower
This course covers the study and installation of various types of copper pipe & tubing and proper methods of joining. Also includes instruction on fitting use and proper code applications. The methods of testing potable water lines are also covered.

BLCT 3443 - Drainage Systems & Piping, 3 Credits

Prerequisite(s):
Corequisite(s): BLCT 3453
Level: Lower
This course covers the instruction in the design, joining, installation, and proper application of various types of drainage piping used in drainage and venting systems. Also covered will be instruction and study of public and private sewage systems, their make-up, various aspects of troubleshooting and maintenance.

BLCT 3453 - Plumb Trade History & Safety, 3 Credits

Level: Lower
This course covers the study of safety practices and OSHA training related to the plumbing trades. All students obtain a 10-hour OSHA training card upon successful completion of the course. The history of plumbing and how plumbing systems and codes originated is covered. This course also covers the instruction in the proper care, use, and application of various hand and power tools used in the plumbing trade.

BLCT 3463 - Watr Heatrs-Plumb Fix Inst/Rpr, 3 Credits

Prerequisite(s):
Corequisite(s): BLCT 3453
Level: Lower
This course covers the instruction and study of selection and installation of water heaters for industry standards. Instruction is also given on gas and electric water heater troubleshooting and repairs. This course also covers the instruction of plumbing fixture specifications and installation. Fixture troubleshooting and repair is also covered in this course.

BLCT 3473 - Heating Fuels-Comb Theo&Troubl, 3 Credits

Prerequisite(s): BLCT 3453 with D or better
Level: Lower
This course is an introduction to the various fuels used in the heating trades and the methods of converting fuels for various applications. The theory of combustion and combustion troubleshooting is also covered in the course. Common forced air furnace parts and components are discussed and various manufactured retrofit products are applied. This

course also includes basic wiring of conventional forced air furnaces and principles and troubleshooting of furnace electronic ignition.

BLCT 3483 - Electrical Fundamentals, 3 Credits

Prerequisite(s): BLCT 3453 with D or better *
Level: Lower
The objective of this course is to develop a knowledge of electricity and the units used to describe and measure it. The course will also show how different types of electrical circuits function and what different electrical components do in those circuits. Special emphasis is placed on temperature controls and switching. Elementary wiring diagrams are introduced.

BLCT 3493 - Forced Air Furnace Controls, 3 Credits

Prerequisite(s): BLCT 3453 with D or better
Level: Lower
The objective of this course is to develop skills in the installation and service of electrical components of gas and oil forced air furnaces. This includes gas standing pilot and electronic ignition systems. It applies to both 80% and 90% efficient furnaces including those with integrated circuit boards.

BLCT 3503 - Hydro Comp, Circu Pump&Ht Emit, 3 Credits

Prerequisite(s): BLCT 3453 with D or better
Level: Lower
The purpose of the course is to develop an understanding of piping materials, fittings and various components used in hydronic heating systems. This includes knowledge about types and performance of circulating pumps. Also included are heat emitters which have been used in the past and several new types which are currently gaining popularity.

BLCT 3513 - Hydronic Controls and Motors, 3 Credits

Prerequisite(s): BLCT 3453 with D or better
Level: Lower
This course covers electrical components as they apply to hydronic heating. Students will produce wiring diagrams for external boiler wiring as it applies to zone valves and pumps. Investigation into areas of multiple boiler controls, injection mixing controls and outdoor reset controls are pursued. The theory and application of different motors used in the HVAC industry are also presented.

BLCT 3523 - Hydronic Funda & Heat Sources, 3 Credits

Prerequisite(s): BLCT 3453 with D or better
Level: Lower
This course will introduce students to basic thermodynamic principles. The course will explore the advantages of hot water and steam heating, as well as the various types of boilers used in the industry.

BLCT 3533 - Hydronic Piping Systems, 3 Credits

Prerequisite(s): BLCT 3453 with D or better
Level: Lower
The objective of this course is to develop an understanding of various piping systems used in hydronic heating systems including series loop, one pipe two pipe (direct and reverse return) and primary/secondary piping. The course will also cover the applications and installations available for a variety of radiant heating types.

BLCT 4002 - Below Grade Const (Hvy Highway), 2 Credits

Level: Lower
This course discusses the below grade construction processes that are necessary to perform highway/heavy construction. Excavation support systems, excavation safety, underground piping materials and fittings, joining methods for underground pipe, box culverts, and catch basins are covered.

BLCT 4003 - Paving Part II, 3 Credits

Level: Lower
This course explains how to perform hot mix asphalt paving and concrete paving. The course covers the operation of asphalt pavers and all equipment required to perform paving. Discussions will include concrete paving equipment such as concrete pavers, slip-form

pavers, and texture/curing machines.

BLCT 4004 - Operations Part IV, 4 Credits

Level: Lower

This course presents information on the operation and maintenance of telescoping excavators. Students learn basic operation of equipment and apply this knowledge in performing earth work activities such as ditching, placing rip rap, and slope finishing. Included are safety issues and preventive maintenance activities.

BLCT 4012 - Earth Moving (Hvy Highway), 2 Credits

Level: Lower

This course describes the necessary procedures for preparing ground for highway/heavy construction. It explains soil basics, including terminology, identification, and classification. Earthmoving operations, such as laying out slopes and grades, site excavation, and hauling, are addressed along with methods of stabilizing soils.

BLCT 4013 - Supervision Part II, 3 Credits

Level: Lower

This course will build on Supervision - Part I. The student will learn about prevailing wage schedules used by DOL, professional ethics, customer focus, ability to listen, teamwork, communication, attitude, responsibility, and patience. Topics include project management, estimation, record keeping, planning, bidding and contract writing.

BLCT 4022 - Finish Operations, 2 Credits

Level: Lower

This course contains information about the responsibilities of the finish operator. Discusses leadership abilities in relation to organizing and directing workers and operations, and how to understand and interpret production requirements and specifications. Also explains how to set up and adjust leveling instruments.

BLCT 4023 - Form Building, 3 Credits

Level: Lower

This course provides the basics of building footer forms and installing concrete wall forms. It will also introduce students to SMAW (Shielded Metal Arc Welding) electric arc welding and cutting steel with an oxy-acetylene torch.

BLCT 4032 - Finishing & Grading, 2 Credits

Level: Lower

This course provides instruction in the use of various types of heavy equipment to finish and trim grades and slopes of roads, pads, ditches, and other structures. Specifications used for grading will be discussed as well as procedures for checking the final grade.

BLCT 4033 - Historic Framing Techniques, 3 Credits

Level: Lower

This course will look at the evolution of systems used in the construction of wooden house frames throughout the history of building in America. We will begin with an in-depth look at the centuries-old techniques employed in timber framing, and then follow the progression through braced-frame and balloon frame buildings. Students will apply these techniques to new and/or existing structures.

BLCT 4042 - Construct Business Operation, 2 Credits

Prerequisite(s):

Level: Lower

This course is an overview of the basic requirements of ownership and operation of a small construction business. The course also covers the building code sections that establish minimum standards for public safety and protect consumers from hazardous design and construction.

BLCT 4043 - Masonry Sketching & Detailing, 3 Credits

Prerequisite(s): BLCT 3169 with D or better

Level: Lower

This course will give students the knowledge and ability to use an architect's scale and basic drafting skills to produce shop drawing sketches of masonry wall systems, masonry details, shapes for architectural building stone and architectural pre-cast.

BLCT 4053 - Blueprint Reading for Masonry, 3 Credits
Prerequisite(s): BLCT 3169 with D or better
Level: Lower
Students will develop a working knowledge of blueprints and specifications for masonry projects. Topics will include masonry cost and material estimating, jobsite preparation and construction. Students will interpret and apply standards commonly used in masonry construction.

BLCT 4104 - Comparison of Framing Tech, 4 Credits
Level: Lower
This course will look at the evolution of systems used in the construction of wooden house frames throughout the history of building in America. We will begin with an in-depth look at the centuries-old techniques employed in timber framing, then follow the progression through braced-frame and balloon frame buildings.

BLCT 4133 - Mechanicals, 3 Credits
Level: Lower
This course is an overview of basic remodeling, plumbing, heating and electrical installation to develop jobsite coordination and cooperation among various trades working at a site. This includes hands on experience with electric, heating, and plumbing.

BLCT 4143 - Basic House Wiring-Forced Air, 3 Credits
Prerequisite(s): BLCT 3453 with D or better
Level: Lower
This course offers instruction and application of basic house wiring and theory. The student is also introduced to the heating trade and to the theory of proper furnace installation. Reasons for human comfort and discomfort as it pertains to forced air heat are discussed. Troubleshooting of disturbing and distressing noises and conditions as well as indoor air quality is also covered in this course.

BLCT 4153 - Sheet Metal Fabrication, 3 Credits
Prerequisite(s): BLCT 3453 with D or better
Level: Lower
This course covers the instruction and the application of various materials of the sheet metal trade. Students are also instructed in the forming and use of different seams and edges required for various applications. Instruction and proper application of methods of joining sheet metal such as riveting, welding, brazing, and soldering is also covered.

BLCT 4163 - Mid & Hi Effy Furn-Alt Warm Ar, 3 Credits
Prerequisite(s): BLCT 3453 with D or better
Level: Lower
This course covers the proper evaluation and installation of mid and high efficiency furnaces. Fuel oil burner breakdown, maintenance, and installations are covered in this course. Instruction is given on the proper sizing and installation of natural gas and propane gas distribution pipelines. Alternate warm air heat sources, types, and installations are also taught. Proper trade practices of the HVAC technician, heat system analysis, and maintenance are also covered in this course.

BLCT 4173 - Sheet Mtl Air Dist Systm &Vent, 3 Credits
Prerequisite(s): BLCT 3453 with D or better
Level: Lower
This course covers the many types of furnace ductwork and proper application of various duct fittings. Proper application and installation of furnace air distribution systems is also covered. Instruction on Type B galvanized sheet metal vent pipe and components is given and the proper sizing and installation of this metal piping is covered. Sheet metal math such as perimeter, area, and volume is also included in this course.

BLCT 4176 - Masonry V, 6 Credits
Level: Lower
To give the student a working knowledge of the concrete industry by showing form construction as well as various types of concrete and their uses. Stair building, brick and concrete are also included within this course. This is a five (5) week course.

BLCT 4183 - Sheet Metal Trade Safety, 3 Credits
Prerequisite(s): BLCT 3453 with D or better
Level: Lower
This course covers instruction in the proper use and application of various hand and power tools used in the sheet metal trade. Sheet metal trade and tool safety is also covered in this unit. Students will be introduced to different sheet metal types and their proper applications as well as mechanical drawing. Students will develop and lay out patterns for sheet metal to be cut and formed.

BLCT 4186 - Masonry VI, 6 Credits
Level: Lower
This course serves as an overview of contracting, applying for jobs, small business and structural details on commercial and heavy construction. This is a five- week course.

BLCT 4203 - Air Cond Components & Install, 3 Credits
Prerequisite(s):
Level: Lower
Students will learn about air conditioning components and accessories. Students will learn how to install air conditioning including pressure testing, evacuation, and charging.

BLCT 4212 - Construction Safety, 2 Credits
Prerequisite(s): BLCT 1034 with D or better
Level: Lower
Construction Safety is a comprehensive study of the requirements of an effective safety and health program that focuses on worker safety, improved productivity and accident risk management. This is done using an OSHA Outreach safety training format designed to provide students with a basic understanding and application of the OSHA standards relative to their field of study.

BLCT 4213 - Air Conditioning Fundamentals, 3 Credits
Prerequisite(s):
Level: Lower
This course teaches the fundamentals of air conditioning and how the components of the system work together to perform the cooling process. This includes an examination of types of systems, and detailed look at the types and performance of evaporators and compressors.

BLCT 4223 - Air Cond Perf & Trou & Ht Pump, 3 Credits
Prerequisite(s):
Level: Lower
This course teaches electrical and mechanical troubleshooting capabilities that are usable in real life applications. Students will also study heat pumps and a variety of applications in which they are feasible.

BLCT 4233 - Heat Loss & Heat Gain, 3 Credits
Prerequisite(s): BLCT 3523 with D or better
Level: Lower
Students will determine the heat loss and heat gain in a residential or small commercial building, which would allow a technician to determine what size equipment and to select and size heating and cooling ductwork and diffusers.

BLCT 4243 - Refrigeration Handling Cert, 3 Credits
Prerequisite(s):
Level: Lower
This course prepares students to take the EPA Refrigerant Handling Certification test.

BLCT 4253 - Residential Duct System Design, 3 Credits
Prerequisite(s): BLCT 4233 with D or better
Level: Lower
Students will learn the fundamentals of duct system design as it applies to residential forced air heating and cooling systems. This includes an in-depth look at blower performance and equipment which affects airflow in ductwork.

BLCT 4303 - Interior Surfaces, 3 Credits
Prerequisite(s): BLCT 3323 with D or better

Level: Lower
This course covers the installation of finished ceiling, floor, and wall materials as well as the principles of stair building. The student will install floor and wall materials as well as calculate, cut and assemble stair parts in the laboratory.

BLCT 4312 - Intro to Resid Jobsite Manage, 2 Credits
Level: Lower
Course instruction provides basic management skills for a residential jobsite lead carpenter or supervisor. This course includes information on hiring workers, managing sub-contractors, material deliveries, scheduling, contracts, and documentation.

BLCT 4900 - Directed Study, 1 to 6 Credits
Level: Lower
Directed Study is a course structured to allow students to study construction related subjects in addition to the required curriculum. This allows for selected projects for senior students. This program will include research and written reports in a student's major field under the supervision of faculty. This is either a three or five credit course.

ACHELOR OF SCI ENGR TECH

BSET 1003 - Intro to Engineering Tech, 3 Credits
Level: Lower
This course prepares students who are new to the engineering technology field for success at the college level. Topics covered include engineering technology as a career, engineering library usage, problem solving techniques, measurement systems, right triangle geometry, dimensional analysis, significant figures, unit conversion, and data collection and analysis. Career options and opportunities will be presented using guest speakers from industry.

BSET 3004 - Electromechanical Controls, 4 Credits
Prerequisite(s): BSET 1003 with D or better
Level: Lower
BSET 3004 solves machine and process control applications using relay, solid-state and fluid logic control. Safety rules will be taught and adhered to. The principles of dc and ac rotating machines are studied and applied in the laboratory. Real and reactive power are analyzed in ac systems. Programmable Logic Controllers are used to solve a wide variety of simulated systems in design projects and to provide control system trouble-shooting experience.

BSET 5393 - Engineering Technology Appl, 3 Credits
Prerequisite(s): MATH 1063 with D or better * or MATH 2094 with D or better * or MATH 2074 with D or better * or MATH 1084 with D or better *
Level: Upper
The engineering technology student will be presented with engineering-oriented problems to solve using programming concepts. The students will learn the logical sequence of steps to obtain their solutions to the various technical problems. The problems will be applied to static dynamics, numerical methods, thermodynamics, and fluid applications.

BSET 5900 - Directed Study, 1 to 4 Credits
Level: Upper
A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chair. The instructor and student will confer regularly regarding the process of the study.

BSET 7001 - Senior Seminar & Project Des, 1 Credit
Corequisite(s):
Level: Upper
First of two-semester sequence Bachelor of Science seniors. Students design technical project for completion in BSET 8003. Project proposal and design oral reports are presented. Weekly seminar deals with various aspects of post graduation professional employment.

BSET 8003 - Senior Technical Project, 3 Credits
Level: Upper

Students build and test a technical project designed in BSET 7001. Each student must do library research, a formal oral presentation, project demonstration and submit a written project report.

BSET 8006 - Senior Internship, 6 Credits

Level: Upper

Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of educational experiences under direct supervision of an owner, manager or supervisor of technology in an organization. Each intern will be supervised by a member of the faculty. Written and oral reports and a journal of work experience activities will be required. Evaluation will be based on the quality of experiences gained from the internship. Students will be required to complete a series of 2 brief investigative or evaluative papers while completing the internship in areas such as career development, organizational structures, organized labor, business management, security, policies, and/or industry and market trends. At the end of the internship students will be required to give an oral presentation to the faculty about their internship experience.

BUSINESS ADMINISTRATION

BUAD 1043 - Occupational Experience, 3 Credits

Level: Lower

This is a semester-long experience where a business student can gain hands-on work experience in a sponsor company. Students benefit from this employer-employee relationship as an extension of classroom theory/applications and learn to work within corporate rules/regulations as expected of a newly hired worker. Satisfactory completion of this training, as well as related assignments, is required.

BUAD 1103 - Keyboarding, 3 Credits

Level: Lower

Three lectures per week. When this course serves as the prerequisite for another course, the student must receive a grade of C or better. Learning to locate and operate the keys by touch; improving techniques and keyboarding speed and accuracy; and application activities to help to improve related language arts skills.

BUAD 1543 - Grammar, 3 Credits

Prerequisite(s):

Level: Lower

In this course students will develop a high-level ability in spelling, vocabulary, sentence structure, word choice, capitalization, and punctuation with direct application to business writing and speaking. This course encourages application of this knowledge through editing activities. Attention is given to diagnosing fragments, run-ons, comma splices and parallelism errors. Emphasis is placed upon mastery of grammatical structure needed for effective writing of sentences, paragraphs, and essays. When this course serves as the prerequisite for another course, the student must receive a grade of "C" or better in this course.

BUAD 2033 - Business Communications, 3 Credits

Prerequisite(s): COMP 1503 with D or better

Level: Lower

Course Attributes: Gen Ed - Basic Comm (Business)

Students will develop skills in communication within business activities. In addition to learning fundamentals of communication theory and principles, special attention is given to preparation of letters, researching techniques, written and oral reports. Emphasis is also given to preparing students for the job search process including preparation of application letters, resumes, interviews, and the follow-up activity.

BUAD 2203 - Intro to Comp Appl & Speed Dev, 3 Credits

Prerequisite(s): BUAD 1103 with C or better

Level: Lower

BUAD 1103 Pre-requisite preferred. An introduction to Windows XP and the Internet with coverage of Microsoft Word. Instruction and immediate practice in using software to solve contemporary computer applications such as letters, reports, and tables. Presentation of introductory concepts of micro-computer applications using current Word programs. This course affords the student the opportunity to learn word processing for employment,

personal, and home use utilizing a microcomputer. An individualized diagnostic and prescriptive method of developing accuracy and speed at the keyboard. Students must demonstrate the ability to key at a minimum keyboarding speed of 40 words per minute.

BUAD 3043 - Business Law I, 3 Credits

Level: Lower

This course offers a general inquiry into the nature of law and the legal system in the United States. Areas covered include, but are not limited to, the different schools of jurisprudential thought, the Common Law tradition, Alternative Dispute Resolution, court procedures, legal research and case citations. Special attention is given to Constitutional Law and business, Torts and Crimes, Intellectual Property and the Common Law of Contracts.

BUAD 3153 - Fundamentals of Management, 3 Credits

Level: Lower

The course will develop an understanding of management theories and management skills through an examination of the basic functions of management. The concepts of planning, organizing, leading, and controlling are enhanced to show how these basic principles can be used to create a healthy and thriving organization in today's global environment. Special attention will be given to decision making, problem solving, and leadership in an environment where productivity improvements is a major concern.

BUAD 4004 - Ess of Entrepr & Sm Bus Mgmt, 4 Credits

Level: Lower

This course offers the student a step-by-step approach to starting a business. The course covers the fundamental principles of marketing, law, management, and office administration as applied to beginning a new venture. The class will be divided into teams that will prepare a comprehensive individualized business plan to include a market profile, site analysis, competitive analysis, financials, goals and objectives, pricing and marketing strategies, and executive summary. A major focus of this course is to explore each step necessary in structuring and launching a new venture, and discussing ways of recruiting the necessary resources to accomplish this venture.

BUAD 4053 - Business Law II, 3 Credits

Level: Lower

An examination of the law of sales, commercial paper, agency-employment relationships, business organizations and government regulation of same. Article 2 of the UCC is used in the sales area with special attention paid to contract formation, title and risk of loss, performance and product liability. In examining commercial paper, Article 3 of the UCC is referenced with emphasis on function and form, holders in due course and liability and discharge. Attention is also given to employer/employee relationships, and distinguishing between sole proprietorships, partnerships, limited liability companies and corporations. Finally, government regulation of business is examined, especially in the areas of anti-trust and restraint of trade.

BUAD 4133 - Investments, 3 Credits

Level: Lower

This course is designed to be an introductory course in investments. Topics covered are sources of information, establishing investment goals, investment returns and risks, time value of money, investing in common stocks, bonds, and mutual funds, tax aspects of investing, analysis of financial statements, portfolio management techniques, and introduction to futures and options.

BUAD 4193 - Insurance and Risk Management, 3 Credits

Level: Lower

This course covers one of the six components of financial planning. This course will describe the techniques a financial planning/risk manager will use to analyze risk and assess alternate strategies. The course begins by examining the pervasive nature of risk and its impact on both the individual and society. It also demonstrates the ways in which insurance can be used to deal with the problems posed by such risk. Insurance is an integral part of the personal financial planning process; therefore the course is designed to be consumer oriented. The course can also be useful in preparation for a career in the fields of life, health and disability, and property and casualty insurance.

BUAD 4203 - Intro Personal Financial Plan, 3 Credits

Level: Lower

This course is an introduction to personal finance covering those areas which are necessary for an individual to make better financial decisions throughout one's lifetime. Topics include: developing financial statements, plans, budgets, time value of money, money management, credit management, tax planning, insurance, investments, retirement planning, and estate planning. Computer, business calculator applications, and case studies will be used throughout the course.

BUAD 4403 - Business Computer Applications, 3 Credits

Prerequisite(s):

Level: Lower

Review of business applications used in general office environments. Continuation of advanced theories and applications in microcomputer applications are stressed using the current computer software packages. Students must demonstrate the ability to keyboard at a minimum keyboarding speed of 30 gross words per minute. (Prerequisite BUAD 1103 is minimum 30 wpm).

BUAD 4503 - Intro to Desktop Publishing, 3 Credits

Prerequisite(s):

Level: Lower

Three lectures per week. Prerequisite: BUAD 1103 (Keyboarding) or CISY 1003 (Intro to Microcomputer Apps). The preparation of business documents using Word 2007 processing software. The course includes study of basic page layout and design structure and computer graphics to produce professional looking business documents, such as letters, resumes, memoranda, and reports, as well as the creative production of flyers, advertisements, and newsletters.

BUAD 4900 - Directed Study, 1 to 6 Credits

Level: Lower

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

BUAD 5003 - Management Communications, 3 Credits

Prerequisite(s): COMP 1503 with D or better or BUAD 2033 with D or better and BUAD 3153 with D or better or TMGT 7153 with D or better

Level: Upper

This course is designed to provide the student with the range of communication issues a manager will face in the future. Enduring issues on how to write and speak effectively and devise a successful communications strategy as well as how to make the best use of telecommunications technology will be explored. Through lecture and application, the student will study such areas as handling feedback, managing meetings, communicating change, communicating with diverse populations and external audiences. Special emphasis will focus on how to use communications to achieve organizational missions, how to adapt their communications to the specific needs of their audiences, and how to prepare for intercultural communications challenges.

BUAD 5013 - Principles of Leadership, 3 Credits

Prerequisite(s): BUAD 3153 with C or better or TMGT 7153 with C or better

Level: Upper

An examination of the theory, practice, and principles of leadership within the realm of management. Major topics include the evolution of leadership theory, an examination of the major leadership theories operating in modern organizations, and the impact of each on organizational effectiveness. The development, refinement, and application of effective leadership principles and skills are also examined. Students will be expected to analyze the spectrum of leadership theories and formulate opinions as to the most effective and efficient forms of leadership.

BUAD 5023 - Human Resource Management, 3 Credits

Prerequisite(s): BUAD 3153 with D or better or TMGT 7153 with D or better

Level: Upper

This course is designed to provide the students with an understanding of human resource management, and how they can improve their use of human resources through management tactics. It will discuss what human resource management contributes to the organization in terms of effectiveness and competitiveness. Discussion and research will take place on some of the challenges and workforce issues being faced in this area. Some of the topics covered include strategic human resource planning, staffing, training and development, compensation, employee and labor relations, and workplace safety.

BUAD 5033 - Retirement Planning, 3 Credits

Prerequisite(s): BUAD 4203 with D or better
Level: Upper
This course provides an overview of the retirement planning process. It will describe the ongoing, systematic procedures a financial planner will utilize to assist a client in establishing meaningful retirement objectives and creating appropriate strategies. Topics will include employer sponsored retirement plans, Social Security, Medicaid, Medicare, post retirement health and quality of life issues, as well as investment, estate, and tax planning strategies.

BUAD 5043 - Business Ethics, 3 Credits

Prerequisite(s): (BUAD 3043 with D or better or BUAD 7023 with D or better) and BUAD 3153 with D or better
Level: Upper
This course explores the complex nature of ethical issues confronted by modern business leaders and managers. It integrates perspectives from a variety of disciplines, including, but not limited to, philosophy, law, management, economics, marketing, and public policy. Course work is designed to illustrate the ethical principles applicable in a business setting while considering policies concerning employees, customers, and the general public, and while building trust, commitment, and effort within the business organization.

BUAD 5053 - Software Applictns in Business, 3 Credits

Prerequisite(s):
Level: Upper
Software Applications in Business prepares students to analyze and solve real-life business problems using spreadsheet, database, word processing, and Web tools. It challenges students to use critical thinking, research, and analysis to find efficient and effective solutions to typical business situations. Students will be assigned case problems in accounting and finance, marketing, manufacturing, and human resources, and they will present the solutions in class.

BUAD 5900 - Directed Study - Upper Level, 1 to 6 Credits

Level: Upper
A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

BUAD 6003 - Managerial Finance, 3 Credits

Prerequisite(s): ACCT 1124 with D or better and ACCT 2224 with D or better
Level: Upper
This course is a comprehensive examination of the theoretical and practical approaches to financial management. Analyzing, planning, controlling investment and short and long term financing are examined for decision-making purposes.Topics include: the financial environment, risk and rates of return, capital budgeting techniques, the cost of capital and capital structure, analysis of financial statements, financial planning and control, and ethics in finance.

BUAD 6113 - Strategic & Creative Prob Solv, 3 Credits

Prerequisite(s): TMGT 7153 with D or better or BUAD 3153 with D or better
Level: Upper
This course is intended to provide the student with a basis for the analysis and application of creative problem techniques for issues that managers typically address in technology-based environments. Emphasis is on fostering creative thinking as a way to approach and solve problems, and analyze our thinking styles. Preparation and presentation of written and oral

reports is required. The course offers an opportunity for students to practice communication of ideas and accomplishments through informal discussion, formal presentation, team decision-making and written case analysis. The applied case study problems explored in this course are based upon real and current industry problems.

BUAD 6213 - Business in the European Union, 3 Credits

Level: Upper

This course is intended to provide the student with a comprehensive introduction to business in the European Union. The course describes how economic, political and social factors interrelate, and influence business in Europe. Students will use a framework to research select bachelor business administration program outcomes (economics, communication, management, and marketing) from different European Union member state's perspective. Guest lecturers and field trips are planned for students enrolled in the study abroad program.

BUAD 7004 - Small Business Planning & Mgmt, 4 Credits

Prerequisite(s): MKTG 2073 with D or better or BUAD 3153 with D or better or TMGT 7153 with D or better

Level: Upper

This course offers the student a step-by-step approach to starting and managing a small business. The course covers the fundamental principles of marketing, law, management, and office administration as applied to beginning a new venture. Each student will prepare a comprehensive individualized business plan to include a market profile, site analysis, competitive analysis, financials, goals and objectives, pricing and marketing strategies, and executive summary. A major focus of this course is to explore each step necessary in structuring and launching a new venture, and discussing ways of recruiting the necessary resources to accomplish this venture.

BUAD 7013 - Business Succession Planning, 3 Credits

Prerequisite(s): BUAD 5003 with D or better

Level: Upper

This course will explore the unique financial planning needs of small to medium size business owners. Special emphasis will be given to their common retirement, business succession, business valuation, and estate planning problems as well as the appropriate strategies and techniques utilized by planners to assist these clients in reaching their objectives.

BUAD 7023 - Legal Environment of Business, 3 Credits

Level: Upper

This course is designed to expose students to the legal environment within which businesses operate. It focuses on business' relationship with government agencies (public law issues) as well as with other businesses, consumers, suppliers, etc., (private law issues). The course specifically addresses the global, political, social, environmental and regulatory legal issues confronting businesses, with a special emphasis on the law of technology. It is intended to better equip the business manager for decision making by exploring the legal issues involved in contracts, torts, business organizations, employment law, the Uniform Commercial Code, intellectual property law and Constitutional Law. A variety of specific problems for business found within the law will be examined and analyzed through case briefs and studies, research projects and advocacy exercises. Students will have an opportunity to explore law related topics of particular interest to themselves with oral presentations to the class.

BUAD 7033 - Operations Management, 3 Credits

Prerequisite(s): BUAD 3153 with D or better or TMGT 7153 with D or better

Level: Upper

Upon completion of this course, the student will understand modern (quantitative and qualitative) concepts in production management and their application to problems relevant to today's workplace, for both industrial and service organizations. This course specifically addresses the impact of operational decisions on the firm and emphasizes cross-functional decision making. The course essentially deals with the process design, delivery systems, quality management, ERP, inventory control, scheduling and management of transformation processes to create and deliver value to customers by identifying opportunities and direction for change. This course will cover the terminology, problems, concepts and tools associated with managing operations. Special topics include, supply chain management, e-operations, service blueprinting, competency-based strategy, Six Sigma, lean systems, and mass customization.

BUAD 7043 - Quantitative Prob Solvng Mthds, 3 Credits

Prerequisite(s): MATH 1123 with D or better or MATH 2124 with D or better or MATH 1014 with D or better or MATH 1033 with D or better
Level: Upper
This course is an introduction to quantitative problem solving methods used in business applications. Topics include General Linear Programming and Sensitivity Analysis; Transportation, Assignment, and Transshipment Problems; Network Flow Algorithms; Project Scheduling: PERT/CPM; Inventory Models; Waiting Line Models; and Markov Processes. Software applications will be utilized whenever possible to aid students in the problem solving process.

BUAD 7273 - Organizational Behavior, 3 Credits

Prerequisite(s): TMGT 7153 with C or better or BUAD 3153 with C or better
Level: Upper
This course is designed to create an understanding of the behavior of people in organizations. The purpose of this course is to improve the effectiveness of human resources, both at the individual's level and organizational level. Students will integrate their learning through active participation in experiential exercises, personal experiences, case analysis, and general behavior experiments and study. The course will also focus on personal growth and development.

BUAD 8003 - Management Info Systems - MIS, 3 Credits

Prerequisite(s): (CISY 1003 with D or better or CISY 1103 with D or better or CISY 1023 with D or better) and (BUAD 3153 with D or better or TMGT 7153 with D or better)
Level: Upper
This course focuses on a management perspective of information systems activity from development through implementation. The goal of this course is to help business students learn how to use and manage information technologies to revitalize business processes, improve business decision making, and gain competitive advantage. This course places major emphasis on up-to-date coverage of the essential role of Internet technologies in providing a platform for business, commerce, and collaboration processes among all business stakeholders in today's networked enterprises and global markets. This course places a major emphasis on the strategic role of information technology in providing business professionals with tools and resources for managing business operations, supporting decision making, and gaining competitive advantage.

BUAD 8013 - International Business, 3 Credits

Prerequisite(s): BUAD 3153 with D or better or TMGT 7153 with D or better
Level: Upper
This course is an application of theoretical approaches to the globalization of business. Major concepts, tools, and processes will be explored through lecture, readings, team activities, and case study applications. Major topics include the examination of how businesses and managers focus and succeed in the global economy including an overview of the economic, political, legal, social, and cultural systems involved. Emphasis is given to the scope and theories of international business, the framework for international transactions, relations with host countries and host cultures, global business strategies, and the contrasting international management and ethical issues managers may face.

BUAD 8023 - Strategic Management, 3 Credits

Prerequisite(s): BUAD 3153 with D or better or TMGT 7153 with D or better
Level: Upper
This course is an application of theoretical approaches to Strategic Management. Major concepts, tools, and processes will be explored through lecture, readings, team activities, and case study applications. Major topics include: creating a competitive advantage; analyzing the external and internal environment of an organization; recognizing an organization's intellectual assets; developing business, corporate, and international level strategies; strategic control and corporate governance; creating organizational designs; creating a learning organization and an ethical organization; and managing innovation and fostering corporate entrepreneurship.

CHEMISTRY

CHEM 1013 - Introductory Chemistry, 3 Credits

Level: Lower
Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science
This non-laboratory course is designed for students who need to understand the basic concepts of chemistry. Students taking this course do not intend to pursue further courses in chemistry. Students will explore mathematical relationships using the factor labeling (conversion factor method), atomic and molecular structures (with emphasis on the special nature of carbon), pH, essential building block molecules, water, ions and ionization, and other topics of interest to those who live in our chemical world. Students cannot receive credit for CHEM 1013 if CHEM 1114 or CHEM 1984 is concurrently or previously taken.

CHEM 1114 - General Chemistry I, 4 Credits

Level: Lower
Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science
The first part of a 2-part survey course that spans topics in General, Organic and Biochemistry. CHEM 1114 and its follow-up course, CHEM 2124, are designed for science majors interested in biological applications. Topics in the first semester are predominantly General Chemical concepts including: measurement and units, atomic structure, periodicity, nomenclature, chemical bonding, chemical reactions, stoichiometry and gas laws. Assume level of math competency of MATH 1003 or equivalent.

CHEM 1984 - Chemical Principles I, 4 Credits

Level: Lower
Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science
This course is intended for physical science and engineering majors. While providing a general overview of modern chemistry, the course emphasizes the development of chemical concepts and problem-solving techniques that are essential in science. General topics include atomic structure of matter, chemical reactions, thermochemistry, electronic structure of the atom and chemical bonding.

CHEM 2124 - General Chemistry II, 4 Credits

Prerequisite(s): CHEM 1114 with D or better or CHEM 1984 with D or better
Corequisite(s):
Level: Lower
Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science
CHEM 2124 is a continuation of CHEM 1114, and is aimed at science majors. It completes the presentation of General Chemistry topics started in CHEM 1114 by surveying the topics of: acid & bases, titrations and nuclear chemistry. After these foundations are laid, the course will then survey two broad chemical domains: 1) Organic Chemistry, where the language and chemistry of selected functional groups (alkanes, alenes, alcohols, aromatics, carbonyls and carboxylic acids) will be covered, along with an exploration of chirality. 2) Biochemistry, including the chemistry and structure of carbohydrates, lipids, proteins, and nucleotides, along with selected topics in the chemistry of genetics (DNA/RNA) and nutrition.

CHEM 2984 - Chemical Principles II, 4 Credits

Prerequisite(s): CHEM 1984 with D or better or CHEM 1114 with D or better
Level: Lower
Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science
This course is a continuation of Chemical Principles I and is intended for physical science and engineering majors. Those basic concepts from the first semester are applied to more complex aspects of chemistry which include the states of matter, solutions, thermodynamics, equilibrium, electrochemistry and nuclear chemistry. In addition, the course is designed to have more out-of-class activities related to these topical areas which are completed by a team of students.

CHEM 3514 - Organic Chemistry I, 4 Credits

Prerequisite(s): CHEM 2124 with D or better or CHEM 2984 with D or better
Level: Lower
Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science
Structure, preparation, properties and reactions of alkanes, alkenes, alkyl halides, alcohols, dienes; reaction mechanisms, free radicals, carbocations; conjugation and resonance;

stereochemistry; infrared interpretation. Common organic laboratory techniques and introduction to extended synthesis will be covered in the laboratory.

CHEM 4524 - Organic Chemistry II, 4 Credits

Prerequisite(s): CHEM 3514 with D or better
Level: Lower
Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science
Structure, preparation, properties and reactions of ethers, epoxides, aromatics, arenes, aldehydes, ketones, carboxylic acid derivatives, phenols; carbanion reactions; electrophilic aromatic substitutions; reactions of alpha, beta-unsaturated compounds. Common organic laboratory preparations will be taken up including substitution, elimination, oxidation, and reduction reactions. Products will be analyzed using both traditional physical methods (polarimetry, boiling point, melting point) as well as infrared spectroscopy, nuclear magnetic resonance and gas chromatography.

CHEM 4700 - Practicum, 1 to 3 Credits

Level: Lower
The Practicum offers chemistry students an in-house cooperative experience in performing analytical tests under the direction of the Alfred Environmental Laboratory which is accredited by the Center for Laboratories and Research of the New York State Department of Health. Environmental water tests include: bacteriology, metals, nutrients, oxygen demand/residue, minerals, physical properties, priority pollutant phenols, chlorinated hydrocarbons, polynuclear aromatics and pesticides. References used for testing procedures include: "Standard Methods of Water and Wastewater", and the "E.P.A. Manual of Methods for the Chemical Analysis of Water and Wastes". Both wet chemical and instrumental methods are used for the analysis of organic and inorganic chemicals.

CHEM 4800 - Selected Topics, 1 to 4 Credits

Level: Lower
A program designed to provide an opportunity for pursuit of topics of chemistry beyond the scope of traditional courses. Investigations may be theoretical or experimental and may be pursued by individuals or groups of students. Instruction may be by independent study or formal lectures and/or laboratory sessions. Course may be repeated for a maximum of four hours credit.

CHEM 4900 - Directed Study, 1 to 4 Credits

Level: Lower
A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chair. The instructor and student will confer regularly regarding the process of the study.

CHEM 5013 - Applied Chemical Principles, 3 Credits

Prerequisite(s): MATH 1033 with C or better or MATH 1054 with D or better or MATH 1063 with D or better or MATH 1084 with D or better
Level: Upper
Course Attributes: Liberal Arts and Science
A one-semester course with lab intended to provide engineering students the background chemical knowledge needed to communicate effectively with colleagues, develop manufacturing methods, and solve industrial problems related to chemistry. Topics include: atomic theory, bonding, stoichiometry, acid-base chemistry, oxidation-reduction, gases, and nuclear chemistry.

CHEM 5414 - Analytical Principles, 4 Credits

Prerequisite(s): CHEM 2124 with C or better or CHEM 2984 with C or better
Level: Upper
This course is an in-depth examination of the chemistry and mathematical underpinnings connected to classical chemical calculations and wet chemical methods that form the foundation of modern quantitative chemistry. Using only a balance, buret and various classical volumetric devices, students will develop skills and understanding of gravimetric, titrimetric, complexometric, argentometric and redox methodologies. The course contains a thorough coverage of the manifold concentration systems and conversions as well as

complete treatment of the details of equilibrium equations connected to precipitation, acid-base reactions, buffers, complexation and redox. Non-ideal corrections, notably Debye-Huckel theory, will also be covered.

CHEM 6614 - Instrumental Analysis, 4 Credits

Prerequisite(s): CHEM 4524 with D or better
Level: Upper
A rigorous and hands-on exposure to the fundamental thinking, hardware, and techniques common to instrumental analysis as performed in a modern chemical laboratory. The following methods are emphasized: visible, ultraviolet, and infrared spectroscopy, atomic absorption methods, nuclear magnetic resonance spectroscopy, mass spectroscopy, and gas and high pressure liquid chromatography. A survey of microscopy, calorimetry, and selected electronic and electrical concepts to instrumentation will also be included.

CHEM 6854 - Physical Chemistry, 4 Credits

Prerequisite(s): CHEM 2984 with C or better and PHYS 1064 with C or better and MATH 6114 with C or better
Level: Upper
This course provides students who plan future studies in forensic science technology, chemical sciences or chemical engineering a firm grounding in the quantum mechanical description of molecules, as well as a critical set of insights into thermochemical reasoning. The quantum mechanical focus will be on key model systems, notably the 1- and 2D particle-in-a box, the rigid rotor, the harmonic oscillator and hydrogen atom. Selected approximation methods applicable to multi-electron atomic systems and applications of infrared and visible spectroscopy will be explored, and students will be given experience in using current quantum calculation software to estimate optimal structures, predict IR spectra and estimate activated complex geometries. It is expected that students taking this course will have already taken a course of ordinary differential equations, but some of the course will also include mathematical excursions developing necessary mathematical tools, notably eigenvalue problems, series solutions of differentials and various matrix algebraic methods. The thermodynamic focus will be on efficiently developing the 4 laws of thermodynamics into useful forms whereby chemical equilibria and phase change of chemical systems can be predicted and described. A strong emphasis will be laid on using the practical chemical results of thermodynamic reasoning (K and Q predictions, Clausius-Clapeyron, Gibbs-Helmholtz and Nernst equation, phase rules and Gibbs-Duhem equations) rather than deriving the abstracted expressions of the several thermodynamic laws.

CHEM 7784 - Biochemistry, 4 Credits

Prerequisite(s): CHEM 4524 with C or better and BIOL 2204 with C or better
Level: Upper
This course is a comprehensive course intended for science majors. Topics covered include the basic structure and reactions of biological compounds (carbohydrates, lipids, proteins, enzymes, and nucleic acids), the digestion and absorption of nutrients, bioenergetic principles, and catabolic and anabolic metabolism of major biochemicals in the human body. The laboratory exercises include classic techniques in isolation, purification and assay of proteins, enzymes (and kinetics), carbohydrates, lipids, and nucleic acids as well as polypeptide and polynucleotide sequencing and synthesis.

COMPUTER IMAG ARCH TECH

CIAT 1023 - Construction Technology 1, 3 Credits

Corequisite(s): COMP 1503 MATH 1033
Level: Lower
This course introduces students to the materials, methods and systems commonly used in residential construction. Students will study the inherent qualities of materials and develop an understanding of their use and integration within a residential structure. Students will study the physical properties of the materials as well as how the materials are manufactured to produce a satisfactory product for the construction process.

CIAT 1184 - Design Fundamentals 1, 4 Credits

Corequisite(s): COMP 1503 MATH 1033

Level: Lower
An introduction to fundamental design, architectural design drawing and applied drawing techniques. Students are introduced in lecture to design and drawing principles, techniques and conventions used to develop and communicate architectural ideas. Lab assignments emphasize the relationship between drawing and three-dimensional form and space, and include exercises in basic design and model-making. Topics include principles of design and architectural theory, observational sketching, depicting light, texture and depth, analytical drawing, orthographic and paraline projection systems, and professional standards for layout, lettering, use of line weights, and dimensioning of architectural drawings.

CIAT 1333 - Surv of Animl & Visual Effects, 3 Credits
Level: Lower
This course will take students through a comprehensive history of animated films beginning with their conception in the early 1900's through the present. Students will learn how the medium reflects social issues, political views as well as human creativity. The various types of animation and how they were created in different countries and cultures will be the major focus. The screenings and discussions will span various genres and styles of animation including anime, experimental, commercial, computer, and independent film as well as gaming.

CIAT 1403 - Computer Animation I, 3 Credits
Level: Lower
This is an introductory digital media course that focuses on the manipulation of both raster and vector-based imagery. Students will learn the basics of Photoshop as well as digital photography and use the software to develop their skills in the visualization of motion and time. The course will have a strong emphasis on principles of lighting, layout and composition.

CIAT 1413 - Found: Form/Space Relationship, 3 Credits
Level: Lower
This is a visual rendering course in the Digital Media and Animation major. Broad experience is emphasized with diverse graphic tools and techniques to develop observation of and analyze visual information. This course is designed to deconstruct preconceived ideas of form/space relationships and replace them with objective understandings.

CIAT 1423 - Intro to Visual Communication, 3 Credits
Level: Lower
This is a course that focuses on creative, technical, and environmental/collaborative issues involved in visual communication. Building on the elements and principles of design/communication the students work through increasingly difficult projects to their final cumulative piece. An investigation of color theory as it applies to traditional and computer generated images is also pursued.

CIAT 1433 - Fabrics and Furniture, 3 Credits
Prerequisite(s): CIAT 1184 with C or better and CIAT 1023 with C or better
Level: Lower
This survey course examines th selection, specification, composition, manufacture, and application of finishes and materials in interior design and presents an overview of furniture construction, types, planning and selection. Labs have outside student preparation beyond scheduled laboratory times.

CIAT 1443 - Color & Lighting and Acoustics, 3 Credits
Prerequisite(s): CIAT 1433 with C or better and CIAT 2394 with C or better
Level: Upper
This course is a fundamental course that investigates the properties and principles of basic color theory and its interrelationship with lighting. The focus is on the psychological and physiological effects of color and lighting as they apply to the form, texture, and finish of interior spaces. It also provides a basic understanding of lighting calculations, types of lamps and their uses. Additionally, there will be a segment on calculations related to acoustical performance.

CIAT 2123 - Environmental Controls 1, 3 Credits
Prerequisite(s): MATH 1033 with C or better or MATH 1054 with D or better or MATH 2043

with D or better or MATH 1063 with D or better or MATH 1084 with D or better
Level: Lower
This course introduces the student to the fundamental principles of mechanical, electrical and plumbing (MEP) systems for residential and commercial buildings. MEP system components, their integration into the building, and energy conservation are discussed and illustrated. Students will design various residential systems and will solve problems related to heat loss, fuel usage, fixture quantity, and supply and drain, waste, and vent piping. Evaluation of a student's achievement will be based on examinations, participation in class discussion, homework assignments, and a home heating project.

CIAT 2133 - Design Studio Basics, 3 Credits
Level: Lower
This course is intended for persons who are considering the pursuit of a degree in one of the CIAET curriculums or who could benefit from additional instruction in one of those fields. The main objective of this course is to prepare students for success in subsequent required studio courses. Design Studio Basics provides a series of lectures that cover a variety of topics including history, theory, building technology, application, drawing and model building techniques. The associated studio component will introduce students to ideas, principals and methods of solving architectural problems. Course assignments and projects will address and develop observation and drawing skills, model making, individual research on specific architects and buildings, conceptual making of space and form, presentation techniques, class discussion and other basic design skills.

CIAT 2201 - Architectural Comp Graph Appl, 1 Credit
Level: Lower
This course is designed to introduce students to two-dimensional and three-dimensional programs used in the architectural and interior design industries today. It intends to walk students through the basics of Revit and establish a foundation for the future learning of computer applied design. Once a basic understanding of the software environment is established, students will produce a series of architectural documents. These drawings will incorporate Revit as a design, drafting and analytical tool.

CIAT 2204 - Interior Design I, 4 Credits
Prerequisite(s): CIAT 2394 with C or better
Level: Lower
This studio course emphasizes the design process and space planning for modest size facilities. The students will apply color rendering techniques to present interior design solutions. Students will select appropriate materials for various spaces in accordance with accepted design standards. Design issues such as furniture planning and layouts, application of color, and building code and ADA (American with Disabilities Act) considerations are included.

CIAT 2223 - History of Interior Design, 3 Credits
Prerequisite(s): FNAT 1303 with C or better and COMP 1503 with D or better
Level: Lower
This course is a survey of major historical design periods in interior design from prehistoric to the present. Emphasis is placed on styles and furniture and their relationship to social and political settings, and technological evolvement.

CIAT 2304 - Interior Design II, 4 Credits
Prerequisite(s): CIAT 2204 with C or better
Level: Lower
This design course focuses on the development of complex interior space planning for large commercial/public facilities. Problem solving for both individual and collaborative projects are accomplished through various research methods and programming of client needs. Students will refine both manual and computer generated drawing and rendering techniques. An integrative approach to the design process will include technical issues, budgetary concerns, and code compliance.

CIAT 2394 - Design Fundamentals 2, 4 Credits
Prerequisite(s): CIAT 1184 with C or better
Level: Lower
Introductory course designed to expose students to fundamental design skills, 3D problem

solving, color theory, perspective drawing and rendering. The course examines specific issues such as format, figure/ground, rhythm, contrast, datum, value, space definition, color theory/rendering, one and two point perspective methods and basic model building.

CIAT 2403 - Computer Animation II, 3 Credits

Prerequisite(s): CIAT 1403 with C or better
Level: Lower
This is a course that provides beginning experiences in 3D polygon modeling. It focuses on creating organic and inorganic objects that visually communicate a given mood, emotion, and/or scenario. Students will analyze objects geometrically and use defined processes and techniques to produce these objects for visualization and communication through modeling, lighting, and texturing using polygonal shapes.

CIAT 3104 - Design Studio 1, 4 Credits

Prerequisite(s): CIAT 2394 with C or better
Level: Lower
This is a course that presents students with a systematic approach to architectural design methods. Methods of graphic thinking are introduced as a means of exploring and evaluating issues related to the design process. Architectural form and style are investigated relative to human factors and environmental context. Verbal and graphic communication skills are also refined in the development of student design presentations.

CIAT 3203 - Interactive Authoring, 3 Credits

Prerequisite(s): CIAT 2403 with C or better
Level: Lower
This is a course that introduces the student to the art of creating cartoon-style animation applicable to industry needs in graphic design, interactive media, the internet, film, and television using Macromedia Flash. The course emphasizes student acquisition production with both cameraless and computer-based techniques.

CIAT 3304 - Construction Technology 2, 4 Credits

Prerequisite(s): CIAT 1023 with D or better
Level: Lower
This course is a study of methods, systems, and materials used in the design and construction of commercial buildings. An emphasis is placed on the integration of materials and systems used for foundations, envelope construction, and roof systems. A general study of the International Building Code is included with respect to public commercial structures. Various two-dimensional and three-dimensional computer applications are used throughout the course.

CIAT 3403 - Computer Animation III, 3 Credits

Prerequisite(s): CIAT 2403 with C or better
Level: Lower
This is a course that introduces the student to 3D computer animation. Autodesk's Maya software is emphasized. The course focuses on the building and rigging of skeletons for organic and inorganic objects as well as animation of biped, quadruped, and object motion, and soft-body and rigid-body object motion to visually communicate specific actions and/or emotions. Traditional animation concepts and 3D computerized animation techniques will be theoretically explored and practically applied.

CIAT 4003 - Professional Practice 1, 3 Credits

Prerequisite(s): CIAT 3304 with D or better
Level: Lower
This introductory course is designed to provide the future practitioner with a comprehensive study of the business and practice of architecture and design. Emphasis will be placed on practical skills and usable information that will enhance the students' ability to function within the modern office environment. The study of construction contract documents and estimating techniques will provide the platform for more in-depth discussion of the design professions and/or related disciplines.

CIAT 4101 - Hist of Italian Architecture, 1 Credit

Level: Lower
This course is a survey of the history of Italian architecture. It is in conjunction with the CIAET trip to Italy. Emphasis is placed on buildings and cities they will see on the trip.

CIAT 4103 - Interactive Design, 3 Credits
Prerequisite(s): CIAT 3203 with D or better
Level: Lower
This course is an intermediate exploration of visual and verbal communication through interactive media/interface design. The students will explore the fundamental concepts of interactivity, the basic concepts of flow charting, as well as hierarchal organization and visual perception with regard to computer interface and interactivity for web sites, interactive media, informative media and DVD authoring. Students will use a variety of computer tools to implement and demonstrate the various concepts in studio design projects. Students will complete interactive titles of their own design with an intuitive interface that incorporates concepts covered in class.

CIAT 4304 - Design Studio 2, 4 Credits
Prerequisite(s): CIAT 3104 with C or better
Level: Lower
The course concentrates on architectural problem-solving methods for a variety of project types and sizes. Students working individually and in teams explore and document their work through sketches, study models and preliminary working drawings. The students are encouraged to develop a professional approach to investigating, analyzing and solving architectural problems. This is the culminating course of the two-year degree program as well as a stepping-stone to the upper level studio courses in the four-year degree program.

CIAT 4403 - Computer Visualization, 3 Credits
Prerequisite(s): CIAT 2201 with D or better
Level: Lower
This is an advanced course that examines the practical and theoretical issues of the computer as a tool for the production of architectural presentations. Technical skills in SketchUp, Revit and Photoshop are learned through tutorials and projects. Students learn to create and execute projects utilizing the computer as an architectural tool through the application of technical skills.

CIAT 4423 - Portfolio I, 3 Credits
Prerequisite(s): CIAT 3403 with C or better and CIAT 3203 with C or better
Level: Lower
This course will prepare students for the task of finding a career in the Digital Media and/or Animation fields. Instruction will be given to develop and design web portfolios, print portfolios, and demo reels that promote the individual's work. Web authoring software such as Dreamweaver and Flash will be used in the creation of individual websites. Non-linear video and sound editing software, such as Soundtrack Pro, SoundBooth, Final Cut Pro, and Premiere will be used to optimize video, sound, and animation work for the various forms of portfolios being created. Print portfolios are created using Photoshop, Illustrator, and Indesign software packages. Additional topics to be covered include writing for job/grant opportunities: biographies, artist statements, resumes, cover letters, and grant writing. Students will also formally present their work to the academic community and prepare for interviews. Students must apply for at least one "real world" opportunity during the course of the class.

CIAT 4433 - Architectural Photography, 3 Credits
Level: Lower
Architectural Photography is a course taught in conjunction with the Junior Year Study Abroad Program in Sorrento, Italy. It is designed for the novice photographer and is intended to give the students the knowledge and skills necessary to effectively document the architecture seen while traveling throughout the semester. The course will introduce the student to the fundamentals of digital photography and digital imaging. Students enrolled in the course will need a reasonably good digital camera, a laptop computer and image-editing software.

CIAT 4443 - Computer Animation IV, 3 Credits
Prerequisite(s): CIAT 3403 with C or better and CIAT 3203 with C or better
Level: Lower

In this course, students will integrate knowledge learned in the previous two semesters and create a 15 week production. This might be character animations, commercials, public service announcements, or interactive presentations. There is a focus on individual creative projects with emphasis on visually communicating a message and theme to the audience through animation.

CIAT 4900 - Directed Study, 1 to 4 Credits

Level: Lower

A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

CIAT 5001 - Hist of Arch & Urb Fm-Sty Abrd, 1 Credit

Level: Lower

This course is a survey of the history of trends in western architecture and urban form. It is in conjunction with a CIAET trip. Emphasis is placed on buildings and cities they will see and visit on the trip.

CIAT 5103 - Production I, 3 Credits

Prerequisite(s): CIAT 4103 with C or better

Level: Upper

This course will introduce the student to the use of current non-linear editing technology. Class projects will develop an understanding of the methods used for creating, sampling and storing digital video and audio and the constraints placed on these media assets when used for media based products. Emphasis is placed upon the technology of digital video and audio, including: formats, data rates and compression algorithms.

CIAT 5203 - Stop Motion Animation, 3 Credits

Prerequisite(s): CIAT 1333 with C or better and CIAT 4423 with C or better

Level: Upper

In this class students will experiment with stop motion animation using single frame cameras and 3-dimensional objects from a video feed into computer software. Students will learn how to apply the principles of animation to stop-motion filmmaking, and will then take their projects through the post-production process.

CIAT 5306 - Design Studio 3, 6 Credits

Prerequisite(s): CIAT 1184 with B or better and CIAT 2394 with B or better and CIAT 3104 with B or better and CIAT 4304 with B or better

Level: Upper

This studio is designed to develop the student's ability to apply and integrate architectural principles and methods to design of buildings and spaces. The exploration and study of architectural design and technology makes connections between theory and practice through the design of buildings and environments that explore the relationship between architecture, building systems, and human experience. Students will be expected to progress through the schematic design and design development phases of short-term and extended design projects.

CIAT 5403 - Advanced Modeling, 3 Credits

Prerequisite(s): CIAT 4414 with C or better and CIAT 4423 with C or better

Level: Upper

This course refines the skills developed from the preceding semesters' work with modeling focusing on NURBS based models. The student will build upon their knowledge of modeling and will provide an in depth study of NURBS modeling coupled with lighting and texturing. The course shows students how to visualize an object and how to effectively build it in the 3D world using various NURBS surface types. Students will communicate scenarios and moods through the use of textures and light to surface interactions.

CIAT 5503 - Sustainable Building Design, 3 Credits

Prerequisite(s): CIAT 3304 with D or better

Level: Upper

Sustainable Building Design is a relatively new approach to architectural design which evolved from solar design solutions of the past three decades. In this field, architects attempt

to design structures that have a minimum negative impact on the natural world. In this course students concentrate on five major area of sustainability including energy, air, water, materials, and site planning. Students will produce a final design project that integrates the five major areas discussed.

CIAT 5603 - Interactive Media, 3 Credits

Prerequisite(s): CIAT 4423 with C or better or CIAT 4103 with D or better
Level: Upper
This course is a continuation of Interactive Authoring. Students expand their interactive authoring skills as they are introduced developing interactive technologies and interactive 3D spaces. Students are taught interaction-based authoring programs used to communicate with viewers both visually and verbally through voice and sound. Students explore the possibilities of communication through interactive media through studio experiments and complete interactive titles of their own design that incorporate concepts covered in class.

CIAT 5900 - Directed Study, 1 to 6 Credits

Level: Upper
A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

CIAT 6103 - Production II, 3 Credits

Prerequisite(s): CIAT 5103 with C or better
Level: Upper
This course introduces fundamental concepts of visual communications involved in understanding and controlling the performance of text and image elements in a field. Emphasis will be on the creative process of making images that can convey ideas and information to others. Students will learn steps taken to create for their proposed project a concept, log line, treatment, storyboard, color studies, lighting studies, and animatic. They will learn how to compile all of these elements into a presentation that they will give in front of professors and industry professionals.

CIAT 6203 - Motion Graphics, 3 Credits

Prerequisite(s): CIAT 4423 with C or better and CIAT 5103 with C or better
Level: Upper
From experimental video and film title sequences to revolutionary TV commercials, broadcast design and motion graphics are used to inspire and influence. Through a series of exercises and projects, students will learn to design and create graphic-based imagery and be able to integrate typographical skills in their work.

CIAT 6306 - Design Studio 4, 6 Credits

Prerequisite(s): CIAT 5306 with C or better
Level: Upper
This studio course concentrates on developing the problem solving skills associated with the design of adaptive reuse and historic preservation building projects. Projects will involve the gathering of information about the historical evolution of the building, the documentation and analysis of the building's structural and material conditions, the understanding of the building's relationship to its wider physical and cultural environment and making appropriate design decisions in respect to new uses. Over the course of the semester, students will creatively synthesize their research, building and site with new program requirements into schematics and design development proposals. Sustainability, standards for documentation of as-built conditions, architectural styles, identifying architectural character, historic construction technology and materials will be addressed.

CIAT 6403 - Adv Texturing, Lighting & Rend, 3 Credits

Prerequisite(s): CIAT 5103 with C or better and CIAT 5403 with C or better
Level: Upper
This course is a continuation of the sequence of 3D classes. It takes the projects introduced the previous semester in Advanced Modeling (CIAT 6303) and applies texturing, lighting, and rendering for 3D animation. Students will create professional quality textures using traditional means as well as using software. They will design and use complex lighting systems and rendering techniques.

CIAT 6406 - Studio Sorrento, 6 Credits

Prerequisite(s): CIAT 5306 with C or better
Level: Upper
Studio Sorrento is intended solely for students enrolled in the Junior Year Study Abroad Program in Sorrento, Italy. The course will be structured around the experiences, field trips and other learning opportunities during the semester of study in Italy. Particular attention will focus on elements of traditional town design, sustainable building strategies, historic building analysis, and adaptive/sustainable re-use of historic structures. Student work for the semester will include: the development of a journal of site visits and analyses, photographic and metric documentation, reflective writing, and small design projects within the Sorrento environment.

CIAT 7001 - Studio Thesis Research, 1 Credit

Prerequisite(s): CIAT 6306 with D or better
Level: Upper
This course will consist of lectures and associated exercises intended to provide the student with a framework that will support and guide them through the beginning stage of their senior thesis project exploration. Emphasis will be placed on developing research and writing skills that will enhance the student's ability to select an acceptable thesis project and site, and develop a program based on a given set of requirements.

CIAT 7103 - Commty Svc Digitl Md & Animatn, 3 Credits

Prerequisite(s): CIAT 6103 with C or better and CIAT 6203 with C or better and CIAT 6403 with C or better
Level: Upper
This course, offered in the final year, provides the students with practical application of skills developed in the Digital Media and Animation major. This directed study provides valuable real-life experience while extending the skills and good-will of the students towards the community. The student will be responsible for all aspects of the project for a community organization while under the guidance of the curriculum faculty. Internships outside the Alfred community are also an option and will be discussed throughout the students' junior year.

CIAT 7106 - Senior Studio Project I, 6 Credits

Prerequisite(s): CIAT 6203 with C or better and CIAT 6403 with C or better
Level: Upper
This is a cumulative two-part course where students will integrate aspects from their studies of the previous three years. Students will use this semester to create one of the following: a 3D animated film; a 2D animated film; an Experimental Animation film (Stop Motion, Mixture of 2D and 3D animation or a fully Interactive/Informative Media project). Students will produce all pre-production work including proposal, storyboards and animatics. Students will also produce all post-production work including editing, sound mixing and final delivery format (CD, VHS, and/or DVD) prior to a film screening in the spring semester.

CIAT 7306 - Design Studio 5, 6 Credits

Prerequisite(s): CIAT 6306 with C or better or CIAT 6406 with D or better
Level: Upper
This studio focuses on the design of buildings and places in an urban setting that require an intense concentration of support systems. The course exploration and study of architectural design, technology and planning principles is designed to bridge the gap between architectural theory and practice through the design of structures and places for human use and inspiration. Students will be expected to progress through the schematic design and design development phases of short-term and extended design projects. Conventional media and three-dimensional computer modeling will be used to define, analyze and present solutions to complex architectural problems. Assignments and in-class exercises related to design, theory, technology and criticism will also be used to reinforce topics discussed in class.

CIAT 8003 - Professional Practice 2, 3 Credits

Prerequisite(s): CIAT 3304 with D or better
Level: Upper
The context within which buildings and spaces are created is rapidly evolving as is the way in which architecture and design is practiced. This advanced course is designed to provide the

future practitioner with a comprehensive study of the business and practice of architecture and design. Emphasis will be placed on practical skills and usable information that will enhance the students' ability to function within the design professions and/or related disciplines.

CIAT 8103 - Portfolio II, 3 Credits

Prerequisite(s): CIAT 7103 with C or better and CIAT 7106 with C or better
Level: Upper
This course will prepare students for the task of finding the next opportunity to advance their professional career, be it graduate school, employment in industry, exhibition and/or freelance work. Study will include an overview of the rapidly changing and emerging opportunities for media artists. The students will develop a strategy to enhance skills in an ever-changing field. Instruction will be given to develop a professional identity that is conveyed in the design of their portfolio. Current print and web design software will be utilized to produce a finished interactive electronic portfolio to accompany a published book detailing their work.

CIAT 8106 - Senior Studio Project II, 6 Credits

Prerequisite(s): CIAT 7103 with C or better and CIAT 7106 with C or better
Level: Upper
This is a cumulative two-part course where students will integrate aspects from their studies of the previous three years. Students will use this semester to create one of the following: a 3D animated film; a 2D animated film; an Experimental Animation film (Stop Motion, Mixture of 2D and 3D animation or a fully Interactive/Informative Media project). Students will produce all pre-production work including proposal, storyboards and animatics. Students will also generate all post-production work including editing, sound mixing and final delivery format (using current technology) prior to a film screening.

CIAT 8306 - Design Studio 6, 6 Credits

Prerequisite(s): CIAT 7306 with C or better
Level: Upper
This course is the capstone of the six semester sequence of architectural design studios. Building upon the thesis research completed during the previous semester, students will finalize a design program for their chosen thesis project. They will carry out a comprehensive design development study, present their design solution to a jury of faculty and visiting professionals, and defend the decision making process that gave rise to their design. The student is expected to show competence and care in their technological solutions and in the creation of a livable, efficient, and contextually appropriate structure.

COMPUTER INFORM SYSTEMS

CISY 1001 - Word Processing, 1 Credit

Level: Lower
This course provides comprehensive exposure to contemporary word processing software, and will develop critical word processing skills. Emphasis will be on creating, editing, saving and printing written documents using current word processing applications software.

CISY 1003 - Intro to Microcomputer Appl, 3 Credits

Level: Lower
An introductory course in computer applications, focusing on microcomputer technology utilizing operating system/network commands, word processing, spreadsheets, database, presentation software, and other applications used in business and scientific environments. Students cannot earn credit for both CISY 1003 and CISY 1023.

CISY 1011 - Spreadsheets, 1 Credit

Level: Lower
This course provides comprehensive exposure to contemporary spreadsheet software, and will develop critical spreadsheet skills. Emphasis will be on creating, editing, saving and printing electronic spreadsheets.

CISY 1023 - Intro to Information Tech, 3 Credits

Level: Lower
An introductory course in computer applications, focusing on microcomputer technology emphasizing file management utilizing various operating systems, operating system

commands, spreadsheets, database, and other internet applications used in business and scientific environments. Students cannot earn credit for both CISY 1003 and CISY 1023.

CISY 1031 - Database, 1 Credit

Level: Lower

This course provides comprehensive exposure to contemporary database software. Topics include: creating tables, sorting, queries, reports, and forms.

CISY 1041 - Internet & The Electr Highways, 1 Credit

Level: Lower

This course provides a comprehensive exposure to contemporary electronic communications. Emphasis will be on accessing the various networks and searching for relevant information using specific network programs and tools.

CISY 1051 - Presentation Technologies, 1 Credit

Level: Lower

This course provides comprehensive exposure to contemporary presentation graphics technology. Topics include: creating slides, changing test attributes, tables, charts, special effects, effective presentation techniques. This is a five week course.

CISY 1061 - Office Integration, 1 Credit

Prerequisite(s): CISY 1003 with D or better or CISY 1023 with D or better

Level: Lower

A comprehensive approach to the use of word-processing, spreadsheet, database and presentation software. Integrating office applications, internet tools in projects, and use more advanced features, techniques, and data format. Office applications are the products students are most likely to encounter in their careers. Integration feature helps students understand how different applications work together.

CISY 1081 - Microcomputer Applications, 1 Credit

Level: Lower

An introductory course in computer applications utilizing current software/network packages. Students will create documents to support traditional and electronic forms of communication. Major topics include: operating system/network commands, word processing, spreadsheets, and presentation software.

CISY 1103 - Info Technology Management, 3 Credits

Level: Lower

This course will introduce the student to multiple aspects of information technology management including: representing, storing, manipulating, and using digital information. Topics include: computer hardware and software fundamentals, essential applications, networking and the Internet, and computer user security and risks. Students will develop skills in collecting, analyzing, and using information from a variety of resources in order to complete class projects.

CISY 1111 - IT Freshman Seminar, 1 Credit

Level: Lower

Students will be introduced to and implement strategies for future employment. Students will be introduced to critical thinking and other skills that will make them successful in Computer Science, Computer Information Systems, and Information Technology programs. Students will complete a series of written assignments and classroom activities in career exploration, goals determination and evaluation, diversity in school and the workplace, professionalism, and critical thinking. Basics of library skills and internet-based research will be covered.

CISY 1113 - Intro to Computer Programming, 3 Credits

Corequisite(s):

Level: Lower

An introduction to and application of algorithmic processes. The development of solutions through a set of logical steps, including structured design and techniques will be emphasized. A high-level language will be used to implement these solutions on a computer. Students will write, debug, and execute programs in the business or scientific areas.

CISY 1123 - Intro to Programming for IT, 3 Credits

Corequisite(s):
Level: Lower
An introductory programming course for information technology or CIS majors. The development of solutions through a set of logical steps and basic control structures (including selection and iteration) will be introduced. Students will write, debug and execute programs using a high level visual programming language.

CISY 1213 - Prob Sol Appr for Programmers, 3 Credits
Level: Lower
This course is designed to enhance and develop problem-solving skills. It concentrates on creative problem solving by: (1) studying the process of problem-solving (2) solving a wide and progressively more difficult set of problems and (3) translating the manual solutions to computer programming or application software solutions. Both procedural and object-oriented problem solving methods will be used.

CISY 2023 - Desng Integrated MS Offic Appl, 3 Credits
Prerequisite(s): CISY 1123 with D or better and (CISY 1023 with D or better or CISY 1003 with D or better)
Level: Lower
In this course, students will integrate Microsoft Office applications using VB.Net and Visual Basic for Applications. Topics addressed include object-oriented programming concepts using VB.NET and VBA as they pertain to the MS Office applications (including Word, Excel, Access, Outlook, and PowerPoint), creation of applets and toolbar objects within the applications, integration of MS Office applications (including Word, Excel, Access, Outlook and PowerPoint), distribution of applications using intranets and web pages, and design/testing/modifying/maintaining VB.NET forms used as front end interfaces that support user needs in small offices or businesses.

CISY 2063 - Microcomputer Database, 3 Credits
Prerequisite(s): CISY 1003 with D or better or CISY 1023 with D or better
Level: Lower
A comprehensive exposure to the use of microcomputer database software concepts, capabilities and application; focusing on relational database techniques, database programming, and developing business application systems.

CISY 2143 - Microcomputer Systems I, 3 Credits
Prerequisite(s): CISY 1003 with D or better or CISY 1023 with D or better
Level: Lower
This course provides an exposure to microcomputer operating systems and hardware. Topics include hardware, trouble- shooting, operating system commands, system utilities, memory managers, and graphical user interface (GUI) software.

CISY 2153 - Database Appl and Programng I, 3 Credits
Prerequisite(s): CISY 1023 with D or better
Level: Lower
A comprehensive exposure to the use of database software concepts, capabilities and application; focusing on relational database techniques, SQL, normalization, database programming and developing application systems. final/comprehensive project will be required.

CISY 2203 - Web Page Dev for Non-Majors, 3 Credits
Prerequisite(s): CISY 1003 with D or better
Level: Lower
Students will be introduced to and implement web development strategies and technologies for college and future employment success. Designed for the non-IT major, the course will provide students with a broad overview of the Internet and the Internet and the World Wide Web (WWW) focusing on general understanding of development themes, web design, and terminology. Students will develop client side software using Hypertext Markup Language (HTML) and industry standard composing software (such as Dreamweaver).

CISY 3023 - Advanced Microcmptr Spreadshts, 3 Credits
Prerequisite(s): CISY 1003 with D or better or CISY 1023 with D or better or CISY 1103 with D or better
Level: Lower

A comprehensive exposure to the use of microcomputer spreadsheet: concepts, capabilities and applications beyond the introductory level; focusing on developing expertise in using a contemporary spreadsheet software package and companion products to develop business systems.

CISY 3223 - Intro to Web Page Development, 3 Credits

Prerequisite(s): CISY 1023 with D or better
Level: Lower
An introductory course in web page development with HTML and XHTML. Also included will be various software packages that automate the web page design process. These may include Dreamweaver, Front Page, and others. This course is suitable for anyone who would like to create simple, but useful web pages. Topics include: the internet, tables, frames, forms, scripting language(s), multi-media.

CISY 3283 - Internetworking I, 3 Credits

Prerequisite(s): CISY 1023 with D or better
Level: Lower
This is the first of two courses in a series to be offered covering the Cisco Academy semesters 1 and 2. Students will develop skills and knowledge in network media installation and testing, router and switch installation and configuration, and concepts of Local Area Networks (LANs) and Wide Area Networks (WANs). Instruction will be completed through on-line resources, lecture, and hands-on skills development. Students will be prepared for Cisco Certified Network Associate certification exams upon completion of both courses.

CISY 4003 - Introduction Data Structures, 3 Credits

Prerequisite(s): CISY 4103 with D or better
Level: Lower
An introduction to the concepts and use of data structures and associated algorithms. Emphasis on algorithm comparison, design of data organization and a matrix of issues involving running time and space limitations inherent in data structure and algorithm implementation. Techniques of analysis and design of algorithms involving searching, sorting, recursion, and machine/memory management.

CISY 4023 - Computer Programming in C, 3 Credits

Prerequisite(s): CISY 1113 with D or better or CISY 1123 with D or better
Level: Lower
Introduction to the C programming language and the use of the computer to solve business, scientific, and hardware control problems. Development of problem-solving skills using C will be emphasized. Topics include: functions, input-output functions, operating system interface, control structures, arrays, strings, pointers, storage classes, and structures.

CISY 4033 - Networking I, 3 Credits

Prerequisite(s): (CISY 1113 with D or better or CISY 1123 with D or better) or ELET 1102 with D or better or ELET 1003 with D or better
Level: Lower
This is an introductory course in networking with a survey and evaluation of network media, access methods, topologies, and terminology. Topics will include end user perspective, network cabling, hardware and software protocols, internetworking, network operating systems, and system administration. Included will be basic server installation, configuration, and management. A variety of workstation and server operating systems will be explored through extensive hands-on labs.

CISY 4053 - Linux/Unix Admin and Scripting, 3 Credits

Prerequisite(s): CISY 4033 with D or better or ELET 4114 with D or better or ELET 2012 with D or better
Level: Lower
This course will take a more in depth look at Linux and Unix-like system administration. This will include console and graphical interfaces. Major topics include file systems, text processing, installation, system configuration, software packages, network configuration, backup, and kernel management. A significant portion of the course will concentrate on script analysis and creation. Laboratory exercises will provide hands-on exercise in each of these topics.

CISY 4063 - Systems Analysis & Design, 3 Credits
Prerequisite(s): CISY 1113 with D or better or CISY 1123 with D or better
Level: Lower
This course is designed to identify and apply the fundamental concepts underlying all information systems. Emphasis is on the structured life-cycle development approach in the design of computer-based information systems. Current tools and techniques are applied to a case study project.

CISY 4103 - Visual Programming & Developmt, 3 Credits
Prerequisite(s): CISY 1113 with D or better or CISY 1123 with D or better
Level: Lower
A visual programming environment will be used in a continuation of Computer Programming I. Emphasis will be placed on advanced algorithms, program design and development. Topics included will be sub-programs, arrays, files, and data abstraction. Debugging and proper program design and documentation will be stressed.

CISY 4283 - Internetworking II, 3 Credits
Prerequisite(s): CISY 3283 with D or better
Level: Lower
Students will develop skills and knowledge in network media installation and testing, router and switch installation, and concepts of Local Area Networks (LANs) and Wide Area Networks (WANs). Instruction will be completed through on-line resources, lecture, and hands-on skill development. Students will be prepared for Cisco Certified Network Associate certification exams upon completion of CISY 3283 and this course.

CISY 4900 - Directed Study, 1 to 4 Credits
Level: Lower
A capstone course which provides an integrative experience in applying the knowledge and skills of earlier course work, with particular emphasis on computer science management information systems, and communications skills in an integrated/internship setting; requires student to present and defend, orally and in writing, solutions to experienced real-world problems encountered.

CISY 5123 - Scientific Prog in C and C++, 3 Credits
Prerequisite(s): or MATH 1033 with D or better
Level: Upper
Students will learn structured and object-oriented programming techniques to solve scientific and engineering applications using the C and C++ programming languages. Topics include data types and structures, control structures, I/O pointers, program design and maintenance, and programming techniques.

CISY 5133 - Sec Policies, Recov & Risk Man, 3 Credits
Prerequisite(s): CISY 1113 with D or better or CISY 1123 with D or better
Level: Upper
Students will be introduced to security policies, the tools and techniques used in security management, and risk management procedures. They will analyze risk and security threats in the organization as well as manage, test, and establish security policy. Topics such as information protection, code of practice for information security, risk management, security awareness and security evaluations will be explored. A final project in security assessment will be required.

CISY 5203 - Network Administration, 3 Credits
Prerequisite(s): CISY 4033 with D or better or ELET 2012 with D or better
Level: Upper
Students will use a variety of network management tools to manage, monitor, support and troubleshoot network operations. Topics will include performance issues, end-user accounts, data security, disaster recovery, supporting applications, and documentation.

CISY 5233 - Human Computer Interaction, 3 Credits
Prerequisite(s): CISY 4103 with D or better and CISY 3223 with D or better
Level: Upper
This course will cover the design, prototyping, and evaluation of user interface to computers.

This will include the implementation of interactive computing systems for human use and the study of major phenomena surrounding them. In addition, the course will stress the importance of good interfaces and the relationship of user interface design to human-computer interaction within multi-disciplinary dynamics. Example systems, case studies, methodologies and models will be used to demonstrate the concepts and the importance of human computer interaction.

CISY 5303 - Web Programming I, 3 Credits

Prerequisite(s): CISY 1113 with D or better or CISY 1123 with D or better and CISY 2153 with D or better
Level: Upper
A comprehensive survey of HTML and web publishing software to create robust, functional web pages. This course will examine HTML standards, browser capabilities, information architecture, bandwidth considerations, image format, maps, frames, forms, and server/client side scripting. Topics of current interest will be included, such as: JavaScript, VBScript, ActiveX, Active Server Pages, Dynamic HTML, and Cascading Style Sheets.

CISY 5313 - Surv in Web Pg Dev for Non-Maj, 3 Credits

Prerequisite(s): CISY 1003 with D or better
Level: Upper
Students will be introduced to and implement web development strategies and technologies for college and future employment success. Designed for the non-IT major, the course will provide students with a broad overview of the Internet and the World Wide Web (WWW) focusing on general understanding of development themes, web design, and terminology. Students will develop client side software using Hypertext Markup Language (HTML) and industry standard composing software (such as Dreamweaver).

CISY 5403 - Database Concepts, 3 Credits

Prerequisite(s): CISY 2153 with D or better
Level: Upper
This course is a study of the terminology, design, implementation and software associated with database systems. Topics include the need for database management systems, file organization, sequential and direct access methods and physical implementation. Other topics covered are relational database design, entity and semantic models, hierarchical and network models, SQL, database applications using the internet, and sharing enterprise data. Students will design, implement, test, and debug database management systems according to industry standards.

CISY 5603 - Database Administration, 3 Credits

Prerequisite(s): CISY 4053 with D or better and CISY 5403 with D or better
Level: Upper
This course introduces tools and techniques used in Database Administration. Students will be introduced to the Client/Server Database environment. Students will utilize database implementation and administration tools. Students will manage, test, and establish client-server communication and server-server communication with single or multiple database servers. Topics such as schema implementation, storage allocation and management, user creation and access security, backup and recovery, and performance measurement and enhancement will be explored.

CISY 5613 - UNIX/Linux Server Admin, 3 Credits

Prerequisite(s): CISY 4053 with D or better
Level: Upper
This course will introduce students to the techniques and practices associated with the installation, configuration, troubleshooting, and maintenance of a UNIX/Linux based network. Students will create an operational UNIX/Linux server within a network domain to support DNS, DHCP, gateway, file, print, and other services. Applications will be installed and supported for network users. Operational practices including security, user and group management, backups, logging, script use, and documentation will be addressed as a final project.

CISY 5723 - Essentials of Info Security, 3 Credits

Prerequisite(s): CISY 4033 with D or better or ELET 2012 with D or better

Level: Upper
This is a comprehensive survey of all aspects of computer security. This will include local host, network, web, database security as well as other objects that are prone to attack. The student will focus on the identification of security threats and countermeasures that can be taken to make these systems more secure. Students will develop a security plan for a small to mid-size company.

CISY 5900 - Directed Study, 1 to 6 Credits
Level: Upper
A capstone course which provides an integrative experience in applying the knowledge and skills of earlier course work, with particular emphasis on computer science management information systems, and communications skills in an integrated/internship setting; requires student to present and defend, orally and in writing, solutions to experienced real-world problems encountered.

CISY 6103 - Web Server Administration, 3 Credits
Prerequisite(s): CISY 4053 with D or better and CISY 3223 with D or better
Level: Upper
This is a comprehensive survey of all aspects of web server administration. Students will gain hands-on experience by actually installing and administering their own web servers. Topics include: server installation and configuration, site planning, supporting dynamic content, security, and maintenance.

CISY 6123 - Adv Pro wth Vid Game Des & Dev, 3 Credits
Prerequisite(s): CISY 4003 with D or better or CISY 6503 with D or better
Level: Upper
This course is an advanced study of programming using current tools to create video games. Topics covered include higher-level programming techniques, writing programs that use the windows user interface, and creating and using graphic objects. The gaming topics of data structures and algorithms, artificial intelligence, physics modeling, and mathematics will also be covered. A final project will be required incorporating AI and physics.

CISY 6503 - Object-Oriented Programming, 3 Credits
Prerequisite(s): CISY 4103 with D or better
Level: Upper
Object-oriented analysis (OOA) and object-oriented design (OOD) concepts will be covered using an object-oriented programming (OOP) language such as Java. Topics include: objects, messages, classes, encapsulation, inheritance, polymorphism, code reuse, and method-driven and model- driven object-oriented approaches, methodologies and tools. Students will formulate object solutions to practical problems in the business and scientific areas.

CISY 6603 - Intro to Software Engineering, 3 Credits
Prerequisite(s): CISY 6503 with D or better
Level: Upper
This course will give students both a theoretical and a practical foundation in software engineering. In the theoretical part, students will learn about the principles and methods of software engineering, including current and emerging software engineering practices and support tools. In the practical part, students will become familiar with the development of software products from an industry perspective, including generation of appropriate documents, under tight schedules and limited resources. A final project is required.

CISY 6703 - Network Design Concepts, 3 Credits
Prerequisite(s): CISY 4033 with D or better *
Level: Upper
In this course students will design and implement network systems, utilizing various topologies, media, and protocols. Students will control network hardware such as bridges, switches, hubs, and routers. Design concepts will be implemented through a variety of laboratory exercises. Students will be required to create and defend a network design plan.

CISY 7003 - Project Management, 3 Credits
Prerequisite(s): CISY 1003 with D or better or CISY 1023 with D or better or CISY 1113 with D or better or CISY 1123 with D or better
Level: Upper

A comprehensive approach to project management tools and applications in an interdisciplinary and global environment. Emphasizing concepts, techniques, and principles associated with project management, this course is vital to students entering the IT management field. The course will focus on the changes in the computing environment including hardware, software, and networking. Students will be able to plan, schedule, budget, estimate, control, and monitor projects. In addition, they will become familiar with resource allocation, resource loading, CPM, CMM, GANTT, and PERT. The use of project management software will be a major component of the course.

CISY 7013 - Network & Host Security, 3 Credits

Prerequisite(s): CISY 5723 with D or better and (CISY 4043 with D or better or CISY 4053 with D or better)
Level: Upper
This course will provide a practical, hands-on approach to the securing of both hosts and networks. It includes host and network hardening techniques, as well as planning and implementation for wireless network security. A variety of client and network operating systems will be used. This course assumes a prerequisite knowledge of network operating systems and introductory security concepts. A major network security project is a requirement of the course and will be presented in written and oral formats.

CISY 7023 - Compu Forensics & Legal Issues, 3 Credits

Prerequisite(s): CISY 5203 with D or better or CISY 4053 with D or better
Level: Upper
This course will provide a practical, hands-on approach to the process of scientifically retrieving, examining and analyzing data from computer storage media so that data can be used as evidence in court. The course assumes a prerequisite knowledge of network operating systems and security concepts. A final project will be required.

CISY 7033 - Security Tools, 3 Credits

Prerequisite(s): CISY 5203 with D or better or CISY 4043 with D or better or CISY 4053 with D or better
Level: Upper
This course will emphasize deploying secure wireless networks and protecting them from unauthorized intrusions. The course provides a practical, hands-on approach to a myriad of security tools employed in wired and wireless networks. These security tools will include Industry Standard Firewalls, Virtual Private Networks (VPNs), wired network vulnerability scanners, wireless security probes, wireless intrusion detectors, wireless scanners and wireless encryption cracking utilities. Firewall advanced concepts and technologies will be covered in depth and include design considerations for enterprise networks, large company networks and medium business networks. The course will include VPN concepts, technologies, and configurations for site to site VPNs as well as configurations for client remote access VPNs. The course will cover various vulnerability scanners for networks with heterogeneous operating systems and advanced firewall configurations. Students, in a laboratory environment, will attack and defend networks and submit a project paper detailing lessons learned and how to best defend both wired and wireless networks. The course assumes a prerequisite knowledge of network operating system and security concepts.

CISY 7103 - Multi-Media Computing, 3 Credits

Prerequisite(s): CISY 5303 with D or better
Level: Upper
This course is a study of the simultaneous control of media elements within a Web-based environment including graphic, hypertext, digital audio, CD audio, MIDI, digital video and animation. Students will learn and apply the process of creating participant interactive and self-running computer presentations. Focus will be on building web applications with multi-media content, while considering HCI (human computer interaction) issues. Various software packages will be used, such as: Dreamweaver, Flash, Pro Tools and Fireworks. A major web application project with multi-media content is a requirement of the course.

CISY 7203 - Web Programming II, 3 Credits

Prerequisite(s): CISY 5303 with D or better
Level: Upper
A survey of programming languages and techniques for Web development. Topics include

CGI'S (Common Gateway Interface), client side programming with JavaScript, dynamic content using Java and ActiveX, server side programming using Active Server Pages and VBScript, creating dynamic database driven content, and developing web based client/server database applications.

CISY 8303 - Sftw Intgtn & Interoperability, 3 Credits

Prerequisite(s): CISY 6703 with D or better and CISY 5723 with D or better
Level: Upper
In this course, students will integrate network system components to construct a working enterprise network. Topics addressed include integration of different network topologies, interoperability between network operating systems, integration of client-server applications, web based information systems, other support systems and support of end-user needs.

CISY 8403 - Web Applications, 3 Credits

Prerequisite(s): CISY 7203 with D or better
Level: Upper
In this capstone course, students will create web based multi-media applications for companies and/or organizations. These applications will demonstrate client and server side design, programming and maintenance. Additional topics include: systems development life cycle, web-site hosting and administration, e-commerce, integrated software applications, and server administration aspect of their applications. These applications will include at a minimum a fully functional e-commerce site and an integrated software application site. Students will also be exposed to creating these applications within both individual and group settings and utilize the skills they have developed in earlier course work. The applications will involve projects from outside the academic classroom in which the students experience both a management and employee role as well as consulting role. This course will help meet the growing demands of companies seeking professionally trained demands of companies seeking professionally trained employees with a full complement of web development skills.

CISY 8503 - Appl Database Management, 3 Credits

Prerequisite(s): CISY 5403 with D or better and CISY 6503 with D or better
Level: Upper
In this capstone course, students will create and maintain Database Applications in a commercial and/or academic setting. This course provides an integrative experience in applying the knowledge and skills of earlier course work, focusing on multi-user database systems. A major portion of this course will be design, implementation, and documentation of an enterprise data system. Additional topics include: systems development life cycle, web applications, and application reliability and security.

CISY 8603 - Seminar Critical Issues in IT, 3 Credits

Prerequisite(s): CISY 4103 with D or better
Level: Upper
This is a research-oriented and performance- oriented course. The course addresses critical (both theoretical and pragmatic) issues in information technology (IT). Issues of concern may include, but not limited to, IT systems security, ethics of using IT systems, human-IT systems interface, and data analysis requirements at different organizational levels. Each student is expected to conduct research, present their findings, accept feedback on their presentations, and document their knowledge of their topics. Students will also complete a project working with a cross-disciplinary team and prepare strategies/materials for an effective job search. Every student is expected to attend all class presentations and guest speaker sessions.

CISY 8703 - Information Security Capstone, 3 Credits

Prerequisite(s): CISY 5133 with D or better
Level: Upper
In this course, students will integrate, configure and analyze network system components, security tools and procedures necessary to create enterprise class network security perimeters. Topics addressed include a combination of open source and proprietary security applications covering the fundamental components of an effective network security perimeter. These components include: firewalls, Intrusion Detection Systems (IDSs), Intrusion Prevention Systems (IPS) Virtual Private Networks (VPN), authentication systems, port scanning, vulnerability scanning penetration testing, disaster recovery systems and security management systems. An in-depth analysis of the security risks associated with the TCP/IP protocol and associated sub-protocols will also be included as part of a final project.

CISY 8706 - Info Technology Internship, 6 Credits

Level: Upper

Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of educational experiences under direct supervision of an owner, manager or supervisor of information technology in an organization. Each intern will be supervised by a member of the faculty. Written and oral reports and a journal of work experience activities will be required. Evaluation will be based on the quality of experiences gained from the internship. Students will be required to complete a series of 4 brief investigative or evaluative papers while completing the internship in areas such as career development, organizational structures, organized labor, business management, security, policies, and/or industry and market trends. Two papers will be completed in each of the 6 hour internships. These courses are offered as a two-part alternative to CISY 8712. 8706 and 8716 are to be taken in sequence as two 6 credit hour classes. These 12 hours will be equivalent of CISY 8712. Students may not enroll in CISY 8712 and CISY 8706 / 8716.

CISY 8712 - Info Technology Internship, 12 Credits

Level: Upper

Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of educational experiences under direct supervision of an owner, manager or supervisor of information technology in an organization. Each intern will be supervised by a member of the faculty. Written and oral reports and a journal of work experience activities will be required. Evaluation will be based on the quality of experiences gained from the internship. Students will be required to complete a series of 4 brief investigative or evaluative papers while completing the internship in areas such as career development, organizational structures, organized labor, business management, security, policies, and/or industry and market trends.

CISY 8716 - Info Technology Internship, 6 Credits

Level: Upper

Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of educational experiences under direct supervision of an owner, manager or supervisor of information technology in an organization. Each intern will be supervised by a member of the faculty. Written and oral reports and a journal of work experience activities will be required. Evaluation will be based on the quality of experiences gained from the internship. Students will be required to complete a series of 4 brief investigative or evaluative papers while completing the internship in areas such as career development, organizational structures, organized labor, business management, security, policies, and/or industry and market trends. Two papers will be completed in each of the 6 hour internships. These courses are offered as a two-part alternative to CISY 8712. 8706 and 8716 are to be taken in sequence as two 6 credit hour classes. These 12 hours will be equivalent to CISY 8712. Students may not enroll in CISY 8712 and CISY 8706 / 8716.

CIVIL ENGINEERING TECH

CIVL 1011 - Civil AutoCAD, 1 Credit

Level: Lower

This course will give the student the basic skills necessary to complete dimensioned drawings in AutoCAD.

CIVL 1013 - Portland Cement Concrete, 3 Credits

Level: Lower

An introduction to aggregates and concrete as construction materials. Standard techniques of measurement and computation are presented, then applied to testing materials. Portland cement concrete is studied with emphasis on quality control in the field preparing the student to reach the level of Concrete Field Testing Technical Grade 1, by American Concrete Institute.

CIVL 1023 - Construction Materials & Appli, 3 Credits

Level: Lower

This course is designed to introduce the student to construction materials commonly used

in the construction of commercial and residential structures. The emphasis will be on wood, masonry, concrete, soils and structural steel. Students will study the physical properties of the materials as well as how the materials are manufactured to produce a satisfactory product for the construction process.

CIVL 1182 - Civil Technology Graphics, 2 Credits

Level: Lower

An introduction course in construction/civil/ surveying graphics. The student will be introduced to scales, dimensioning, surveying maps, house plans, building codes, and construction terminology. Contour maps, wall sections, foundation plans, floor plans, and house elevations will be drawn and plotted using AutoCAD.

CIVL 1204 - Surveying I, 4 Credits

Level: Lower

A study of the fundamentals of plane surveying. Emphasis is on the use and care of the Theodolite, level, tape and leveling rod, note keeping and basic surveying calculations and adjustments of data. The course is designed to introduce measurement and stakeout techniques through applications in an outdoor laboratory environment.

CIVL 2154 - Quality Control of Const Matl, 4 Credits

Level: Lower

This course is designed to equip the student with entry level skills as a quality control technician in Soil and Asphaltic Concrete. Students will design and test asphaltic concrete mixes using industrial procedures and standards. Soil classification, permeability, sampling, and composition are studied and applied in laboratory. Statistical methods are introduced and then applied to practical problems.

CIVL 2204 - Surveying II, 4 Credits

Prerequisite(s): CIVL 1204 with D or better

Level: Lower

The second course in a two semester sequence emphasizing plane and route surveying theory and techniques.Emphasis will be on instrument adjustment, profiling, cross-sectioning, earthwork calculations, precise angular measurement using theodolites and traversing equipment, realignment of circular curves, compound curves, reverse curves, the spiral, intersection calculations, construction stakeout procedures, an introduction to electronic distance measurement and the continued use of the computer as a computational tool.

CIVL 3204 - Legal Asp & Prac of Land Surv, 4 Credits

Prerequisite(s): CIVL 2204 with D or better

Level: Lower

The land surveyor and his/her professional duties, responsibilities and liabilities; systems used to describe real property; transfer of real property and the location of sequence conveyances. Client, business and contractual relationships and the techniques of record research are discussed.

CIVL 3214 - Control Surveying, 4 Credits

Prerequisite(s): CIVL 2204 with D or better

Level: Lower

This course emphasizes the techniques of precise horizontal and vertical control surveying used by government of private surveyors and engineering consultants. Use of directional theodolites, precise levels and total station measurement equipment are stressed. Projects are used to present underlying theory of field work, standards, specifications, and adjustment of horizontal and vertical data.

CIVL 3554 - Comm Bldg Const Methods & Prac, 4 Credits

Prerequisite(s): CIVL 1011 with D or better and CIVL 1182 with D or better

Level: Lower

A study of materials and methods of construction employed in commercial building construction; this course will be used to extend the students graphics skills as well as their knowledge of the building construction process. Approximately equal emphasis will be placed on steel frame, reinforced concrete and timber construction. Throughout the course attention will be given to new methods and materials through readings in trade journals. Courses equivalent to CIVL 1013 and CIVL 1183 will satisfy course pre-requisites.

CIVL 4104 - Structural Design, 4 Credits

Prerequisite(s): (PHYS 1024 with D or better or PHYS 1044 with D or better) and (MATH 2043 with D or better or MATH 1054 with D or better or MATH 1084 with D or better or MATH 1063 with D or better)
Level: Lower
This course provides the student with a quantitative understanding of the effects of loads on structural elements in a building. Principles of structural mechanics are covered from forces and stresses, to properties of sections, and finally to shear and bending moments on beams. The designs of basic timber and steel beams and columns are also presented.

CIVL 4143 - Contracts, Specs, & Estimating, 3 Credits

Prerequisite(s): CIVL 3554 with D or better
Level: Lower
A study of contracts and specifications governing contractors in the building and construction phases of a job. Practice is given in the estimating of segments of commercial buildings and heavy/highway projects.

CIVL 4144 - Construction Management, 4 Credits

Level: Lower
A study of resources of money, material, machines and personnel used in the development of construction projects. Topics include the design, bid and build elements of the construction project, construction financing, construction documents, planning and scheduling, and labor relations.

CIVL 4164 - Hydraulics and Drainage, 4 Credits

Prerequisite(s): MATH 1063 with D or better or MATH 1084 with D or better
Level: Lower
A basic study of fluid statics and fluid flow emphasizing applications in civil engineering technology. Topics include pressure forces on submerged surfaces, closed conduit incompressible flow, centrifugal pump performance, open channel flow, rainfall and run-off estimates. The laboratory sessions involve the use of equipment to measure pressure and flow.

CIVL 4204 - Subdivision Theory & Appli, 4 Credits

Prerequisite(s): CIVL 3204 with D or better
Level: Lower
An introduction to the U.S. Public Land Survey System, the law of simultaneous conveyances, and the subdivision of lands. Computers will be utilized in the laboratory. Governmental regulations and environmental considerations are addressed.

CIVL 4214 - Surveying Practicum, 4 Credits

Prerequisite(s): CIVL 3214 with D or better and CIVL 3204 with D or better
Level: Lower
A series of field and office problems for 4th semester A.A.S. surveying engineering technology majors only. Students are responsible for the execution of a series of field and office projects.

CIVL 4243 - Surveying Computer Appli, 3 Credits

Prerequisite(s): CIVL 3214 with D or better
Corequisite(s): CIVL 4214
Level: Lower
An introduction to the concepts of office automation, the use of coordinate geometry (COGO) software programs and computer aided drafting (CAD) software programs. Emphasis will be placed on the use of the computer in the solution of problems and projects that stress data analysis, data adjustment, mapping calculations and the application of computer graphics. Courses equivalent to CIVL 1011, CIVL 2204, and CIVL 3214 will satisfy course prerequisites.

CIVL 4273 - Photogrammetry, 3 Credits

Prerequisite(s): CIVL 3214 with D or better
Level: Lower
This course will introduce the advantages of photogrammetry as a mapping and planning tool. The types of photography, photo scale, flight planning techniques and specifications, displacement calculations and stereoscopic measurement are covered.

CIVL 4293 - Transportation Engr Technology, 3 Credits

Prerequisite(s): CIVL 1204 with D or better
Level: Lower
This course introduces students to transportation systems in the U.S. and Canada, transportation planning and economics, surveys and plans, rights-of-way, traffic engineering, highway drainage, and the development of roadsides, highway subgrades, base courses, stabilization, as well as the fundamentals of maintenance.

CIVL 4900 - Directed Study, 1 to 4 Credits

Level: Lower
Special course organized to enable students to elect independent study of engineering problems. Course may entail laboratory or analytical solution of problems or application of principles to engineering problems.

CIVL 5104 - Geological Engineering Tech, 4 Credits

Level: Upper
A first course in geology with applications to engineering projects. Origin of rocks with their general characteristics, structural features of rocks, surface and subsurface waters, wave actions and shore currents, lakes, oceans, and glaciations.

CIVL 5114 - Land Surveying, 4 Credits

Prerequisite(s): CIVL 3204 with D or better
Level: Upper
A study of licensure requirements, professional liability and ethics. The legal concepts of the rules of evidence are presented and applied to written and unwritten transfers of land ownership. Riparian rights, fractional conveyances, reversionary rights, problems of apportionment, procedures, both field and office, for locating written title boundaries and the writing of deed descriptions are discussed in both a theoretical and applied sense. A minimum of nine (9) semester hours of college surveying (including route surveying) or permission of instructor is needed as a prerequisite for this course.

CIVL 5213 - Foundations and Concrete Const, 3 Credits

Prerequisite(s): CIVL 4104 with D or better
Level: Upper
Coverage includes basic design principles of reinforced concrete structural members such as beams, slabs and walls. Topics will include bending of single and doubly reinforced beams, T-beams, and slabs, as well as shear design of these members. The design of development length and splicing of reinforcing bars in the members will be included as well. Methods and materials used in concrete work will be discussed with attention given to the materials and methods of formwork construction.

CIVL 5214 - Intro to Remote Sensing, 4 Credits

Prerequisite(s):
Level: Upper
Remote sensing is a tool used by scientists to study objects or phenomena through the analysis of data acquired remotely. It has been widely used by earth scientists to study space-related issues on the earth's surface. This course aims to expose students to one of the advanced geo-spatial technologies, remote sensing. The course will introduce the acquisition, analysis, and utilization of remote sensing data in performing geo-spatial studies. It will also cover an introduction to the concepts and methods in digital image processing.

CIVL 5900 - Directed Study, 1 to 6 Credits

Level: Upper
Upper division independent study.

CIVL 6104 - Anlys & Adjsmnt of Surv Th, 4 Credits

Prerequisite(s): MATH 2074 with D or better or MATH 2094 with D or better
Level: Upper
An introductory treatment of the adjustment of survey data incorporating the use of the computer and matrix algebra. Error propagation, least-squares adjustment methods and the analysis of survey measurements.

CIVL 6113 - Environmental Tech Concepts, 3 Credits

Prerequisite(s): MATH 1033 with D or better

Level: Upper
This course focuses on environmental technology systems. Topics covered will include: environmental basic concepts, water quality, water pollution, drinking water, sanitary sewer, storm water management, wastewater treatment, municipal solid waste, hazardous waste, Leed building systems, noise pollution, erosion and environmental assessment.

CIVL 6123 - Advanced Mechanical Systems, 3 Credits
Prerequisite(s): CIVL 3554 with D or better
Level: Upper
An introduction to building equipment for single and multi-story projects including domestic water, sewer, heating and ventilating systems. Students will design these systems for a residence or small office building. Students will review blueprints and analyze systems for a large commercial building.

CIVL 6212 - Construction Safety, 2 Credits
Prerequisite(s): CIVL 3554 with D or better
Level: Upper
A comprehensive study of the requirements of an effective safety program that focuses on worker safety, improved productivity and accident risk management using a safety training format designed to provide students with an understanding and application of the OSHA standards relative to their field of study.

CIVL 6214 - Advanced Estimating, 4 Credits
Prerequisite(s): CIVL 4143 with D or better
Level: Upper
Builds upon the basics of quantity survey; use of the computer to support estimating takeoff and extensions of quantities and price for general building estimates. Use of a digitizer and integrated software program to complete quantity surveys. Both commercial building and highway projects estimated.

CIVL 6313 - Green Bldg from Contr Perspctv, 3 Credits
Prerequisite(s): CIVL 3554 with D or better
Level: Upper
This course is an overview of how green building will impact contracts and building in the construction industry. As the nature of green building is continually emerging and evolving, field research will be required of students. Topics in LEED, leadership in energy efficient design, and their impact on contractors will be presented.

CIVL 7001 - Sr Seminar & Project Design, 1 Credit
Level: Upper
This course is the first of a two-semester sequence required for all Land Surveying Engineering Technology Bachelor seniors. Students design and implement a technical project for completion of BSET 8003. Project proposal and oral reports are presented for initial approval by department faculty. Weekly seminar encompasses professional licensure examination preparation, aspects of post-graduation professional employment, review of initial project proposal and consultation on project progress.

CIVL 7104 - Land Development and Design, 4 Credits
Prerequisite(s): CIVL 2204 with D or better and MATH 2043 with D or better and PHYS 2023 with D or better
Level: Upper
This course is intended to give the Civil Engineering Technology student an understanding of the issues related to site development and drainage issues for land development. Students will study and create land development plans including drainage calculations, street and road design, water distribution, and sewer design. Issues related to sustainable development will be integrated into the topics to provide the student with an appreciation of concerns related to energy, as well as material and land conservation. Laboratory experiences will include experiments related to fluid flow, computer analysis of laboratory data, and computations including the development of spreadsheet programs to be used in the designs covered.

CIVL 7114 - Geographic Information Systems, 4 Credits
Prerequisite(s): CIVL 6104 with D or better
Level: Upper

A broad-based introduction to GIS, especially the application of spatial analysis and modeling. Applications will cover both hardware and software considerations, map overlays, automation in thematic and topographic mapping, raster/vector devices, data acquisition, and related database storage and algorithms. Advanced topics will include AM/FM, error modeling and data uncertainty, and new directions and impacts of GIS. Use of Arc View software, and hand held GPS.

CIVL 7213 - Construction Systems, 3 Credits

Prerequisite(s): CIVL 4143 with D or better
Level: Upper
Examining how people and machines are put together to build efficient systems to improve productivity in the construction industry through cycle-time analysis. Course will document existing and emerging construction systems.This course delves extensively into the production capacity and uses of construction equipment.

CIVL 7223 - Construction Project Planning, 3 Credits

Prerequisite(s): CIVL 4143 with D or better
Level: Upper
Development of the construction project management logic diagram for large multi-phased projects, use of software for scheduling, monitoring, and "crashing" projects to evaluate alternatives to reduce time to completion, cost effectiveness of each alternative, and safety considerations.

CIVL 8104 - Satellite & Geodetic Surveying, 4 Credits

Prerequisite(s): MATH 6114 with D or better or MATH 4114 with D or better
Corequisite(s):
Level: Upper
This course will introduce, and/or review the main concepts of a number of advanced subjects from the surveyor's perspective - for example: geodesy, geodetic surveying, map projections, global positioning systems, hydrographics surveying, mine and mineral surveying, deformation studies, total station/data collector interfaces to computer, as well as a projection of future trends. Pertinent activities from the professional associations will also be addressed.

CIVL 8123 - Construction Project Admin, 3 Credits

Prerequisite(s): CIVL 7223 with D or better
Level: Upper
An in-depth study of the documents and processes for construction project administration, including subcontracting, submittals, approvals, expediting, payment procedures, closeout, and reporting.

CIVL 8800 - Directed Study, 1 to 6 Credits

Level: Lower
A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study or project. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the progress of the study.

CIVL 8801 - Directed Study, 6 Credits

Level: Upper
A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study or project. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the progress of the study.

CRIMINAL JUSTICE

CJUS 1003 - Intro to Criminal Justice, 3 Credits

Level: Lower
This course offers an overview of the administration of criminal justice in the United States. Problems of crime prevention and control in American society are emphasized. The course prepares students for further study in criminal justice, for career development in an agency of criminal justice or for knowledgeable citizenship.

CJUS 6003 - Law & Criminal Evidence, 3 Credits

Prerequisite(s): CJUS 1003 with D or better or SOCI 1243 with D or better
Level: Upper
The course examines the origin, development, philosophy, and legal bases of evidence, including a brief survey of the system of constitutional and procedural rules and standards affecting evidence collection and admissibility. Specific topics include evidence collection and preservation, the trial process, expert and lay opinion, scientific evidence, and confessions and admissions. The course requires a research paper.

COMPOSITION

COMP 1403 - English Fundamentals*, 3 Credits

Level: Lower-Developmental/Remedial Course
Course Attributes: Remedial
English Fundamentals is a course designed specifically for the study and for the improvement of basic writing skills and techniques. As such, English Fundamentals allows the student to master a variety of sentence constructions and paragraph types, culminating in the ability to create a multiparagraph essay. The emphasis is on grammar, spelling, punctuation, sentence structure, writing and revising techniques, and proofreading and editing to produce clear, concise, and information-rich sentences and paragraphs. This is a remedial/developmental course; it will not satisfy any graduation requirements. Student performance on the Comprehensive Language Usage Exam and the Writing Competency Exam will affect the final course grade.

COMP 1503 - Fresh Composition, 3 Credits

Level: Lower
Course Attributes: Gen Ed - Basic Comm Option 1, Gen Ed - Basic Comm Option 2, Gen Ed - Basic Comm (Business), Liberal Arts and Science
Freshman Composition is intended to enable students to express themselves in essays. They will generate ideas, develop thesis statements, plan paragraphs, organize compositions, and select rhetorical strategies. Essays and a reference paper are required. Readings stimulate language use, critical thinking, and writing techniques.

COMP 2900 - Directed Study, 1 to 4 Credits

Level: Lower
The student may contract for one to four credit hours of independent study through an arrangement with the instructor. The student must submit a plan acceptable for the instructor and the department chairperson. To be substituted for the listed humanities requirements, a directed study course must be so designated by the department chair. Writing is continued in assignments related to readings, class discussions, and lectures.

COMP 3703 - Technical Writing I, 3 Credits

Prerequisite(s): COMP 1503 with D or better and LITR 2603 with D or better
Level: Lower
Course Attributes: Liberal Arts and Science
This course is offered for students who have completed six hours in English and Humanities and who seek to improve their skills in technical writing. It is designed to give students a practical familiarity with effective communication skills on the job. Students will be encouraged to use experience and knowledge from their academic majors as sources of subject matter in written assignments. The course centers on the knowledge and practice of format and style in technical writing when producing lower-level documents; this includes an emphasis on defining audience and constructing documents in short formats.

COMP 5703 - Technical Writing II, 3 Credits

Prerequisite(s): COMP 1503 with D or better * and LITR 2603 with D or better
Level: Upper
Course Attributes: Liberal Arts and Science
This course is offered for students completing requirements for a bachelor's degree. It will prepare students to handle typical workplace assignments in a competent and professional manner. It will also prepare students to communicate their ideas effectively in writing to persons in and out of their particular professional disciplines. The course centers on the knowledge and practice of format and style in technical writing when producing upper-level

documents; this includes an emphasis on audience analysis and document design as well as research and editing decisions in the composition of long formats.

COMP 7003 - Classical Rhetoric, 3 Credits

Prerequisite(s): COMP 1503 with D or better
Level: Upper
The focus of this course is on persuasive writing and models of argument. Extending the skills developed in COMP 1503, the course provides further instruction and practice in the application of rhetorical theory for the purpose of persuading a particular audience in writing, which is a skill that is essential across disciplines. Students will both analyze written arguments and write their own, applying a writing process and employing research to support a claim, thus also developing information literacy and the ability to appropriately document sources.

COURT REPORTING

CTRP 1174 - Realtime Writing Theory I, 4 Credits

Level: Lower
Realtime Writing Theory I teaches students how to write the spoken word with punctuation by means of a conflict-free, realtime-ready shorthand theory and provide instantaneous translation. It includes the use of on-line computer-aided technology and teacher interaction; live practice dictation for speed and accuracy; read back and analysis of shorthand notes. Weekly speed takes will be given at incremental speeds on unfamiliar material; the same material will not be used more than once every six months. NCRA requirements include the following: students are required to transcribe steno notes and speed takes under timed institutional supervision or if Internet students sign a sworn verification form stating that the work was completed without the aid of anyone present and without cheating. Speed takes shall be monitored and timed in the same way. Students are required to transcribe at least once a week. All speed takes and tests shall be deleted immediately. Internet students must sign a sworn statement verifying the material has been deleted from their computers and no backup has been made. Students shall have access to the minimum grading criteria as set forth by the NCRA requirements. Minimum speeds of 50 words per minute on unfamiliar material with 95 percent accuracy are required for passing the course.

CTRP 2274 - Realtime Writing Theory II, 4 Credits

Prerequisite(s): CTRP 1174 with C or better
Level: Lower
This course is a continuation of basic realtime writing theory. The student will continue to learn to write, read, and transcribe the spoken word by means of a conflict-free, realtime-ready shorthand theory and provide instantaneous translation. The course is structured into 75 classes, which must be completed within the 15-week semester time frame. Each class requires a minimum of three hours of practice time per day. The course is designed for both on campus and Internet training. On campus students will meet at a designated time and place. Internet students can access the class at any time during the day, but are required to spend the same amount of time in class and out of class as an on campus student. All students are expected to spend a minimum of three hours a day on homework, which includes practicing accuracy and speed. Testing material used for speed takes will be given at incremental speeds on unfamiliar material; the same material will not be used more than once every six months. Students are required to transcribe steno notes and speed takes under institutional supervision or, if Internet students sign a sworn verification form stating that the work was completed without the aid of anyone present and without cheating. Speed takes shall be monitored and timed in the same way. Students are required to transcribe at least once a week. All speed takes and tests shall be deleted immediately. Internet students must sign a sworn statement verifying the material has been deleted from their computers and no backup has been made. Students must be able to transcribe three minutes of unfamiliar dictation at 90 words per minute with at least 95 percent accuracy. Students shall have access to the minimum grading criteria as set forth by the NCRA. Successful completion of the course requires a grade of "C" or better. The course includes on-line computer-aided technology for realtime translation.

CTRP 2603 - Persnl Dictionary Prod & Maint, 3 Credits

Prerequisite(s): CTRP 1174 with C or better and CTRP 2274 with C or better

Level: Lower
This course will be an extension of the material learned in the Computer Aided Transcription course (CTRP 3373) and is a direct application of the realtime techniques learned in the Realtime Writing Theory I course (CTRP 1174). The topics to be covered will include personal dictionaries; update area; D-Defines, J-Defines, and E-Defines, job dictionaries; power defines; phonetic tables; how to insert, modify, and delete entries; filtering dictionary; printing dictionary, backing up and restoring dictionaries, and dictionary maintenance. Students will build and maintain their personal dictionary by adding new entries throughout the course.

CTRP 3163 - Speed Bldg I for Report & Capt, 3 Credits
Prerequisite(s): CTRP 2274 with C or better and CTRP 1174 with C or better
Level: Lower
The prerequisite for this course is the successful completion of the Realtime Writing Theory courses (CTRP 1174 and CTRP 2274) or approval of the instructor. The student will continue to learn to write, read, and transcribe the spoken word by means of a conflict-free, realtime-ready shorthand theory. The course is structured into 45 class periods. The typical structured classroom meets every Monday, Wednesday, and Friday throughout the semester. Each class requires a minimum of three hours of practice time per day. The course is designed for Internet training. The course suffices as a survey course to explore the two different modes of reporting: judicial reporting and broadcast reporting. Students must be able to transcribe five minutes of unfamiliar dictation in the following areas: 80 wpm on literary material, 100 wpm on jury charge material, and 120 wpm on two-voice material. All speed takes must be transcribed with a minimum of 95 percent accuracy or higher. Students must be able to write five minutes of literary material at 80 wpm with 96% accuracy or higher and write a ten minute broadcast news program with an accuracy rate of 96% or better. Testing material used for speed takes will be given at incremental speeds on unfamiliar material; the same material will not be used more than once every six months. Internet students must sign a sworn verification form stating that the work was completed without the aid of anyone present and without cheating. Speed takes shall be monitored and timed in the same way. Students are required to transcribe at least once a week. All speed takes and tests shall be deleted immediately. Students must sign a sworn statement verifying that the material has been deleted from their computers and no backup has been made. Students shall have access to the minimum grading criteria as set forth by the NCRA. Successful completion of the course requires a grade of C or better. The course includes online computer-aided technology for realtime translation.

CTRP 3363 - Tech for Reporting/Captioning, 3 Credits
Prerequisite(s): CTRP 2274 with C or better
Level: Lower
This course will complement the Computer Aided Transcription course (CTRP 3373) to the extent that information pertaining to the computers, hardware, software, maintenance, and upkeep will be enhanced. The material covered in this class for reporting students will relate to reporting technology, computer operating systems, realtime applications, realtime reporting in the captioning/CART environment, litigation support, videotaping, and information on related software packages used by judicial reporters. The material covered in this class for captioning students will relate to captioning technology, computer operating systems, on-line translations systems, administrative hearings, indexing and archiving steno notes, both paper and electronic, care and maintenance of computer hardware data input device, basic setup and maintenance of broadcast captioner's equipment, broadcast news production preparation, prescripting, psychology of on-air captioning, verbatim vs. word substitutes, finger spelling, history of captioning, and information relating to the deaf and hard-of-hearing community.

CTRP 3373 - Computer Aided Transcription, 3 Credits
Prerequisite(s):
Level: Lower
This course will teach the student how the computer works with the shorthand writing machine to produce an instantaneous transcript using realtime translation. The course includes computer concepts and terminology and basic file management, saving, editing, and printing. This course will take the student from the basics of a computer application software program to a more advanced level of understanding and appreciation. The goal of the CAT

course is to integrate computer concepts and English punctuation rules to produce an accurate and saleable work product. Students will review basic punctuation rules and apply them to transcript production.

CTRP 4265 - Spd Bldg II for Reprtr & Captn, 5 Credits

Prerequisite(s): CTRP 3163 with C or better
Level: Lower
This course is a continuation of Speed Building I for Reporters and Captioners. The student will continue to learn to write, read, and transcribe the spoken word by means of a conflict-free, realtime-ready shorthand theory. Reporting students must be able to transcribe five minutes of unfamiliar dictation with at least 95 percent accuracy in each of the areas listed: literary at 130 wpm, jury charge at 150 wpm, and two-voice at 170 wpm. Dictation includes two-voice and multi-voice testimony (including medical and technical material), literary, jury charge, and current events. Captioning students must be able to write five minutes of literary material at 130 wpm with 96 percent accuracy or higher. In addition, captioning students must write a 20 minute broadcast news program with an accuracy rate of 96 percent or better. Testing material used for speed takes will be given at incremental speeds on unfamiliar material; the same material will not be used more than once every six months. Students are required to transcribe steno notes and speed takes under institutional supervision or if internet students, sign a sworn verification form stating that the work was completed without the aid of anyone present and without cheating. Speed takes shall be monitored and timed in the same way. Students are required to transcribe at least once a week. All speed takes and tests shall be deleted immediately. Internet students must sign a sworn statement verifying that the material has been deleted from their computers and no backup has been made. Students shall have access to the minimum grading criteria as set forth by the NCRA. Successful completion of the course requires a grade of "C" or better. The course includes on-line computer-aided technology for realtime translation.

CTRP 4365 - Speed Bldg III for Rep & Cap, 5 Credits

Prerequisite(s): CTRP 4265 with C or better
Level: Lower
This course is a continuation of Speed Building II for Reporters and Captioners. The student will continue to learn to write, read, and transcribe the spoken word by means of a conflict-free, realtime-ready shorthand theory. This course dictation includes two-voice and multi-voice testimony (including medical and technical material), literary, jury charge and current events. Captioning students must be able to write three 5-minute takes of literary material at 180 wpm with 96 percent accuracy or higher. In addition, captioning students must write a 30-minute broadcast news program with an accuracy of 96 percent or better. Students are required to perform a line-by-line edit/analysis of steno notes. Testing material used for speed takes will be given at incremental speeds on unfamiliar material; the same material will not be used more than once every six months. Students will be required to transcribe steno notes and speed takes under institutional supervision or, if internet students, sign a sworn verification form stating that the work was completed without the aid of anyone present and without cheating. Speed takes shall be monitored and timed in the same way. Students are required to transcribe at least once a week. All speed takes and tests shall be deleted immediately. Internet students must sign a sworn statement verifying that the material has been deleted from their computers and no backup has been made. Students shall have access to the minimum grading criteria as set forth by the NCRA. Successful completion of the course requires a grade of "C" or better. Students must be able to pass three 5-minute dictations with 95% accuracy in each of the following areas: Q & A at 225 wpm, jury charge at 200 wpm, and literary at 180 wpm. The course includes on-line computer-aided technology for realtime translation.

CTRP 4602 - Int & Prac for Reporter & Capt, 2 Credits

Prerequisite(s): CTRP 4265 with C or better
Corequisite(s):
Level: Lower
Students will arrange for an off-campus experience with a qualified courtroom, freelance, realtime reporter, or captioner within a geographical proximity of their hometown. Student should try to arrange for a variety of experiences over the internship. NCRA requirements: reporting students must pass a pre-internship test at 180 wpm in Q & A material; complete a minimum of 50 hours, 40 hours of which must be in-court; and complete a minimum of 40

pages computer printed transcript. Captioning students are required to pass a pre-internship test at 160 wpm in literary material; complete a minimum of 40 hours, 25 hours of which must be actual writing time and 15 hours of research and dictionary preparation; and complete an unedited captioned translation of three 15 minute segments on varied topics. Students must submit a written narrative report summarizing the internship experience. Reporting students must produce 40 pages of transcript from various experiences during the internship, and submit a signed internship verification form. Captioning students must produce three 15 minute segments on varied topics of unedited captioned translation. Students will be responsible for a presentation on local, national or international current events and the completion of a unit on basic geography.

CTRP 4634 - Proc for Reporters & Captioner, 4 Credits

Prerequisite(s): CTRP 3163 with C or better
Level: Lower
The procedures course is an introduction of court and realtime reporting procedures and practices for the court reporter including: professional responsibilities of federal and state court systems; civil and criminal trials; logistics of reporting (marking exhibits, research and references, filing notes, invoicing, indexing, delivery of transcripts); reporting techniques (interruption of speaker, identification of speaker, swear or affirm witness or interpreter, report with an interpreter, voir dire, etc.) and methods of transcript production. This course includes a description and discussion of the role of the captioner and CART provider. Included in the course will be a simulation of trial and deposition where the student will take the part of the reporter and administer the oath, mark exhibits, and perform other responsibilities the court reporter should be aware of. Also, students will be required to apply professional ethics to various situations and identify and use appropriate library and reference material used in transcript preparation including software and Internet search engines. Students will also be required to simulate and transcribe the National Court Reporter's Association Registered Professional Reporter (RPR) test as well as the Certified Realtime Reporter (CRR) test. Discussion of NCRA Code of Professional Ethics will be included.

CTRP 4900 - Directed Study, 1 to 6 Credits

Level: Lower
A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

DRAFTING/CAD

DCAD 1053 - Technical Calculations I, 3 Credits

Level: Lower
Mathematics review, basic algebra, industrial applications applying the decimal and metric systems, use of reference books and electronic calculators. Successful completion of this course requires a grade of "C" or better.

DCAD 1205 - Industrial Drafting Intro, 5 Credits

Level: Lower
The use of CAD, sketching, geometric construction, and orthographic projection, along with similar applications on computer programs.

DCAD 1305 - Industrial Drafting I, 5 Credits

Corequisite(s):
Level: Lower
Preparation of casting and machine detail drawings using proper dimensioning practices and applications of conventional section views. Introduction of various manufacturing processes, shop terminology, machine operations, and materials used in industrial applications.

DCAD 1405 - Industrial Drafting II, 5 Credits

Corequisite(s):
Level: Lower
The use and application of auxiliary view drawings. Also the use and application of

development drawings, and intersection as they pertain to sheet metal development.

DCAD 2053 - Introduction to Unigraphics, 3 Credits

Level: Lower

In this course the student will model, using a current version of Unigraphics, industrial projects giving careful consideration to their interrelated features. The student will use both sketches and Boolean operations to complete their models. The importance of parametric controls within and between part files will be stressed.

DCAD 2054 - Layout and Detail, 4 Credits

Level: Lower

This course will address advanced design techniques and practices that are typical in the design industry. Students will be challenged with design concepts and problem solving in order to accomplish a particular task. An excellent understanding of gearing kinematics and cams will be realized through practical application. Students will be confronted by design problems that emulate industrial applications.

DCAD 2063 - Technical Calculations II, 3 Credits

Level: Lower

Practical geometry and trigonometry as a continuation of Technical Calculations I. The scope of this course includes solutions of geometric shapes and solids, right and oblique transfers using industrially related situations. Successful completion of this course requires a grade of "C" or better.

DCAD 2205 - Industrial Drafting III, 5 Credits

Prerequisite(s):

Level: Lower

Develop and complete industrial assembly drawings and detail drawings for assemblies, using appropriate dimensioning and ANSI tolerances, complete bill of materials including threads and fastener information and identification. Course will involve, also, aspects of tolerance stack up their calculations. the "Family of Drawing" and assembly.

DCAD 2305 - Welding Drawings, 5 Credits

Prerequisite(s):

Level: Lower

Develop and complete industrial weldment drawings using various welding processes and types of joints used to draw weldment assemblies using related symbols, appropriate materials and dimensioning practices. This will include raw stock materials, piping and structural members. Converting castings to fabrication parts will also be addressed. Successful completion of this course requires a grade of 70% or better on a comprehensive II exam.

DCAD 2805 - Dfting for Residential Const, 5 Credits

Level: Lower

The application of basic methods, symbols and conventions to prepare working drawings for the construction of residential buildings. This course is designed to permit the drafting student to develop, design and create drawings typical to the residential industry. These drawings will allow the student to demonstrate their understanding and design capabilities applied to residential structures. Each student will perform appropriate calculations and prepare all drawings applicable to modern residential construction.

DCAD 3023 - Geometric Dimen & Tolerncng, 3 Credits

Level: Lower

Correctly specify geometric form controls and positional tolerances to engineering drawings with the use of ANSI geometric symbols.

DCAD 3024 - Layout & Details, 4 Credits

Level: Lower

Preparation of mechanical design layouts, details and assembly drawings, using mechanisms such as linkages, pneumatics, hydraulics, gear trains, belt and chain drives and control systems. Application of geometric dimensioning and tolerances to appropriate detail drawings. This is a five (5) week course.

DCAD 3044 - Fluid Power, 4 Credits

Level: Lower

In this course students will prepare layouts of single and double line drawings for hydraulic and pneumatic systems, and will also study and apply mathematic calculations as they pertain to their assignments. The use of vendor catalogs and live components are used in the preparation of the above-mentioned drawings. The student will also prepare a sequence of operations explaining how each schematic operates.

DCAD 3104 - Advanced Mechanical Layout, 4 Credits

Prerequisite(s):
Level: Lower
This course will address advanced layout techniques and practices that are typical in the design industry. Students will be presented with design concepts and will use problem solving techniques to accomplish tasks. The course includes the study of power transfer systems such as couplings, chain and sprocket drives, and the use of motors and bearings. Instruction in the application of clutches, and their uses in machine design, will also be stressed.

DCAD 4003 - Senior Project, 3 Credits

Prerequisite(s):
Level: Lower
This course shall be considered a capstone project for the authentic assessment of the curriculum. he student shall select a project that shall challenge the student and demonstrate various abilities and skills acquired in their previous classes. This project shall include an oral presentation along with a written report and a demonstration of their chosen project. This demonstration may include all associated drawings, a finished part of their design, and an electronic "slide show". This course is designed as a research/lab course to design/improve a consumer product. Instructor shall supply minimal guidance in the development of this project.

DCAD 4125 - Process Piping I, 5 Credits

Prerequisite(s):
Level: Lower
This course will facilitate the concepts and principals employed by drafters in the Industrial Process Piping industry. Using practical laboratory application with topics including flow diagrams, orthographic and isometric spool drawings, plan & elevation piping arrangements, selection of valves, pipe racks and supports. Students will generate a variety of accurate CAD piping assignments similar to the ones currently used in industry today.

DCAD 4155 - Technical Illustration, 5 Credits

Level: Lower
In this course students will master isometric exploded view technical illustration, including such topics as applications, pictorial selections, and illustration techniques. In addition students will learn about basic printing process, scaling artwork for press runs and coordinating with printing firms. The student will also supply complete assembly instructions (sequence of operations) explaining how this job is put together and functions.

DCAD 4215 - Commercial Print Techniques, 5 Credits

Level: Lower
Introduction to commercial print techniques. This course builds and adds on to computer commercial art. It is now necessary that the student take the material and information he/she has learned to the next level. Field trips to industry and local print shop are important so that the student receives a thorough understanding of the whole technical illustration process for an idea for a final printed piece.

DCAD 4225 - Process Piping II, 5 Credits

Prerequisite(s):
Level: Lower
This course will include the necessary theory and laboratory application in the design of chemical processing plant layout. Calling upon skills developed in prerequisite coursework, in addition to Industrial Process Piping Plant Layout standards, students will create an actual CAD model of a plant that they have designed for a comprehensive understanding of piping plant design.

DCAD 4315 - Isometric Exploded Views, 5 Credits

Level: Lower
After a thorough understanding of all technical illustration concepts and techniques, the student is now required to master isometric exploded view technical illustrations. The student must be able to supply a complete component list with each illustration. The student must also supply complete assembly instructions (sequence of operations) explaining how this job is put together and functions. Each completed job must be press ready.

DCAD 4335 - CNC Machine Programming, 5 Credits
Level: Lower
Through the use of standard industrial codes and formulas to write computer programs that will enable CNC machining centers and CNC turning centers to produce parts, within quality standards. To be able to write these CNC programs both from scratch and with the use of commercially available CNC programming software.

DCAD 4900 - Directed Study, 1 to 9 Credits
Level: Lower
By arrangement with advisor. Directed study is to provide an opportunity for the student to continue study in a subject area of special interest or special concern, related directly to an actual job opportunity within the drafting curriculum.

ECONOMICS

ECON 1013 - Macroeconomics, 3 Credits
Level: Lower
Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science
Macroeconomics is concerned with obtaining an overview of the basic sectors of the economy such as households, businesses, and government. In analyzing the economy we deal with such factors as total output, total levels of employment, and the general level of prices. Topics covered include the nature and method of economics, supply and demand, measuring domestic output, national income, and the price level, aggregate demand and supply, and fiscal and monetary policy.

ECON 2023 - Microeconomics, 3 Credits
Level: Lower
Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science
Microeconomics deals with the behavior of specific economic units such as individual households, industries, or firms within an industry. Topics covered include the nature and method of economics, demand and supply analysis, consumer behavior, price and output determination under various degrees of competition, and production and the demand for resources.

ECON 2900 - Directed Study, 1 to 4 Credits
Level: Lower
This course allows students who have successfully completed an economics course to continue study in that subject. A student may contract for one to four credit hours. However, directed study may be contracted by a student only with the approval of the directing instructor and the department chairperson.

ECON 4900 - Directed Study, 1 to 6 Credits
Level: Lower
A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chair. The instructor and student will confer regularly regarding the process of the study.

ECON 5133 - Territry & Entrprnrshp: trdtn,, 3 Credits
Prerequisite(s): ECON 1013 with D or better or ECON 2023 with D or better
Level: Upper
The course aims to analyze the relationship between sustainability, economy, quality and globalization. It will also focus on the European Union and sustainable development. Other included topics will be: food industry in Italy (especially in the Campania region), organic farming in Italy, "local food, local market, local business" and sustainable tourism in Ital.

EDUCATION

EDUC 2013 - Educational Psychology, 3 Credits

Level: Lower
Course Attributes: Gen Ed - Social Sciences
A study of the psychological principles and research as applied to learning, teaching, and classroom organization. Content of the course will include theories of learning and teaching, characteristics and individual differences of students, the effective learning environment, and evaluation and measurement of student achievement. The potential teacher will learn how to be an effective problem solver in the educational environment.

EDUC 2163 - Foundations of Education, 3 Credits

Level: Lower
The course examines the social, historical, ethical and philosophical foundations of the U.S. educational system. Attention also will be paid to contemporary educational opportunities and challenges including the evolving teaching role, school equity and funding, educational standards and assessment, classroom diversity and multicultural education, social justice, and reform initiatives.

EDUC 2900 - Directed Study, 1 to 4 Credits

Level: Lower
This course allows students who have successfully completed an education course to continue study in that subject. A student may contract for one to four credit hours. However, directed study may be contracted by a student only with the approval of the directing instructor and the department chairperson.

ELECTRICAL ENGI TECH

ELET 1001 - Seminar, 1 Credit

Level: Lower
An examination of strategies for success, including organizational and study skills, and transfer and career opportunities for engineering technology students in industry. There will be at least a dozen textbook and research readings followed by written assignments on topics to include the variety of engineering transfer institutions and engineering majors, diversity in society and the technical workplace, personal assessments of goals, values, strengths and weaknesses as related to student and technical career success, and employment application techniques such as resume writing, letters of application, interviewing and follow-up communications. Research assignments use library and Internet as resources and all written assignments are generated by computer.

ELET 1003 - Intro to Comp Hardware & Troub, 3 Credits

Level: Lower
This course provides an introduction to computer hardware and troubleshooting and an introduction to operating systems. It serves as a foundation for the computer/electronic technician to build on. The knowledge and skills obtained in this course will prepare the student for the CompTIA A+ Certified Computer Technician Hardware and Operating Systems exams.

ELET 1102 - Into Comp Hrdware & Trbleshtng, 2 Credits

Corequisite(s):
Level: Lower
This course provides an introduction to computer hardware and troubleshooting and an introduction to operating systems. It serves as a foundation for the electronic technician to build on. The knowledge and skills obtained in this course will prepare the student for the CompTIA A+ Certified Computer Technician exam.

ELET 1103 - Circuit Theory I, 3 Credits

Prerequisite(s): MATH 1033 with D or better or MATH 1054 with D or better or MATH 1063 with D or better or MATH 1084 with D or better or MATH 2043 with D or better
Corequisite(s): MATH 2043
Level: Lower
In circuit theory, a student will analyze electrical circuits according to the fundamental

definitions and laws as they apply to direct current circuits. The physical parameters defined include charge, voltage, current, resistance, capacitance and inductance. The laws applied include Ohm's Law, Joule's Law, Kirchhoff's Voltage Law, and Kirchhoff's Current Law. The analysis relies on algebra and exponentials. A required recitation is included as a group problem solving session.

ELET 1104 - Circuit Theory I, 4 Credits

Prerequisite(s): MATH 1033 with D or better or MATH 1054 with D or better or MATH 1063 with D or better or MATH 1084 with D or better or MATH 2043 with D or better
Level: Lower
In circuit theory, a student will analyze electrical circuits according to the fundamental definitions and laws as they apply to direct current circuits. The physical parameters defined include charge, voltage, current, resistance, capacitance and inductance. The laws applied include Ohm's Law, Joule's Law, Kirchhoff's Voltage Law, and Kirchhoff's Current Law. The analysis relies on algebra and exponentials. A required recitation is included as a group problem solving sessions.

ELET 1111 - Digital Logic Laboratory, 1 Credit

Prerequisite(s): ELET 1133 with D or better
Corequisite(s):
Level: Lower
This laboratory implements the theoretical principles of ELET 1133, Digital Logic. Students learn to build working circuits based upon design goals. Logic solutions utilize transistor-transistor logic (TTL) integrated circuits, simulation software and programmable logic devices (PLD).

ELET 1133 - Digital Logic, 3 Credits

Corequisite(s):
Level: Lower
Digital Logic introduces a student to two-state logic. Logic analysis will use the binary number system and Boolean algebra. Both combinational (AND-OR) logic and sequential (flip-flop) logic are studied. Typical logic designs include 7-segment displays, adders, multiplexers, and counters. Logic designs are implemented using simulation, programmable logic devices and transistor-transistor logic.

ELET 1143 - Electronic Fabrication, 3 Credits

Corequisite(s):
Level: Lower
The fundamentals of prototype design, fabrication, and documentation will be covered. Major topics include: safety, sheet metal fabrication, printed circuit board design and fabrication, schematic and wiring diagram drafting and analysis, computer applications for schematic drawing and printed circuit board layout, circuit construction, troubleshooting fundamentals, soldering techniques and project parts procurement and cost analysis.

ELET 1151 - Circuit Theory Laboratory, 1 Credit

Corequisite(s): ELET 1104
Level: Lower
Laboratory experiments parallel material presented in ELET 1103. The theories and laws governing dc circuits are applied and verified. Hands-on building of electrical circuits reinforces the interpretation of schematic diagrams. Verification includes detailed analysis of the circuit under test by calculation, measurement, and simulation. Outside preparation and laboratory report writing are required.

ELET 1201 - Intro to Engineering Tech Lab, 1 Credit

Level: Lower
This laboratory runs concurrently with BSET 8003, Introduction to Engineering Technology course. This is an introductory course related to the field of electrical engineering technology. Laboratory topics introduce the students to the fundamental electrical principles and practices. The student will be introduced to various electrical components such as resistors, capacitors, inductors, diodes, LEDs, transistors, and integrated circuits. Analog and digital meters will be used for measuring electrical quantities, such as resistance, voltage, and current, in electrical circuits. Circuit construction and operation, reading schematic diagrams, computer applications for schematic drawing and simulation, familiarization with electrical

tools and fabrication, and soldering techniques will also be introduced.

ELET 1202 - Intro to Electrical Eng Tech, 2 Credits

Level: Lower

This is an introductory course related to the field of electrical engineering technology. Laboratory topics introduce the students to the fundamental electrical principles and practices. The student will be introduced to various electrical components such as resistors, capacitors, inductors, diodes, LEDs, transistors, and integrated circuits. Analog and digital meters will be used for measuring electrical quantities, such as resistance, voltage, and current, in electrical circuits. Circuit construction and operation, reading schematic diagrams, computer applications for schematic drawing and simulation, familiarization with electrical tools and fabrication, and soldering techniques will also be introduced.

ELET 2012 - Intro to Computer Networks, 2 Credits

Prerequisite(s): ELET 1102 with D or better

Level: Lower

This course provides an introduction to computer networks. It serves as a foundation for the computer/electronic technician to build on. The knowledge and skills obtained in this course will prepare the student for the CompTIA Network + exam.

ELET 2103 - Electronic Theory I, 3 Credits

Prerequisite(s): ELET 1103 with D or better

Level: Lower

A study of solid state devices, including diodes, bipolar transistors, and field effect transistors. Includes the theory of operation, biasing, stabilization, frequency response, distortion, and gain using mathematical analysis, equivalent circuits, and computer models.

ELET 2123 - Circuit Theory II, 3 Credits

Prerequisite(s): ELET 1103 with D or better

Level: Lower

A continuation of Circuit Theory I. The emphasis is on the electrical principles, laws, and theorems applicable to sinusoidal ac circuits. Complex number notation is used to evaluate ac circuits. Topics include ac power, resonance, polyphase circuits and transformers.

ELET 2124 - Electrical Power Circuits, 4 Credits

Prerequisite(s): (ELET 1104 with D or better and MATH 2043 with D or better) or (ELET 1103 with D or better and MATH 2043 with D or better)

Level: Lower

Why is imaginary power so expensive? This course requires students to mind their P's and Q's (real and reactive power). Students will build upon circuit theory concepts as they apply to alternating current using phasor analysis. Complicated networks are analyzed using mesh and nodal matrix methods. MATLAB is introduced as a computational tool. The course emphasis is upon ac power applications including transformers and three-phase systems. Laboratory sessions will back up the analysis with hands on exercises using electronic instrumentation.

ELET 2143 - Embedded Controller Fundmtls, 3 Credits

Prerequisite(s): ELET 1111 with D or better and ELET 1133 with D or better and ELET 1143 with D or better

Corequisite(s):

Level: Lower

Fundamentals of both the hardware and software aspects of the microcontroller. A RISC (reduced instruction set computer) microcontroller is used with an in-system programmer to create an engineering development system. Structured programming code is written in assembly language, assembled and downloaded to the controller. Switches, light emitting diodes, seven segment displays, pneumatic solenoids and motors are among the devices that will be connected to the controller.

ELET 2151 - Electronics Laboratory I, 1 Credit

Corequisite(s): ELET 2103

Level: Lower

The material in this course parallels and supplements the subject matter in ELET 2103. The use of appropriate electronic test equipment is emphasized, along with computer simulation,

and computer aided test equipment.

ELET 2153 - Intro to Microelectronics, 3 Credits

Prerequisite(s): ELET 1143 with D or better
Level: Lower
This course will provide an overview of the fabrication and operation of silicon-based integrated circuits including resistors, diodes, transistors and their current-voltage (I-V) characteristics. Laboratory exercises teach the basics of IC fabrication and I-V measurements. Oxidation/diffusion, photolithography (spin/bake/expose/develop), etch, and vapor deposition equipment allow students the opportunity to design, build, and test simple solid-state devices.

ELET 2163 - Data Communications, 3 Credits

Level: Lower
This course provides a comprehensive overview of the converging world of computers and telecommunications. It introduces basic building blocks of telecommunications and most current information on new technologies. It provides an in-depth knowledge of communications fundamentals, data networking, next generation networks, wireless networks, IP protocols, IP telephony, VPN, Digital video and TV standards, optical networking and broadband networking.

ELET 3103 - Electronics Theory II, 3 Credits

Prerequisite(s): ELET 2103 with D or better
Corequisite(s): ELET 3151
Level: Lower
This course concentrates on the theory and application of operational amplifiers. The gain, frequency response, and impedance of inverting and non-inverting amplifiers are analyzed in detail. Different feedback circuits are studied to realize basic mathematical operations such as summing, integration and differentiation. Operational amplifier topologies are then used to design filters, oscillators, communications circuits and regulated power supplies.

ELET 3143 - Intn Desktop OS in Netwrk Dsgn, 3 Credits

Prerequisite(s): ELET 1003 with D or better
Level: Lower
This course will introduce current workstation operating systems technologies. The course will include client-side networking technologies and will be an intensive, hands-on, in-depth study of design and integration of current workstation operating systems in an enterprise environment. Laboratory activities will include the installation, configuration, and support of workstation operating system hardware, software, and network connectivity not only on a single server based LAN system, but will also cover tools and techniques for design and support of a large networking system. Students will design, plan and deploy technical support of workstation hardware, operating system, and network connectivity. The design of Microsoft's latest workstation operating system will be thoroughly examined. Students will be prepared to take an appropriate workstation operating system professional certification exam upon course completion.

ELET 3144 - Embedded Controller Applictns, 4 Credits

Prerequisite(s): ELET 2143 with D or better
Level: Lower
This course is the second sequence in the study of embedded controllers. The total capability of the microcontroller will be developed. Topics will include: serial and engineering evaluation board to the embedded controller. Parallel communications using devices like: liquid crystal displays, printers and IR (infra red) remote controls - data acquisition using the built in analog to digital converter - motor control using stepper motors. Stepper motors are widely used in devices like printers, robotics and laboratory test equipment. Projects will be programmed using "C++" as well as assembly language. The course will conclude with a project using an embedded controller module. A typical project is a Mobile Autonomous Robotic System (MARS).

ELET 3151 - Electronics Laboratory II, 1 Credit

Prerequisite(s): ELET 2103 with D or better
Corequisite(s): ELET 3103
Level: Lower

This laboratory is an experimental study of operational amplifiers and linear integrated circuits as applied to comparators, amplifiers, waveform generations, signal conditioning, and regulated power supplies. Emphasis is placed on design, proper measuring techniques and documentation of results. Device characteristics and limitations will be studied. The use of manufacturer's data sheets is required. Computers are used to design, analyze and test circuits along with manual measuring techniques.

ELET 3444 - Electronic Communications I, 4 Credits

Prerequisite(s): ELET 2103 with D or better and (MATH 2043 with D or better * or MATH 1084 with D or better * or MATH 2043 with D or better or MATH 1054 with D or better)
Level: Lower
Offers the study of analog and digital communication concepts and systems. Students begin by learning the terminology and measurements of the communications industry. The course includes analysis of AM and FM transmission and reception, data communications, and transmission lines. Emphasis is on a systems approach with block diagrams and study of the concepts within each block. The associated laboratory tests and demonstrates the lecture theory. Students investigate a chosen application further in an individual project.

ELET 4114 - Network Management, 4 Credits

Prerequisite(s): ELET 2012 with D or better *
Corequisite(s):
Level: Lower
A course in networking technology covering the management, troubleshooting and administration of the network operating system and infrastructure portion of LAN (Local-Area-Network) systems.

ELET 4143 - Electrical Machines & Controls, 3 Credits

Prerequisite(s): ELET 1103 with D or better
Level: Lower
Study of the principles and applications of dc and ac rotating machines and associated protective and control equipment. Basic functions such as control of motor speed and direction of rotation and basic PLC programming are laboratory projects. Servo and stepper motors for motion control are examined.

ELET 4154 - Microelectronics, 4 Credits

Prerequisite(s): ELET 1143 with D or better and ELET 1103 with D or better
Level: Lower
This course provides the student with a realistic experience in semiconductor manufacturing processes. Oxidation/ diffusion, photolithography (spin/bake/expose/develop), etch, and vapor deposition equipment allow students the opportunity to design, build, and test simple solid-state devices.

ELET 4164 - Electrical Power Systems, 4 Credits

Prerequisite(s): ELET 2123 with D or better
Level: Lower
The principles of generation and distribution of three-phase power is studied. Emphasis is placed on the study of the traditional 4wire, 3phase and 3wire, 3phase systems. Load flow and short circuit calculations are included. Emphasis is placed on the operation of existing systems. The laboratory is used to reinforce the theory taught in the classroom. Field trips to local power company facilities are mandatory.

ELET 4174 - Network Infrastructure Essenti, 4 Credits

Level: Lower
Students will learn the basics of telecommunications and network cabling and wiring devices, as well as suggested best practices and safety issues. The students, through hands-on activities and labs, will learn to install horizontal (work area) and backbone cable. This hands-on, lab-oriented course stresses documentation, design, and installation issues, as well as laboratory safety, on-the-job safety, and working effectively in group environments. This course prepares students for the Panduit Authorized Installer (PAI) certification.

ELET 4224 - Alternative Energy Generation, 4 Credits

Prerequisite(s):
Level: Lower
The purpose of this course is to provide students with a realistic look at the potential and the limitations of electrical generation through energy conversion. The energy sources include solar, wind and water. The course will include semiconductor properties of photovoltaic cells and the electronic circuits necessary for energy conversion. Using trigonometry, students will be able to calculate the position of the sun at any time or place and calculate the energy available at different panel orientations. Students will have the beginning tools to design off-grid and on-grid photovoltaic energy systems. MATLAB and LabVIEW software will be used to analyze and measure the solar resource.

ELET 4234 - Server OS in Network Design, 4 Credits
Prerequisite(s): ELET 3143 with D or better
Level: Lower
This course will introduce server-side operating system networking technologies. It will be an intensive, hands-on, in-depth study of design of current server operating systems in a LAN (Local Area Network) environment. Laboratory activity will include design, development, configuration, and placement of servers and services. Students will design, plan and deploy technical support of server hardware, operating system, and network connectivity. The design of Microsoft latest server operating system will be thoroughly examined. Students will be encouraged to take an appropriate server operating system professional certification exam upon course completion.

ELET 4900 - Directed Study, 1 to 6 Credits
Level: Lower
A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. he student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

ELET 5004 - Electrical Power Systems, 4 Credits
Prerequisite(s): ELET 1103 with D or better and MATH 2043 with D or better
Level: Upper
Electrical principles, laws, theorems and complex notation applicable to AC circuits. Principles of generation and distribution of single and three phase power. Load flow and short circuit analysis.

ELET 5224 - Advanced Microprocessor Sys, 4 Credits
Prerequisite(s): ELET 1102 with D or better
Level: Upper
The course will be an in-depth study of current micro- computer workstation operating systems in an enterprise environment. The course will include client-side networking technologies as well. Laboratory activity will include the installation, configuration, and support of workstation operating system hardware, software, and network connectivity not only on a single system, but will also cover tools and techniques for support of a large system base. The course will prepare the student for an appropriate workstation operating system certification examination.

ELET 5234 - Design Network Directory Servs, 4 Credits
Prerequisite(s): ELET 3143 with D or better
Level: Upper
This course teaches students through lectures, discussions, demonstrations, textbook exercises, and lab projects the skills and abilities necessary to design directory service and network infrastructure that meet the technical and business requirements of an organization. It provides in-depth knowledge and hands-on experience of design of directory service and its installation, configuration and administration in a multiple-server, multiple-domain, multiple operating system, enterprise LANs and WAN environments. Understanding the design process, the required components, and the integration of technologies are key elements in this course. This course covers networking directory services terminology, national and international standards relating to networks, the fundamentals of network transmission methods, network topologies, network protocols, and network architecture. The completion of laboratory projects will develop the student's professional skills in network directory service design and implementation. This will lead to further study of networking or employment. Each

lab is structured as a team project which will enhance the student's ability to function in a design team.

ELET 5401 - Certification Seminar, 1 Credit

Prerequisite(s): ELET 5224 with D or better
Level: Upper
Individualized hands-on practice and review session for Microsoft Certified System Engineer(MCSE)and Cisco Certified Network Associate (CCNA)professional exams, as well as other appropriate certifications.

ELET 5414 - Network Design & Implmntation, 4 Credits

Prerequisite(s): ELET 5224 with D or better
Level: Upper
This course teaches students through lectures, discussions, demonstrations, textbook exercises, and labs the skills and abilities necessary to design an Active Directory and network infrastructure that meets the technical and business requirements of an organization. Understanding the design process, the required components, and the integration of technologies are key elements in this course. This course also covers networking terminology, national and international standards relating to networks, the fundamentals of network transmission methods, network topologies, network protocols, and network architecture. The course will also include the hardware, design and configuration, troubleshooting and administration of the directory services and network infrastructure portion of LAN and WAN (Local-Area- Network and Wide-Area-Network) systems. The completion of laboratory projects will develop the student's professional skills in network design and implementation. This will lead to further study of networking or employment. Each lab is structured as a team project which will enhance the student's ability to function in a design team.

ELET 5900 - Directed Study, 1 to 6 Credits

Level: Upper
A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

ELET 6004 - Advanced Power Systems, 4 Credits

Prerequisite(s): ELET 5004 with D or better
Level: Upper
This course continues from ELET 5004 with studies of electrical power transmission lines, transformers, per unit calculations, synchronous generators, and power flow analysis. Further topics for analysis include economic dispatch and power marketing. Renewable and alternative energy sources are evaluated as part of the supply mix. Power conversion is another topic with the analysis of dc-dc converters.

ELET 6014 - Microelectromechanical Systems, 4 Credits

Prerequisite(s): ELET 2153 with D or better or ELET 4154 with D or better
Level: Upper
This course will provide an opportunity for the student to become familiar with the technology and applications of microelectromechanical systems. This is one of the fastest growing areas in the semiconductor business. Today's applications include accelerometers for air bag deployment, pressure sensors, flow sensors, optical systems and micromotors. Emphasis is on the different technologies compared to the standard semiconductor processing technologies. The lecture provides necessary understanding of the various process technologies used to fabricate MEMS devices. The Laboratory allows the students to design a MEMS device, design a process to fabricate the device and make and test a MEMS device.

ELET 6224 - Switching & Power Electronics, 4 Credits

Prerequisite(s): ELET 2103 with D or better
Level: Upper
Design and analysis of linear and switching regulators and power converters using state-of-the-art components and devices. Topics to be covered will include: basic building blocks of modern power supply systems; circuits for the generation and processing of pulse

and switching waveforms; transistor, rectifier, IC, transformer, inductor, capacitor, and resistor selection; thermal design considerations, feedback and stability analysis; RFI considerations.

ELET 6234 - Designing Scalable Internetwks, 4 Credits

Prerequisite(s): ELET 7204 with D or better
Level: Upper
This course will be an intensive, hands-on, in-depth study of designing scalable internetworks in a Wide Area Network (WAN) environment. Laboratory activity will include designing, deployment, configuration, analysis and production of complete projects consisting of scalable internetworks and services to include EIGRP, OSPF, IS-IS, Route Optimization, BGP, IP Multicasting and IPv6. Students will be encouraged to take an appropriate Cisco professional BSCI certification exam upon course completion.

ELET 6244 - Design Multilnyrd Switch Ntwks, 4 Credits

Prerequisite(s): ELET 7204 with D or better
Level: Upper
This course will be an intensive, hands-on, in-depth study of designing multilayered switched network in a Wide Area Network (WAN) environment.Laboratory activity will include designing, deployment, configuration, analysis and production of completed projects consisting of multilayered switches and services to include wired LANs, VLANs and wireless LANs. Students will be encouraged to take an appropriate Cisco professional BCMSN certification exam upon course completion.

ELET 6404 - WAN Systems, 4 Credits

Prerequisite(s): ELET 5224 with D or better
Level: Upper
This course covers the installation, configuration and administration of multiple-server, multiple-domain, multiple operating system, enterprise LAN and WAN (Local-Area-Network and Wide-Area-Network). It will include remote monitoring and administration of the network resources using Group Policies and other tools. Applications will include support services such as DHCP and DNS integration into directory services for an enterprise network.

ELET 7104 - Integrated Circuit Technology, 4 Credits

Prerequisite(s): MATH 1063 with D or better or MATH 1084 with D or better
Level: Upper
This course is an introduction to the physics, chemistry and materials of integrated circuit fabrication. Topics include the basic process steps of crystal growth, oxidation, photolithography, diffusion, ion implantation, chemical vapor deposition (CVD) and metallization used to build integrated circuits. The laboratory uses a 4-level metal gate PMOS process to fabricate a working integrated circuit test-chip and provide experience in device design, process design, materials evaluation, in-process characterization and device testing.

ELET 7204 - Routing and Switching, 4 Credits

Prerequisite(s): ELET 3143 with D or better
Level: Upper
This is a course in network infrastructure concentrating on switch and router configuration and operation to support both LAN and WAN environments. In addition to the fundamentals of routing protocols, topics will include subnetting, VLSM, EIGRP and OSPF routing protocols, packet monitoring and filtering, VLAN configuration, Network Address Translation (NAT), Wireless LANs, IPv6, Voice over IP and security implementation. The laboratory component is hands-on in a multiple router-multiple switch environment. The completion of laboratory projects will develop the student's professional skills in switch and router configuration and operation. This will lead to further study or employment. A research-based team paper and presentation on future trends in routing and switching will be required as part of this course.

ELET 7244 - Design Network Serv Architectr, 4 Credits

Prerequisite(s): ELET 7204 with D or better
Level: Upper
This course covers the concepts and skills needed to design an intermediate network infrastructure that supports network solutions incorporating intelligent network services to achieve effective performance, scalability and availability. Students will design networks that include Quality of Service (QoS), security, network management, routing protocols

optimization, switching structures and IP multicast. Laboratory activities will include case studies to design, develop, install, configure and analyze performance of networks. Students will be encouraged to take an appropriate Cisco professional certification exam upon course completion (i.e. CCDP-ARCH).

ELET 7404 - Embedded & Real Time Systems, 4 Credits

Prerequisite(s): ELET 2143 with D or better and CISY 5123 with D or better
Level: Upper
This course prepares the students for the design and implementation of a real-time operating system (RTOS) on an embedded microcontroller. The course is constructed around a project where each student is required to design and prototype a real-time traffic light using MicroC/OS-II operating system loaded on a PIC18F452 microcontroller. The lecture portion of the course is comprised of lectures and quizzes that support the course project. Lecture topics include basic characteristics of the real-time applications and real-time operating systems, hardware interfacing techniques, fixed and dynamic priority scheduling algorithms, concurrency theory, intertask communication, synchronization, response-time analysis, Petri-net modeling, fixed-point computations, and optimization. The lab portion of the course consists of labs that provide the building blocks of the course project. Upon completion of the course project students will compare MicroC/OS-II with other similar operating systems such as FreeRTOS and Salvo.

ELET 7424 - Signal Processing, 4 Credits

Prerequisite(s): ELET 3103 with D or better and (MATH 4114 with D or better or MATH 5014 with D or better)
Level: Upper
This course includes both analog and digital signal processing topics and the pros and cons of each methodology. In the analog arena, operational amplifier circuits will be studied as they apply to various signal processing functions and to active filters. Concentration will be on higher-order active filters and current circuit implementations. Extensive use will be made of circuit simulation software and computer-controlled test equipment. In the digital arena, the characteristics of sampled signals will be examined and various digital filter implementations will be studied. Considerable hands-on work will be done using data acquisition cards and sound cards installed in a computer workstation.

ELET 8214 - Circuit Des & Implementation, 4 Credits

Prerequisite(s): ELET 2103 with D or better and (MATH 4114 with D or better or MATH 5014 with D or better)
Level: Upper
Calculus-based circuit theory includes representation of ideal and non-ideal characteristics of circuit elements. Circuit analysis using fundamental circuit laws, network theorems and standard engineering complex variable notation.Transistor circuits are modeled using realistic parameters including junction capacitances and internal noise generation. Circuit models are applied to amplifier designs for low noise, high frequency response, etc. Laboratory implementation is compared to mathematical models, computer simulation, general purpose interface bus testing and discrepancies are resolved.

ELET 8234 - Local Area Network Systems, 4 Credits

Prerequisite(s): ELET 5224 with D or better
Level: Upper
This course will be an intensive, hands-on, in depth study of current server operating systems in a LAN (Local Area Network) environment. The course will include an introduction to server-side networking technologies as well. Laboratory activity will include installation, configuration administration, and technical support of server hardware, operating system, and network connectivity. Students will be encouraged to take an appropriate server operating system professional certification exam upon course completion.

ELET 8404 - LAN & WAN Applications, 4 Credits

Prerequisite(s): ELET 8234 with D or better
Level: Upper
Installation, configuration and administration of LAN and WAN (Local-Area-Network and Wide-Area-Network) based applications. Applications will include E-mail, database, Internet and Broadband Internet Connections, Wireless LANs, Intranet servers, system support

services, Security and Voice Over Frame Relay, ATM and IP. Advanced hardware and network configurations such as clustering and multi-homing for fault-tolerance and performance will be examined.

ELET 8706 - ECET Internship, 6 Credits

Level: Upper

Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of educational experiences under direct supervision of an owner, manager or supervisor of technology in an organization. Each intern will be supervised by a member of the faculty. Written and oral reports and a journal of work experience activities will be required. Evaluation will be based on the quality of experiences gained from the internship. Students will be required to complete a series of 4 brief investigative or evaluative papers while completing the internship in areas such as career development, organizational structures, organized labor, business management, security, policies, and/or industry and market trends. At the end of the internship students will be required to give an oral presentation to the faculty about their internship experiences.

ELET 8712 - ECET Internship, 12 Credits

Level: Upper

Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of educational experiences under direct supervision of an owner, manager or supervisor of technology in an organization. Each intern will be supervised by a member of the faculty. Written and oral reports and journal of work experience activities will be required. Evaluation will be based on the quality of experiences gained from the internship. Students will be required to complete a series of 4 brief investigative or evaluative papers while completing the internship in areas such as career development, organizational structures, organized labor, business management, security, policies, and/or industry and market trends. At the end of the internship students will be required to give an oral presentation to the faculty about their internship experience.

ELECTRICAL/ELECTRONICS

ELTR 1113 - Intro Micro Comp Software Th, 3 Credits

Corequisite(s): ELTR 1123

Level: Lower

This course is designed to teach the student to be proficient with word processing, presentation and web publishing software. Study will be focused on how to create, manipulate, save and transfer documents. Study will also include migration of document types between software packages.

ELTR 1123 - Int Micro Comp Software Lab, 3 Credits

Corequisite(s): ELTR 1113

Level: Lower

This course is designed to teach the student to be proficient with word processing, presentations, and web publishing software. Students will be creating, editing and merging documents with word processing and web publishing software. Students will be designing web pages while integrating documents between word processing and presentation software packages. All students will take the Microsoft Word MOUS certification upon completion of this course.

ELTR 1133 - Spreadsheet/DBase Appl Th, 3 Credits

Corequisite(s): ELTR 1143

Level: Lower

This course is designed to prepare the student to enter the employment field with spreadsheet and data base knowledge. Students will learn to use spreadsheet and data base software to create, modify, save and transfer documents. Students will be introduced to time management and e-mail software.

ELTR 1143 - Spreadsheet/DBase Appl Lab, 3 Credits

Corequisite(s): ELTR 1133

Level: Lower

This course is designed to prepare the student to enter the employment field with spreadsheet and database knowledge. Students will learn to use spreadsheet and database

software to create, modify, save and transfer documents. Students will be introduced to time management and e-mail software.

ELTR 1153 - Introduction to Electricity Th, 3 Credits

Corequisite(s): ELTR 1163
Level: Lower
This course is designed to prepare the student to enter the employment field with an introductory understanding of electrical theory. Students will learn concepts of how to construct, measure, and troubleshoot DC and AC circuitry. Other items include resistor color code, related mathematics, and test equipment usage.

ELTR 1156 - Residential Wiring I, 6 Credits

Corequisite(s): ELTR 1166 ELTR 1176
Level: Lower
This lecture course introduces a student to the theories, principles, and laws of static and dynamic electricity. Direct and alternating current circuits are studied utilizing the related trade mathematics covering topics such as Ohm's law, resistance, power, inductance, and capacitance. Major emphasis is placed on applying trade related mathematics and analytical reasoning to troubleshooting series, parallel and compound circuits. National Electrical Code requirements and proper techniques for soldering/terminating conductors are covered. Students will learn to interpret and draw electrical schematics and wiring diagrams relating to low voltage signal circuits. The National Electrical Code and its application to residential branch circuit requirements and non-metallic wiring methods as well as correct electrical and component terminology is introduced.

ELTR 1163 - Intro to Electricity Lab, 3 Credits

Corequisite(s): ELTR 1153
Level: Lower
This course is designed to prepare the student to enter the employment field with introductory electrical skills. Students will construct, measure and troubleshoot DC and AC circuitry. Other items include resistor color code usage, applied mathematics and use of test equipment.

ELTR 1166 - Residential Wiring Lab IA, 6 Credits

Corequisite(s): ELTR 1156 ELTR 1176
Level: Lower
Students will apply techniques learned in theory required to make proper terminations and soldered splices. Alternating and direct current circuits are constructed and students will analyze and confirm electrical principles and applicable laws. Emphasis is placed on safety, craftsmanship, correct, and accurate laboratory test procedures using appropriate test equipment such as Volt- Ohm-Milliampere Meters (VOM). Schematic drawings are required for each circuit and outside of lab, report and analysis writing is necessary.

ELTR 1176 - Residential Wiring Lab IB, 6 Credits

Corequisite(s): ELTR 1156 ELTR 1166
Level: Lower
Students receive hands-on training in the fundamentals of low and line voltage circuit construction. An emphasis is placed on safety, craftsmanship, NEC requirements, circuit planning, and circuit layout using the appropriate cable wiring methods. The correct selection and terminology of electrical components used for assigned circuits is required. Students will also demonstrate proper troubleshooting methodology and usage of test equipment required to find faults and repair electrical circuits. Time will be spent working on actual job sites. Schematic and wiring diagrams are required for each circuit and outside of lab, report and analysis writing is necessary.

ELTR 1501 - Appl Troubleman Prin II, 1 Credit

Level: Lower
This course is designed for the Lineman or Cableman who wishes to pursue a career in the Electrical Trouble and Maintenance Department of an electric utility. Its intent is to ensure a base of knowledge in math and electricity that will allow the student to thrive in more rigorous future coursework in cable testing, fault locating, and troubleshooting techniques. Knowledge of electric distribution systems is assumed.

ELTR 1502 - Appl Troubleman Principles I, 2 Credits

Level: Lower

This course is designed for the Lineman or Cableman who wishes to pursue a career in the Electric Trouble and Maintenance Department of an electric utility. Its intent is to ensure a base of knowledge in math and electricity that will allow the student to thrive in more rigorous future coursework in cable testing, fault locating, and troubleshooting techniques. Knowledge of electric distribution systems is assumed.

ELTR 1503 - Appl Skills for Substations, 3 Credits

Level: Lower

This course is designed to teach the student fundamental principles of electrical theory, related mathematics and an understanding of electrical schematics used in the electric utility industry.

ELTR 1505 - Appl Prin of Elec Substations, 5 Credits

Level: Lower

This course teaches substation electricians the skills and knowledge necessary for upgrading and improving electric substation reliability in the electric utility industry.

ELTR 1506 - Appl Basic Lineman Prin I, 6 Credits

Level: Lower

This course is designed to teach students the basic skills used by lineman in the transmission and distribution of electrical energy for the electric utility industry.

ELTR 1513 - Ap Prc Ovhd Trns Mtnc HS Ln Ms, 3 Credits

Level: Lower

This course is designed to teach the safe work methods used during the maintenance of a transmission system. This course requires extensive work with heavy conductors and materials used in 34kV and 115kV transmission circuits. The student will also learn how to perform energized maintenance work using hot sticks.

ELTR 1514 - Intro to Electric Substations, 4 Credits

Level: Lower

This course is designed to give new substation personnel the skills necessary to understand, enter and work safely within the substation environment.

ELTR 1523 - Intr to Electric Substations, 3 Credits

Level: Lower

This course is designed to give new substation personnel the skills necessary to understand, enter and work safely within the substation environment. This knowledge is necessary for wiring circuits, troubleshooting breakers, testing and calibrating protective relays.

ELTR 1524 - Substn Mntnce Test Prac III, 4 Credits

Level: Lower

This course is designed to enable new substation personnel to operate and maintain high voltage components of the transmission and distribution systems of electric utilities. This course will also teach students to take and evaluate the condition of transformer insulating oil and use of the oil pump station.

ELTR 1533 - Substn Maintnce & Test Prac IV, 3 Credits

Level: Lower

This course is designed to enable new substation personnel the ability to operate and maintain high voltage components of the transmission and distribution systems of electric utilities. This course will be instructed over a two-week period.

ELTR 2156 - Residential Wiring II, 6 Credits

Prerequisite(s): ELTR 1156 with D or better * and ELTR 1166 with D or better * and ELTR 1176 with D or better *

Corequisite(s): ELTR 2166 ELTR 2176

Level: Lower

Understanding and interpretation of the National Electrical Code requirements for residential branch circuits are covered in detail. Practical considerations for the economic and adequate distribution of electrical energy are discussed, as well as the adequacy of circuit design. Reading and interpreting floor plan drawings as they relate to all trades is taught. Power

calculations along with all N.E.C. and utility company requirements for the installation of any type of residential service are covered. Conduit wiring methods are covered as well as all related National Electrical Code requirements. Substantial time is spent performing the mathematical calculations utilized for designing, laying out and bending conduit. Students are required to perform all tasks in a neat craftsman-like manner. Emphasis is placed on the reasonings of why workmanship is important.

ELTR 2166 - Residential Wiring Lab IIA, 6 Credits

Prerequisite(s): ELTR 1156 with D or better * and ELTR 1166 with D or better * and ELTR 1176 with D or better *
Corequisite(s): ELTR 2156 ELTR 2176
Level: Lower
Substantial time is spent with students working the wiring systems on actual residential homes built off campus. In lab students design, layout, and manufacture every type of bend utilized with conduit raceway systems. Conduit fill calculations are applied as well as utilizing correct methods for installing branch circuit conductors. Students are required to apply the National Electrical Code to all work done in labs and on the outside projects. Major emphasis is placed on safety, craftsmanship, circuit analysis, and troubleshooting of circuit faults. Schematic and wiring diagrams are required for each circuit and outside of lab, report and analysis writing is necessary.

ELTR 2176 - Residential Wiring Lab II B, 6 Credits

Prerequisite(s): ELTR 1156 with D or better * and ELTR 1166 with D or better * and ELTR 1176 with D or better *
Corequisite(s): ELTR 2156 ELTR 2166
Level: Lower
The lab emphasizes the application of the complete wiring system used for residential applications. Students will be required to complete several types of services, such as riser, mast, conduit and cable installations. Students will complete their freshman capstone project, which requires each student to redraw a two story residential home to scale. They will then perform the design work and layout all of the wiring required by the National Electrical Code and ensuring that it will meet the minimum adequacy requirements of a prospective homeowner. Students will then complete a spreadsheet containing all the components with their complete descriptions that are necessary to complete the Capstone project. Schematic and wiring diagrams are required for each circuit and outside of lab, report and analysis writing is necessary.

ELTR 2253 - Intr Wireless Communcation Th, 3 Credits

Prerequisite(s):
Corequisite(s): ELTR 2263
Level: Lower
This course is designed to prepare the student to enter the employment field with introductory wireless communication skills. Students will learn concepts of modulation, voice communications, multiplexing, DTFM, and the structure of telephone exchange. Other areas of study will include satellite, local area wireless, microwave, optical fiber, and wave propagation.

ELTR 2263 - Int Wireless Communcation Lab, 3 Credits

Prerequisite(s):
Corequisite(s): ELTR 2253
Level: Lower
This course is designed to prepare the student to enter the employment field with introductory wireless communication skills. Students will apply entry-level skills of how to evaluate, measure and troubleshoot wireless applications.Other items include applied mathematics and using test equipment.

ELTR 2273 - Computer Repair Theory, 3 Credits

Prerequisite(s): ELTR 2313 with D or better * and ELTR 2323 with D or better *
Corequisite(s): ELTR 2283
Level: Lower
This course is designed to prepare the student to enter employment as a computer repair technician. Students will learn basic computer architecture, construction, maintenance, along

with add-on cards, bus types, and peripherals. Students will also learn basic operating system installation, maintenance, customization, along with hardware driver matching and installation.

ELTR 2283 - Computer Repair Lab, 3 Credits

Prerequisite(s): ELTR 2313 with D or better * and ELTR 2323 with D or better *
Corequisite(s): ELTR 2273
Level: Lower
This course is designed to prepare the student to enter the employment field as a computer repair technician. Students will apply the principles of building and troubleshooting, and maintaining computer systems. Students will also learn basic operating system installation, maintenance, customization, along with hardware driver matching and installation.

ELTR 2313 - Fund of UNIX/Linux Theory, 3 Credits

Prerequisite(s):
Corequisite(s): ELTR 2323
Level: Lower
This course is designed to teach the student to be proficient with UNIX/Linux operating systems including installation, configuration, file systems, and core operating system components. Students will learn how to use the commands to set up and maintain the UNIX/Linux operating system.

ELTR 2323 - Fundamentals of UNIX/Linux Lab, 3 Credits

Prerequisite(s):
Corequisite(s): ELTR 2313
Level: Lower
Use of the UNIX/Linux operating system to install and configure file systems and core operating system components. Students will use commands to set up and maintain the UNIX/Linux operating system.

ELTR 2503 - Appl Basic Lineman Prin II, 3 Credits

Level: Lower
This course is designed to build on the Basic Lineman Principles I course. It continues with the basic theory and begins teachings more advanced hands-on skills used by the lineman in the transmission and distribution of electrical energy in the electric utility industry.

ELTR 3116 - Automated Robotic Equipment, 6 Credits

Prerequisite(s):
Corequisite(s): ELTR 3126 ELTR 3136
Level: Lower
Class lectures cover Industrial Automation and associated equipment. The following topics are covered: manufacturing techniques, computer interfacing (opto isolators, triacs, transistors, p.i.a.'s, a/d's and d/a's, flow charts, programmable logic controllers, pneumatic controls, robotics, operational amplifiers, servo and stepper motors, and mechanical power transmission. The student practices oral communication skills.

ELTR 3126 - Automated Equipment Lab I, 6 Credits

Prerequisite(s):
Corequisite(s): ELTR 3116 ELTR 3136
Level: Lower
Laboratory experiments are based on the topics covered in lecture. The micro-computer or programmable logic controller are used exclusively as the "controller" in the automated system.

ELTR 3133 - Operating Systems Theory, 3 Credits

Prerequisite(s):
Corequisite(s): ELTR 3143
Level: Lower
This course is designed to prepare the student to enter the employment as a computer repair technician. Students learn the internal workings of Microsoft Operating Systems including DOS, Windows 9X, Windows NT, Windows 2000 and Windows XP. Customer service, ethics of a technician's responsibility for customer's data and diagnosis of operating systems are also studied. Students continue to prepare to take the Computer Technology Industry Association's (Comp TIA) A+ Operating System Certification Exam.

ELTR 3136 - Automated Equipment Lab II, 6 Credits

Prerequisite(s):
Corequisite(s): ELTR 3116 ELTR 3126
Level: Lower
The student is part of a team that constructs a completely automated robotic work cell. The team members develop their own design, fabricate, assemble, wire, pipe, construct the controller program and make a complete documentation folder for their project. A PC computer is used for word processing, circuit diagrams, test results and data tables, sheet metal and assembly drawings.

ELTR 3143 - Operating Systems Lab, 3 Credits

Prerequisite(s):
Corequisite(s): ELTR 3133
Level: Lower
This course is designed to prepare the student to enter the employment field as a computer repair technician. Students will install, maintain and configure Microsoft Operating Systems. Students will work with various lab computers and configurations throughout the course. Students continue to prepare to take the Computer Technology Industry Association's (Comp TIA) A+ Operating System Certification Exam.

ELTR 3153 - Intro to Networks Theory, 3 Credits

Prerequisite(s):
Corequisite(s): ELTR 3163
Level: Lower
This course is designed to prepare the student to enter the employment field as a computer repair technician with networking skills. Students are introduced to networking concepts, hardware and software dealing with computer networks. Students will design and configure peer-to-peer networks using modems, network cards, hubs and appropriate cabling. Students continue to prepare to take Computer Technology Industry Association's (Comp TIA) A+ Core Certification Exam.

ELTR 3156 - Electrical Power Systems, 6 Credits

Prerequisite(s): ELTR 1156 with D or better and ELTR 1166 with D or better and ELTR 1176 with D or better and ELTR 2156 with D or better and ELTR 2166 with D or better and ELTR 2176 with D or better
Level: Lower
This course will provide instruction in the applied mathematics, circuit analysis, design, installation, distribution methods, protection, and trouble of single phase and three phase electrical power systems.

ELTR 3159 - Electrical Power Systems, 9 Credits

Prerequisite(s): ELTR 2156 with D or better * and ELTR 2166 with D or better * and ELTR 2176 with D or better *
Level: Lower
To provide instruction in the applied mathematics, analysis of circuits, design, and troubleshooting of various types of electrical power systems. Included in this instruction will be the application of learned skills required to design and install electrical raceway systems. Lab gives the opportunity to develop manipulative skills for electrical installations as well as the construction and systems analysis of both single and three-phase power circuits. Hands-on training will provide a "realistic" approach in the performances of lab projects to enable the student to become proficient in this area of trade.

ELTR 3163 - Intro to Networks Lab, 3 Credits

Prerequisite(s):
Corequisite(s): ELTR 3153
Level: Lower
This course is designed to prepare the student to enter the employment field as a computer repair technician with networking skills. Students apply networking concepts, to the hardware and software dealing with computer networks. Students install and configure various network cards, cabling, and connection equipment as well as working with various Microsoft networking software. Students install and configure peer-to-peer networks using modems, network cards, hubs, and appropriate cabling. Students continue to prepare to take

Computer Technology Industry Association's (Comp TIA) A+ Core Certification Exam.

ELTR 3169 - Magnetic Motor Controls, 9 Credits

Prerequisite(s): ELTR 2156 with D or better * and ELTR 2166 with D or better and ELTR 2176 with D or better *
Level: Lower
This course presents related theory, components, and various devices used in the numerous types of magnetic controls of motors. The student will be introduced to the basic circuits and then progress to the more advanced circuits of alternating sequencing, latching, and time delay operations of motor controls. Starting with the "basics" of motor control, this lab will include many progressive projects leading the student toward a final result of total automation of a system using magnetic controls and time delay relays. The mechanics of overload relays, proper selection of starter sizes and heater elements, to name a few, will also be studied by the student in these lab projects. This is a seven and one-half (7 1/2) week course.

ELTR 3173 - PC Technicn Certificatn Theory, 3 Credits

Prerequisite(s): ELTR 3153 with D or better * and ELTR 3163 with D or better *
Corequisite(s): ELTR 3183
Level: Lower
This course is designed to prepare the student to enter the employment field as a computer repair technician. Students will learn advanced Windows operating system configuration and maintenance, along with advanced hardware such as laptop repair, portable devices, and modern video formats and connectors. Other study will be focused on security issues, customer service and communication techniques, and more in-depth knowledge of Windows 2000/X, TCP/IP, and wireless networks.

ELTR 3183 - PC Technician Certificatn Lab, 3 Credits

Prerequisite(s): ELTR 3153 with D or better * and ELTR 3163 with D or better *
Corequisite(s): ELTR 3173
Level: Lower
This lab prepares the student to enter employment as a computer repair technician. Students will perform advanced Windows operating system configuration and maintenance, and will perform maintenance on advanced hardware such as laptops, portable devices, and modern video formats and connectors. Other activities will focus on security issues, customer service and communication techniques, and more in depth knowledge of Windows 2000/XP/VISTA, TCP/IP, and wireless networks. The student should be able to pass the CompTIA A+ certification after this course.

ELTR 3306 - Alarms and Special Systems, 6 Credits

Prerequisite(s): ELTR 2156 with D or better and ELTR 2166 with D or better and ELTR 2176 with D or better
Level: Lower
This course will provide instruction in the applied mathematics, operation, design methodology, installation requirements, and National Electrical Code requirements for Alarm and Special Systems.

ELTR 3326 - Magnetic Motor Controls, 6 Credits

Prerequisite(s): ELTR 2156 with D or better and ELTR 2166 with D or better and ELTR 2176 with D or better
Level: Lower
This three credit hour theory is designed to teach foundational concepts of motors and motor control. Safe work practices and code compliment procedures will be reinforced.The student will be introduced to the basic circuits, devices and components used in their control; advanced circuits of alternating, sequencing, latching, and time delay operations of motor control will be presented. The three credit hour lab will progressively lead the student to a basic understanding of individual control devices. The student will apply the basic knowledge and safety protocol towards integration into a totally automated system using magnetic and solid state controls. Throughout all projects, from basic to fully automated systems, the student will be taught troubleshooting techniques of industrial motor controls. Students will be evaluated to assess their troubleshooting skills and techniques within the lab practicums.

ELTR 3336 - Photovltc & Wind Trbn Systm In, 6 Credits

Prerequisite(s): ELTR 2156 with D or better and ELTR 2166 with D or better and ELTR 2176 with D or better
Level: Lower
The course will discuss the fundamentals of photovoltaic and wind power generation, installation and maintenance practices. The course content will include the components used in stand- alone systems, grid interconnect systems, and grid connected systems with battery back-up. Areas of focus will be: safe work practices and PPE, site evaluation, system sizing, zoning restrictions, funding resources, and installation practices in accordance with National Electrical Code, Building Code and NABCEP training objectives and requirements.

ELTR 3356 - Prgrmble Cntrls for Ind Autotn, 6 Credits

Prerequisite(s): ELTR 2156 with D or better and ELTR 2166 with D or better and ELTR 2176 with D or better
Level: Lower
This course is designed to present the origin and evolution of programmable logic controllers. Special emphasis is placed on the fundamentals of Relay ladder Logic (RRL) programming methods and the analysis of circuit operations as well as various applications of Programmable Logic Controllers (PLC's) used in modern industrial applications. Students will receive the necessary hands on experience in lab to be able to design, program, construct, troubleshoot, and perform preventive maintenance of all components of a PLC controlled process. Students will be evaluated on troubleshooting techniques, terminations of input and output devices, and the proper maintenance of at least two different types of PLC Manufactures.

ELTR 3366 - Ind Automtn & Process Controls, 6 Credits

Prerequisite(s): ELTR 2156 with D or better and ELTR 2166 with D or better and ELTR 2176 with D or better
Level: Lower
This course involves the study of effective process control theory. A systems approach is used in an effort to understand each instrument's function within the system. The course will also examine how pneumatics, hydraulics, Servo motors, and system automation are used in industry today for the manufacturing of products. This course also involves the Practice of "hands on" effective process control theory. A systems approach is used in an effort to understand each instrument's function within the system.

ELTR 3503 - Appl Prac 3-Phase Distrbtn Sys, 3 Credits

Level: Lower
This course is designed to build on the Basic Lineman Principles courses. It begins teaching more advanced hands-on skills used by the lineman in a three-phase distribution system in the electric utility industry.

ELTR 4113 - Networking Concepts I Theory, 3 Credits

Prerequisite(s): ELTR 3153 with D or better * and ELTR 3163 with D or better *
Corequisite(s): ELTR 4123
Level: Lower
This course is designed to prepare the students to enter the employment field as a computer network technician. Students will learn the history and theory of network topologies including star, token ring, bus, and mesh topologies. Other fields of study will include network wiring using thicknet, thinnet, UTP, and fiber optic technology including proper use of tools and mounting hardware. This course will continue to prepare the student to take the Computer Technology Industry Association's (Comp TIA) + Certification Exam.

ELTR 4116 - Instrumentation & Process Cont, 6 Credits

Prerequisite(s):
Corequisite(s): ELTR 4126 ELTR 4136
Level: Lower
In this course the students will work with process systems. Students will design ladder diagrams for the Programmable Logic Controllers (PLC), which along with the associated peripheral input devices are used to provide effective process control. A systematic approach is used to understand each instrument's or control device's function within the system.

ELTR 4123 - Networking Concepts I Lab, 3 Credits

Prerequisite(s): ELTR 3153 with D or better * and ELTR 3163 with D or better *
Corequisite(s): ELTR 4113
Level: Lower
This course is designed to prepare the student to enter the employment field as a computer network technician. Students build and perform analysis on various network topologies including star, token ring, bus, and mesh topologies. Students use test equipment to troubleshoot and repair computer networks. Students work with thicknet, thinnet, UTP, and fiber optic cabling using proper tools and mounting hardware. This course continues to prepare the student to take Computer Technology Industry Association's (Comp TIA) Network + Certification Exam.

ELTR 4126 - Instrum & Process Control Lab, 6 Credits

Prerequisite(s):
Corequisite(s): ELTR 4116 ELTR 4136
Level: Lower
The course runs concurrently with the Instrumentation and Process Control course. Application of control theory to actual processing, utilizing transmitters, controllers, actuators, and recorders. Calibration, maintenance, and troubleshooting will be stressed. Student laptops are used to help gather and analyze data.

ELTR 4133 - Networking Concepts II Theory, 3 Credits

Prerequisite(s): ELTR 4113 with D or better * and ELTR 4123 with D or better *
Corequisite(s): ELTR 4143
Level: Lower
This course is designed to prepare the student to enter the employment field as a computer network technician. Students learn the history and theory of network protocols and network management concepts along with network troubleshooting using network management software. Other topics of study include network communication, switching, routing, firewalls, VLAN technology and WAN communication. This course continues to prepare the student to take Computer Technology Industry Association's (Comp TIA) Network + Certification Exam.

ELTR 4136 - Process Control Project Lab, 6 Credits

Prerequisite(s):
Corequisite(s): ELTR 4116 ELTR 4126
Level: Lower
Students will work in small teams to construct a functional process control project. The team will layout, build, test, and troubleshoot a process system utilizing information from theory and their independent research. Students will utilize their laptop computer to compile the necessary process data and to generate their project documentation. The teams are expected to work with minimum supervision while bringing their project to a successful conclusion.

ELTR 4143 - Networking Concepts II Lab, 3 Credits

Prerequisite(s): ELTR 4113 with D or better * and ELTR 4123 with D or better *
Corequisite(s): ELTR 4133
Level: Lower
This course is designed to prepare the student to enter the employment field as a computer network technician. Students will apply the theory of network protocols and network management concepts to various network topologies. Students will also troubleshoot networks using network management software. Other topics of study will include network communication, switching, routing, VLAN technology and WAN communication. Students will continue to work with Cisco Academy on-line courses. This course will help prepare the student to take the Computer Technology Industry Association's (CompTIA) Network + Certification Exam.

ELTR 4153 - Server Technologies Theory, 3 Credits

Prerequisite(s): ELTR 4133 with D or better * and ELTR 4143 with D or better *
Corequisite(s): ELTR 4163
Level: Lower
This course is designed to prepare the student to enter the employment field as a computer server/network technician. Students learn to administer various network operating systems including Windows NT, Windows 2000, Linux, and Netware. Other fields of study include various NOS components such as DHCP, WINS, DNS, IIS, and mail administration. This course

continues to prepare the student to take Computer Technology Industry Association's (Comp TIA) Network + Certification Exam.

ELTR 4159 - Program Contr for Ind Auto, 9 Credits

Prerequisite(s): ELTR 2156 with D or better and ELTR 2166 with D or better and ELTR 2176 with D or better
Level: Lower
This course presents the evolution, principles and analysis programmable logic control operations as well as the various "on-line" applications of programmable controllers used in modern industries. Special emphasis is placed on troubleshooting techniques, terminations of inputs and outputs, and proper maintenance of at least two different makes of programmable controllers. The lab will start with the "basics" of PLC and its programming, leading the student toward a final result of total PLC control of a system using programmable controllers, magnetic controls, solid state controls and smart devices such as serve linear actuators.

ELTR 4163 - Server Technologies Lab, 3 Credits

Prerequisite(s): ELTR 4133 with D or better * and ELTR 4143 with D or better *
Corequisite(s): ELTR 4153
Level: Lower
This course is designed to prepare the student to enter the employment field as a computer server/network technician. Students learn to administer various network operating systems including Windows NT, Windows 2000, Linux, and Netware. Students install and use various NOS components such as DHCP, WINS, DNS, IIS, and mail administration. This course continues to prepare the student to take Computer Technology Industry Association's (Comp TIA) Network + Certification Exam.

ELTR 4169 - Alarms and Special Systems, 9 Credits

Prerequisite(s): ELTR 2156 with D or better and ELTR 2166 with D or better and ELTR 2176 with D or better
Level: Lower
A presentation of various special systems relating to the fire alarms, HVAC control systems, emergency systems, and lighting systems used by the industrial and commercial sectors. Laboratory projects of special systems such as fire alarms and basic electrical control systems for heating and air conditioning, along with lighting control systems, emergency power systems, and special wiring needs of hazardous locations will be performed by the student during the course. All practical hands-on training will simulate as closely as possible the real nature of field wiring and the techniques that are employed. This is a seven and one-half (7 1/2) week course.

ELTR 4503 - Apl Instl Mtnce Enrgzd Pri Dis, 3 Credits

Level: Lower
This course is designed to teach the work methods used during the safe installation and maintenance of primary conductors in a distribution system. This course requires extensive work with conductors energized at 4 kV and 12 kV.

ELTR 4513 - Appl Bsc Cable Splcng Prin II, 3 Credits

Level: Lower
Applied Basic Cable Splicing Principles II is the fourth course in a five course sequence focusing on the skills needed to work in the underground cable area of electric utility industry. The equipment and materials used in this course provide the most realistic hands-on training available to prepare the student for a career as a cable splicer in the electric utility industry.

ELTR 4900 - Directed Study, 1 to 9 Credits

Level: Lower
A student may contract for one to nine credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

ELECTROMECH ENGR TECH

EMET 3421 - Electromech Analysis Laborator, 1 Credit

Prerequisite(s): MATH 1063 with D or better or MATH 1084 with D or better and MECH 2603 with D or better
Level: Lower
The laboratory implements the theoretical principles of EMET 3423, Electromechanical Analysis. The electrical aspects of the course are completely covered in the laboratory sessions. The laboratory will include experimentation with links, slide mechanisms, scotch yoke, principles of force, torque, velocity, acceleration, inertia and friction. Techniques of instrumentation for R & D and automation including set-up and calibration of transducers, readouts, and data acquisition as well as application of computers to data acquisition, data reduction and design analysis are covered.

EMET 3423 - Electromechanical Analysis, 3 Credits
Prerequisite(s): MATH 1063 with D or better or MATH 1084 with D or better and MECH 2603 with D or better
Level: Lower
The course is an integrating experience of mechanisms and instrumentation. The course will emphasize applications of material learned involving statics, dynamics and strength of materials and will introduce the students to vibrations. The integration of these subjects will be enhanced through the laboratory experience offered in co-requisite EMET 3421 where the student will study different mechanisms with the aid of transducers and instrumentation. The course will include the study of levers, links, slide mechanisms, cams, scotch yoke and the principles of force, torque, velocity, acceleration, inertia and friction. The course will use the principles of Equilibrium and Work-Energy along with Newton's Second Law to examine a variety of problems.

EMET 3424 - Electromechanical Analysis, 4 Credits
Prerequisite(s): MATH 1063 with D or better * or MATH 1084 with D or better * and MECH 8334 with D or better
Level: Lower
The course is an integrating experience of mechanisms and instrumentation. The course will emphasize applications of material learned in courses involving statics, dynamics and strength of materials and will introduce the students to vibrations. The integration of these subjects will be enhanced through the laboratory experience where the student will study different mechanisms with the aid of transducers and instrumentation. The course will include the study of levers, links, slide mechanisms, scotch yoke and the principles of force, torque, velocity, acceleration, inertia and friction. Techniques of instrumentation for R & D and automation including set-up and calibration of transducers, readouts, and data acquisition as well as application of computers to data acquisition, data reduction and design analysis are covered.

EMET 5004 - Instrumentation, 4 Credits
Prerequisite(s): (PHYS 2023 with D or better or PHYS 2044 with D or better) and (EMET 3424 with or better or ELET 2103 with or better)
Corequisite(s): MATH 2074
Level: Upper
This course introduces the student to general characteristics of electromechanical sensors and transducers, electrical measurement systems, electronics signal conditioning, data acquisition systems, and response characteristics of instruments. The lectures focus on the selection, calibration techniques and applications of electromechanical transducers. The laboratory has industrial equipment, such as a punch press, drill press, and metal lathe, which are equipped with sensors that are configured to measure physical quantities such as force, strain, displacement, velocity, and acceleration. Data acquisition and real-time software applications using LabVIEW are applied in a laboratory environment.

EMET 5093 - Intr to C Programg for Windows, 3 Credits
Level: Upper
The course begins with the fundamentals of the C and C++ language, program structure, and debugging techniques. Topics include the programming environment, data types and operators, if and case statements, loops, arrays, and strings, pointers, structures and classes, I/O and file operations. The course will focus on program development for the Microsoft Windows environment - i.e. developing Windows programs and utilizing the system resources. Must have prior programming language experience.

EMET 5900 - Directed Study, 1 to 6 Credits

Level: Upper

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

EMET 6004 - Feedback Control Systems, 4 Credits

Prerequisite(s): BSET 4004 with D or better and MATH 6114 with D or better

Level: Upper

Feedback control systems with topics in time response, stability, criteria, system representation, root locus diagrams, and compensation. The systems include electrical, mechanical, and electromechanical networks. The laboratory features simulation of electrical and mechanical systems using MATLAB and SIMULINK as well as a variety of physical controllers.

ENGINEERING SCIENCE

ENGR 1201 - Engineering Sci Orientation, 1 Credit

Level: Lower

An examination of strategies for success, including organizational and study skills, and career opportunities for computer engineering technology, electrical engineering technology and electromechanical engineering technology students in industry. There will be at least a dozen textbook and research readings followed by written assignments on topics to include the variety of engineering and engineering technology majors, diversity in society and the technical workplace, personal assessments of goals, values, strengths and weaknesses as related to student and technical career success, and employment application techniques such as resume writing, letters of application, interviewing and follow-up communications. Research assignments use library and Internet as resources and all written assignments are generated by computer.

ENGR 2201 - Engineering Science Seminar, 1 Credit

Prerequisite(s): ENGR 1201 with D or better

Level: Lower

The purpose of this course is to assist sophomore engineering science students in choosing and transferring to the college or university of their choice in order to complete a baccalaureate degree in engineering. Transfer admissions visitors are invited to classes and there may be class trips to potential transfer institutions depending on the interest of the students. This is a required course for the Engineering Science associate degree.

ENGR 2900 - Directed Study, 1 Credit

Level: Lower

A student may contract for an independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

ENGR 3004 - Circuit Analysis I, 4 Credits

Prerequisite(s): MATH 2094 with D or better

Corequisite(s): MATH 6114

Level: Lower

This Calculus-based course covers DC circuit analysis including voltage, current, resistance, power and energy. Circuit analysis techniques and Kirchhoff's laws are applied to series, parallel and complex circuits. Thevenin, Norton and Superposition theorems are applied to DC circuits. Operational amplifiers are introduced. Inductance and capacitance are introduced and the transient response of RL, RC and RLC circuits to step inputs is studied using differential equations. The laboratory incorporates use of manual and computer-controlled equipment and simulation software to reinforce lecture concepts.

ENGR 3213 - Analytical Mechanics I, 3 Credits

Prerequisite(s): MATH 2094 with D or better and PHYS 1064 with D or better

Level: Lower
Statics at the intermediate level. Equilibrium of particles and rigid bodies in two and three dimensions, centroids, and centers of gravity, analysis of structures, friction, area and mass moments of inertia. Calculus and vector mathematics are employed throughout.

ENGR 3254 - Systems Dynamic I, 4 Credits
Prerequisite(s): MATH 2094 with D or better and PHYS 1064 with D or better
Corequisite(s): MATH 4114
Level: Lower
A unified engineering treatment of the elements of systems dynamics. The intent is to use a common methodology regardless of physical discipline. Included are mechanical and electrical systems. Also included are system excitation, mathematical and modeling of physical systems and linear system responses. System stability and responses will be studied using classical techniques and Laplace transforms. The laboratory will include electronic simulation of physical systems as well as analog and digital computer models of independent and coupled first and second order systems.

ENGR 4004 - Circuit Analysis II, 4 Credits
Prerequisite(s): ENGR 3004 with D or better and MATH 6114 with D or better
Level: Lower
This course covers AC circuit analysis beginning with the study of sinusoidal steady-state solutions for circuits in the time domain. Nodal, loop and mesh methods of AC circuit analyses and the Thevenin, Norton and Superposition theorems are applied to the complex plane. AC power, transformers, mutual induction, three-phase circuits and two-port networks are introduced and used for analysis. Laplace and Fourier Transforms and the Fourier Series are applied to circuit analyses. Complex frequency analysis is introduced to enable discussion of transfer functions, frequency dependent behavior, resonance phenomenon and simple filter circuits. The laboratory incorporates use of manual and computer-controlled equipment and simulation software to reinforce lecture concepts.

ENGR 4104 - Circuit Analysis, 4 Credits
Prerequisite(s): ENGR 3254 with D or better
Corequisite(s): MATH 4114
Level: Lower
This Calculus based circuit course follows the generic Systems Dynamics course with in-depth coverage of techniques for the analysis of linear electric circuits. Simplification and formal procedures for resistive circuits containing independent and dependent sources. Time-domain and frequency domain analysis of first and second order circuits containing energy storage elements. AC steady state, power and three phase circuits. Magnetic coupling and transformers. Passive and active filters. Laplace transform, state variable and computer aided analysis and testing. Three lectures and one laboratory per week.

ENGR 4213 - Analytical Mechanics II, 3 Credits
Level: Lower
Dynamics at the intermediate level. Kinematics and kinetics of particles, systems of particles and rigid bodies and mechanical vibrations. Force, mass, acceleration, work power and energy, impulse and momentum. Calculus and vector mathematics are employed throughout.

ENGR 4264 - Engr Mechanics of Materials, 4 Credits
Prerequisite(s): ENGR 3213 with D or better and MATH 2074 with D or better
Level: Lower
This course is a calculus-based study of advanced concepts in Mechanics of Materials. It addresses the behavior of deformable mechanical components when subjected to tension, compression, torsion, flexure/bending or a combination of these loads. Extensive use is made of free body diagrams as well as Mohr's Circle for stress and strain. Experience is gained in the analysis of beam deflection, shafts in torsion, power, column buckling and thin walled pressure vessels. Analysis includes examination of stress concentrations, elastic and inelastic response, residual stresses, indeterminate structures and thermal effects. Superposition, singularity functions and theories of failure are studied. Laboratory experiences include traditional mechanical material testing and computer software applications.

ENGR 4900 - Directed Study, 1 to 6 Credits
Level: Lower

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

ENVIRONMENTAL TECHNOLOGY

ENVR 3003 - Interntl Issues in Agroecology, 3 Credits

Level: Lower

This course will explore the issues of food production and consumption, the persistence of hunger and malnutrition in a world of plenty, and the role of science and technology in pursuing the elusive goal of 'food security for all' using a multi/interdisciplinary perspective. Comparative analysis is used throughout the course to explore topics which link ecology, culture, economics, and the ability of societies to sustain healthy environments and viable food and farming communities.

ENVR 4900 - Directed Study, 1 to 4 Credits

Level: Lower

A student may contract for an independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

ENGLISH SECOND LANGUAGE

ESOL 1312 - Guide to US Culture for ESOL, 2 Credits

Level: Lower

This course is designed for international students at the low- to mid-intermediate level of English proficiency (COMPASS ESL Placement Test scores less than 80 on Reading and 82 on Listening). This course uses case studies, critical incidents, and discussion topics to learn to speak and act comfortably in new cultures. Students will explore cultural views, accepted wisdom and experiences by identifying, describing, analyzing, and comparing and contrasting their home culture with American culture through everyday situations such as the classroom, roommates, shopping, dating, going to the doctor, and participating in social events. Students will also learn English idioms and phrasal verbs commonly associated with these topics.

ESOL 1313 - Intermediate Academic Writing, 3 Credits

Level: Lower-Developmental/Remedial Course

Course Attributes: Remedial

This course concentrates on improving the writing ability of low- to mid-intermediate non-native users of English. Students will strengthen their paragraph writing skills and begin to write multiple paragraph essays. Students will also practice editing skills in order to correct their writing for basic verb forms, mechanics, and punctuation. This course is intended for students who earned below an 83 on the COMPASS ESL Grammar/Usage Placement Exam.

ESOL 1314 - Int Academic English Comm*, 4 Credits

Level: Lower-Developmental/Remedial Course

Course Attributes: Remedial

This course develops the low- to mid-intermediate English speaker's speaking and listening skills. Students will use level-appropriate academic content as a means for vocabulary development and to practice note-taking skills. Group work, whole class discussions, and presentations will offer students ample opportunity to practice their English conversational skills in order to be able to move to the advanced level of study. This course is intended for students who earned less than an 82 on the Listening portion of the COMPASS ESL Placement Exam.

ESOL 1323 - Intermediate Academic Reading, 3 Credits

Level: Lower-Developmental/Remedial Course

Course Attributes: Remedial

This course focuses in improving reading fluency, vocabulary, and academic skills from a low-intermediate to a high-intermediate level of proficiency. Students will learn to apply pre-reading, while-reading, and post-reading practices such as identifying main ideas and

supporting details, outlining, skimming, and making predictions and inferences to increase reading competence while building academic vocabulary through word- and sentence-level activities. This course is intended for students who earned less than an 80 on the Reading portion of the COMPASS ESL Placement Exam.

ESOL 1412 - Intercultural Communications, 2 Credits

Level: Lower

This course is designed for international students and is focused on equipping them with the cultural understanding they need in order to successfully interact with speakers of American English. Students will gain a deeper understanding of American values, behavior, attitudes, and communication styles through readings, cross-cultural communications exercises, and discussion. Time will also be devoted to the idioms and phrasal verbs that dominate informal American English.

ESOL 1413 - Advanced Academic Writing, 3 Credits

Level: Lower

This course focuses on equipping non-native English speaking students with the English language writing skills necessary to be successful in entry level college courses. Students will learn to minimize the influence of the native languages through targeted practice and the use of specific linguistic strategies. Intended for students who have TOEFL scores less than 500 on the paper test, 173 on the computer based test, or 61 on the Internet based test.

ESOL 1414 - Advanced Academc English Comm, 4 Credits

Level: Lower

This course focuses on the development of listening comprehension and conversational proficiency through engaging tasks using authentic academic contexts and the teaching of listening and speaking strategies. Students will learn to take part in academic discussions, lectures, student study groups, and one-on-one times with instructors across a wide variety of academic disciplines. This course is intended for students who have TOEFL scores less than 500 on the paper test, 173 on the computer based test, or 61 on the Internet based test.

ESOL 1423 - Advanced Academic Reading, 3 Credits

Level: Lower

This course focuses on improving reading fluency, vocabulary, and academic skills necessary for success in entry level college courses. Students will learn to apply pre-reading, while-reading, and post-reading practices to increase reading efficiency while building academic vocabulary through word and sentence-level activities. This course is intended for students who have TOEFL scores less than 500 on the paper test, 173 on the computer based test, or 61 on the Internet based test.

FOOD SERVICE

FDSR 1084 - Sanitation & Food Safety, 4 Credits

Level: Lower

This course is an introduction to the basic aspects of culinary arts sanitation with emphasis on various types of food service operations, correct sanitation procedures, rules and regulations pertaining to the safe use and maintenance of small tools and heavy equipment, correct methods of customer service, and personal hygiene as related to foods and food service. Students may earn certification from the Education Foundation of the National Restaurant Association as part of the program.

FDSR 1143 - Menu Planning, 3 Credits

Level: Lower

This is an introductory course that will teach proper service protocol, dining room etiquette, ordering and use of point of sales systems. As the semester progresses, other topics will include: basic principles of menu planning with emphasis on classical menu patterns; menu formats and relationship of the menu to the complete operation of a food service establishment, and pricing of basic menu items.

FDSR 1153 - Introduction to Baking, 3 Credits

Level: Lower

This is an introductory course in baking. The course will cover basic baking ingredients and how they affect final product outcome. Emphasis will be placed on quality baked goods, weights, measurements, equipment and importance of accuracy, and basic procedures

common to baker formulas.

FDSR 1373 - Foods, Ingredients & Products, 3 Credits

Level: Lower

This course emphasizes definitions and explanations of cooking and baking terms and selection of ingredients and products. The students will learn about the foundation principles of food preparation through a study of the chemical and physical properties of food, the nature of reactions caused by environmental conditions during preparation, cooking or baking, and the affect of materials added during some phase of preparation or cooking. The student will explore common practices in food preparation including soups, stocks, vegetables, sauces, salads and dressings, etc.

FDSR 1478 - Quantity Food Lab Unit 1, 8 Credits

Level: Lower

The student will acquire experience in the preparation of and service of quantity foods with an emphasis on school, institutional, and commercial cafeterias, and an à la carte restaurant. The course covers basic equipment usage, knife skills, and storage and inventory procedures. Students will acquire experience in salad and stock preparation and will learn about the fabrication of chicken, pork, and beef cuts. Scientific economics as well as the artistic aspects of food preparation will also be developed as the student becomes involved in each area of food production.

FDSR 1578 - Quantity Baking Lab Unit I, 8 Credits

Level: Lower

This lab section introduces students to the fundamental aspects of baking. Students will learn about the preparation and use and safety considerations of baking equipment. Students will get hands-on experience preparing fried bakery goods, yeast doughs, quick breads, pies, cookies, cakes and icings. Students will rotate bi-weekly through experiences with general baking concepts, preparation, equipment use, safety, mixing, panning and finishing of the products.

FDSR 2043 - Fundamentals of Nutrition, 3 Credits

Level: Lower

This course will cover the function and importance of nutrients and vitamins in the body, daily nutritional requirements, important food sources and the effects of nutrient deficiencies. Nutritional guidelines and standards will also be reviewed. The importance of producing, storing, and using nutritious ingredients in the daily production of food will be stressed. In addition, students will examine various topics related to the American diet such as fad diets, herbs and supplements, diet and exercise, weight loss diets, and food additives.

FDSR 2183 - Food Purchasing Techniques, 3 Credits

Level: Lower

This course introduces students to the procedures and techniques involved with food service purchasing and storage, including the "Five Rights" (right product, right quantity, right supplier, right price, and the right time.) The course will cover product grading specifications as well as storeroom operations such as inventory procedures and classification of products, receiving, and storing of food products. The course will also emphasize product identification, and packaging, and will cover new trends in purchasing such as organic and locally produced products.

FDSR 2253 - Hospitality Cost Control, 3 Credits

Level: Lower

This course incorporates basic math as related to the food service industry. Topics will include: principles of food cost controls, daily yields and menu pricing, monthly report forms, food check preparation, recipe conversion and standardization procedures. This course will also cover cashier's report procedures, the use of balance sheets to determine the state of a food service operation, and costing as related to budgeting, improvements of operation efficiency and comparisons of similar operations.

FDSR 2479 - Quantity Food Lab Unit II, 9 Credits

Prerequisite(s): FDSR 1478 with D or better

Level: Lower

This lab is a study and practice of the principles, standards and procedures involved in

quantity and quality food preparation. The rotation of duties involves all areas of preparation, service and sanitation within the à la carte restaurant and cafeteria. The course emphasizes improvement of basic knife skills, fabrication skills, and bakery skills needed for the preparation of breakfast items, meat, fish and poultry, soups and vegetables.

FDSR 2489 - Quantity Baking Lab Unit II, 9 Credits

Prerequisite(s): FDSR 1578 with D or better
Level: Lower
This lab section develops intermediate level skills in baking and production. Students will build on skills learned in FDSR 1578 and will rotate bi-weekly through experiences with yeast doughs, pastries, specialty cookies, finishing and decorating.

FDSR 3163 - Furnishing and Equipment, 3 Credits

Level: Lower
This course is a study of food service equipment and furnishings. The course will emphasize specifications, definition and justification of equipment needed, the selection of furnishings, the cost factors, and the proper procedures involved in effective maintenance.

FDSR 3253 - Beverages, 3 Credits

Level: Lower
This course addresses the problems peculiar to the alcoholic beverage industry. Students will learn about the history, classification, methods of production, and characteristics of wine, spirits and beers, mixology and lounge service, systems of beverage controls, and laws controlling beverage sales.

FDSR 3293 - Intermediate Baking, 3 Credits

Level: Lower
This course will teach students the proper procedures and mixing methods used in retail bakeries with an emphasis on the intricate techniques used to produce quality baked goods. The course will cover the specifics of yeast doughs, pastries, fillings, gateaux, meringues, and icings.

FDSR 3353 - Hospitality Pers Relations I, 3 Credits

Level: Lower
This course is the study of various supervisory techniques. This course will emphasize the responsibilities of management and personnel including elements of operational control, profit motivation, employee productivity, and the development of personal communication skills. Labor cost and budgets will be discussed. Students will give an oral report on their summer work experience as it relates to the personnel management.

FDSR 3479 - Quantity Food Lab Unit III, 9 Credits

Prerequisite(s): FDSR 1478 with D or better and FDSR 2479 with D or better
Level: Lower
Students will practice menu planning and preparation of restaurant items in the working labs of the program. This lab provides introductory experience to develop supervisory skills in the kitchens and dining room. The student is expected to develop mastery of skills for a la carte and volume feeding, food preparation and service, with emphasis on accepted culinary techniques and presentation.

FDSR 3489 - Quantity Baking Lab Unit III, 9 Credits

Prerequisite(s): FDSR 1578 with D or better and FDSR 2489 with D or better
Level: Lower
This lab section develops advanced techniques and disciplines for fine dining and high volume baking operations. Students will rotate weekly through experiences with wedding cakes, specialized pastries, cakes, tortes, seasonal baked goods, and specialty dough. The student will gain an understanding of advanced baking techniques as documented in the Lab Outcomes and Requirements Handbook.

FDSR 4032 - Facilities Planning & Design, 2 Credits

Level: Lower
This course covers the planning and designing of a food service facility, from the initial concept, to menu design, demographics, choice of building facility, economic factors, legal and regulatory issues, space allocation, "back of the house" issues, and flow patterns. There will be special emphasis on design and environmental issues such as lighting, HVAC, sound

control, ambience, and energy conservation.

FDSR 4043 - Advanced Baking, 3 Credits

Level: Lower

This course will introduce the student to specialized techniques in baking and pastry skill development covering a wide-range of topics not included in the intermediate baking course. Topics include petit fours, candy making, fillings; decorative sugar, pretzels, bagels, specialty breads, along with assigned special projects.

FDSR 4163 - Advanced Cuisine, 3 Credits

Level: Lower

This course deals with advanced cooking techniques and cuisine issues. Much of the activity is directed toward developing and refining a personal culinary philosophy by the students. Students will study cooking techniques in depth with a view to refining their use, and will study basic methods of merchandising in the foodservice industry. The course will introduce topics and begin discussion (and raise awareness) about sustainable food production and will establish a firm connection between cooking and culture for the students.

FDSR 4255 - Hospitality Personnel Relat II, 5 Credits

Prerequisite(s):

Level: Lower

This course will cover the fundamentals of personnel management relating to motivation, performance, employee rights and labor relations. The course emphasizes basic strategic planning, ways to implement plans, and the application of planning to daily operations. The course will cover topics such as management and employee points of view, organizational patterns, job procurement and training, job analysis, and the role of the government. Special emphasis will be placed on the study of unions and the role they play in the workplace.

FDSR 4478 - Quality Food Lab IV, 8 Credits

Prerequisite(s): FDSR 1478 with D or better and FDSR 2479 with D or better and FDSR 3479 with D or better

Level: Lower

This lab section provides students with hands-on managerial experience in the planning, organizing and directing of kitchen production. Students will rotate through experiences as chef, station cook and dining room manager. These experiences will help students develop a personal/professional cooking style through creativity, innovation and synthesis based on previous lab exposures. The lab will emphasize refined sauce making, braising, smoking, cooking proteins to order and sophisticated plate presentation.

FDSR 4488 - Quality Baking Lab Unit IV, 8 Credits

Prerequisite(s): FDSR 1578 with D or better and FDSR 2489 with D or better and FDSR 3489 with D or better

Level: Lower

This lab section provides students with hands-on managerial experience planning, organizing, and direction of bake-shop production. Students will rotate weekly through experiences with plated desserts, chocolate sculpting, sugar artistry, candy production and artisan breads. This lab will help students develop a personal/professional baking style through creativity, innovation, and synthesis.

FDSR 4749 - Industry Work Study I, 9 Credits

Level: Lower

An approved work experience with in-depth practice and supervision in the student's particular field of interest within the food service industry with work study program agreements between the Food Service Department instructional staff, the student, and the cooperating employer; satisfactory completion of the work experience required for a passing grade.

FDSR 4769 - Industry Work Study II, 9 Credits

Level: Lower

Continuation of the independent work study program with greater emphasis on advancement within the food service structure and structured rotation of training.

FDSR 4900 - Directed Study, 1 to 9 Credits

Level: Lower
A student who has successfully completed three semesters of Food Service courses may arrange for three, five, or nine credit hours of directed study to provide an opportunity to continue study in a subject area of special interest. Directed study may be conducted by a student only through an arrangement with the Food Service Instructional Staff who are to direct such a study. The student will submit a plan acceptable to the instructional staff and will confer regularly regarding his or her progress.

FILM STUDIES

FILM 3113 - History of Italian Cinema, 3 Credits

Prerequisite(s): COMP 1503 with D or better
Level: Lower
This course provides an in-depth study of the history of Italian Cinema from its beginnings in the first decade of the 20th Century until the present. Students will study the various social, political, technological, and artistic influences on Italian Cinema throughout its history.

FINE ARTS

FNAT 1013 - Art Appreciation, 3 Credits

Level: Lower
Course Attributes: Gen Ed - The Arts, Liberal Arts and Science
Art Appreciation will introduce the student to the meaning of what Art is and is about. Special emphasis is placed on open discussion to create an awareness of why men and women have valued the arts which have become a driving force as they developed and became civilized. Students will see how the arts are really part of their daily lives by reading, viewing slides and works of art, and by creating. Writing is continued in assignments related to readings, class discussions, and lectures.

FNAT 1023 - Introduction to Theatre, 3 Credits

Level: Lower
Course Attributes: Gen Ed - The Arts, Liberal Arts and Science
The primary objective of this course is to develop knowledge and appreciation of theatre arts. This will be done through a study of theatrical traditions and dramatic literature from classical theatre to the contemporary. Writing is continued in assignments related to readings, class discussions, and lectures.

FNAT 1133 - Surv of Art Hist:Ancnt Grk Art, 3 Credits

Level: Lower
Art is the highest expression of a culture. Political, historical and social changes are the "heart of art." Works of art are a reflection of the ages in which they are produced and are often used as a "tool" to carry messages. This course will consider the development of art through the centuries and how it affected today's arts, with a focus on the main artistic movements starting with Ancient Greece through the Baroque period in Italy. Guided tours will help students to experience first-hand the main artistic expressions in Campania and Rome.

FNAT 1303 - Architectural History I, 3 Credits

Corequisite(s): COMP 1503
Level: Lower
Course Attributes: Gen Ed - The Arts, Liberal Arts and Science
This is a survey course of the origin and development of historically notable architecture throughout the world from the 10th century BCE to 1900. From the settlement of Catal Huyuk in ancient Anatolia (now Turkey) in the Neolithic Era through Eclecticism, the era of stylistic revivals in the late 19th century, the students will be exposed to a wide variety of buildings, as well as introduced to the corresponding cultures and religions.

FNAT 1313 - Art History, 3 Credits

Level: Lower
Course Attributes: Gen Ed - The Arts, Liberal Arts and Science
Art History is a comprehensive survey course which views the visual arts as a humanistic discipline. Students will see the condition of our western tradition as encountered from the magic of caveman to the complexities of the twentieth century. Emphasis will be placed on the variety of purposes for which art has been produced. Writing is continued in assignments

related to readings, class discussions, and lectures.

FNAT 2413 - Music History, 3 Credits

Level: Lower

Course Attributes: Gen Ed - The Arts, Liberal Arts and Science

Music History is a survey of musical performance with an emphasis on characteristics of style involving form, melody, and texture. Important composers and their works will be heard in class. Discussion of these works will include socio-cultural influences of music upon society and the functions of music and its effectiveness as an art form. Writing is continued in assignments related to readings, class discussions, and lectures.

FNAT 2423 - 3D Design/Color, 3 Credits

Prerequisite(s): CIAT 1423 with C or better and CIAT 1413 with C or better

Level: Lower

Course Attributes: Gen Ed - The Arts, Liberal Arts and Science

In this course, the student examines relationships between form, structure (response to gravity), process, skill, and intention in regard to three-dimensional visual art making. This inter-relationship dictates that every project incorporate some element of each of these concerns. Emphasis is placed on providing a wide range of experiences through projects which gradually increase in complexity as the student gains skills and awareness.

FNAT 2433 - Figure and Motion, 3 Credits

Prerequisite(s): CIAT 1413 with C or better and CIAT 1423 with C or better

Level: Lower

Course Attributes: Gen Ed - The Arts, Liberal Arts and Science

This course is designed to expand upon the fundamental skills of the Foundations: Form/Space Relationship course through the use of the human model. Proportion, perspectives, plus structural and locomotion dynamics will be studied. Students will focus on the mechanics of motion.

FNAT 2900 - Directed Study, 1 to 4 Credits

Level: Lower

Course Attributes: Gen Ed - The Arts

The student may contract for one to four hours of independent study through an arrangement with the instructor. The student must submit a plan acceptable to the instructor, and the department chairperson. To be substituted for the listed humanities requirements, a directed study course must be so designated by the department chair. Writing is continued in assignments related to readings, class discussions, and lectures.

FNAT 3513 - Art History II, 3 Credits

Level: Lower

Course Attributes: Gen Ed - The Arts, Liberal Arts and Science

Students will be introduced to the relationship of media and artistic expression in the context of the cultural period which formed the art object. For most students the art of our own times is difficult to understand; for this reason, the main emphasis of the course will be contemporary culture and its interpretation of traditional imagery. Students will discuss how art is created and what it means through written critical analysis.

FNAT 4900 - Directed Study, 1 to 5 Credits

Level: Lower

A student may contract for an independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

FNAT 5303 - Architectural History II, 3 Credits

Prerequisite(s): FNAT 1303 with D or better or CIAT 1303 with D or better

Level: Upper

Course Attributes: Liberal Arts and Science

This course addresses the study of the origin and development of modern architecture from the mid-nineteenth century to the present. Lecture topics will proceed chronologically from the early roots of Modernism to the Global Dissemination of Styles in recent times, ending with an examination of current trends in Urbanism and sustainable design. A research project

will require an oral presentation with graphics, a written report/analysis of the research topic and a computer-generated virtual model of a relevant building.

FORENSIC SCIENCE

FRSC 1001 - Intro to Forensic Technology, 1 Credit

Level: Lower

Forensic Science 1001 is an initial course appropriate for any student who wishes to gain a general introduction to the technical disciplines and skills commonly brought to bear during a criminal investigation. It is an expository course designed for Forensic Science majors to complete during their first semester of enrollment but has also been designed to be appropriate for any student to complete as an elective introductory course.

FRSC 7104 - Criminalistics I, 4 Credits

Prerequisite(s): CHEM 4524 with C or better and CHEM 6614 with C or better

Level: Upper

This course is an exploration of the basic theory and practice of trace and transfer physical evidence analysis. Specific topical focus includes: crime scene investigation; evidence collection and handling; microscopic techniques; recovery and analysis of fingerprint evidence; recovery and analysis of hair, fiber, paint, soil, and glass evidence; firearms examinations; recovery and analysis of gunshot residue; recovery and analysis of impression and toolmark evidence; and recovery and analysis of questioned document evidence.

FRSC 8104 - Criminalistics II, 4 Credits

Prerequisite(s): FRSC 7104 with C or better

Level: Upper

This course is a continuation of FRSC 7104 (Criminalistics I). The students' repertoire of forensic techniques is extended into the general areas of chemical and biological evidence as well as the introduction of special topics in forensic science. Specific topical focus includes recovery and analysis of arson and explosive evidence; recovery and analysis of toxicological evidence; chemistry and analysis of controlled substances; legal issues connected to controlled substance analysis; recovery and analysis of blood and body fluid evidence; basic blood spatter evidence interpretation; principles and techniques of serology and forensic DNA analysis; and an introduction to forensic anthropology, entomology, odontology and computer and digital evidence. The course culminates in a detailed, practical case study.

FRSC 8111 - Forensic Science Tech Capstone, 1 Credit

Prerequisite(s): FRSC 7104 with C or better

Corequisite(s): FRSC 8113

Level: Upper

This course is intended for students typically in their eighth and final semester of the four-year Forensic Science Technology curriculum and is to be taken concurrently with FRSC8113. The course is designed to prepare the student to enter the workforce and/or continue their education at the graduate level. Students will complete a capstone project requiring the analysis of physical evidence in a simulated casework setting. Students will also apply fundamentals of proper forensic laboratory report writing by producing a professional quality laboratory report suitable for admission into a court of law that communicates their findings.

FRSC 8113 - Forensic Scie Tech Prof Prepar, 3 Credits

Prerequisite(s): FRSC 7104 with C or better

Corequisite(s): FRSC 8111

Level: Upper

This course is intended for students typically in their eighth and final semester of the four-year Forensic Science Technology curriculum and is to be taken concurrently with FRSC 8111. The course is designed to prepare the student to enter the workforce and/or continue their education at the graduate level. Students will learn the details of topics such as resume and cover letter preparation, interview success, the importance of ethical behavior in the field of Forensic Science, and theoretical and practical aspects of crime laboratory work including a look at standard operating procedures and quality assurance practices. A debate on current issues and legal decisions challenging the validity of scientific testing procedures commonly performed in Forensic Science will also be held. Students will also be required to prepare and deliver expert witness testimony in a mock courtroom setting.

FRSC 8803 - Forensic Sci Tech Sr Resch Pjt, 3 Credits

Prerequisite(s): FRSC 7104 with C or better
Level: Upper
This course is intended for students in the final year of the four-year Forensic Science Technology curriculum. Students are required to complete an approved research project in an area of special interest in Forensic Science Technology. The student will submit a plan for research acceptable to the Forensic Science Technology program director and to the department chair after learning basic research methodology. The instructor and student will confer regularly regarding the progress of study and research. The student will be required to prepare a formal scientific paper and will be required to give a formal presentation to the campus community upon completion of the research project. Students will be encouraged to present their findings at a national or regional Forensic Science conference.

FRSC 8813 - Forensic Scien Tech Internship, 3 Credits

Prerequisite(s): FRSC 7104 with C or better
Level: Upper
This course is intended for students in their final year of the four-year Forensic Science Technology curriculum. Students are required to complete a supervised internship at an approved off-campus site. Students will work under the supervision of a qualified Forensic Science Administrator, Forensic Scientist, or other qualified personnel to whom they are assigned. Students will also receive college faculty consultation. The internship is designed to enable students to obtain actual work experience in theoretical and application-based procedures previously studied. This internship consists of 120 hours, which can be completed on a full-time basis (40 hours/week for three weeks) or on a part-time basis over an extended period of time (e.g. 8 hours/week for 15 weeks). All students will be required to give a formal presentation to the campus community following completion of the internship.

FRSC 8900 - Directed Study, 1 to 6 Credits

Prerequisite(s): CHEM 6614 with C or better
Level: Upper
This course is designed to allow students to pursue advanced work in an area of special interest or obtain extended internship opportunities in Forensic Science Technology. A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor, to the Forensic Science Technology Program director, and to the department chair. The instructor and student will confer regularly regarding the progress of the study.

FINANCIAL SERVICES MANAG

FSMA 4900 - Directed Study, 1 to 6 Credits

Level: Lower
A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chair. The instructor and student will confer regularly regarding the process of the study.

FSMA 5003 - Investment Planning, 3 Credits

Prerequisite(s): BUAD 4133 with D or better and BUAD 4203 with D or better
Level: Upper
This course teaches the student how to prudently plan investments to take maximum advantage of opportunities as they arise. Prudent planning includes the ability to relate the present changing economic environment to investment prices and determining if those prices are related to traditional fundamentals of value. The student will also be able to construct portfolios and analyze the social impact of investment choices. Tax implications of various choices will also be discussed.

FSMA 5103 - Tax Planning, 3 Credits

Prerequisite(s): ACCT 3453 with D or better
Level: Upper
This course covers tax-planning considerations for both individuals and businesses. The students will analyze current tax laws and the steps involved in managing one's tax liability by

using IRS regulations as part of an overall investment strategy. A final project will be required. The students will be given a set of facts and an overall objective. They must then research the applicable tax laws, recommend a course of action, and defend that course of action with the supporting IRS regulations. An oral and written presentation of the student's project will be required.

FSMA 5900 - Directed Study, 1 to 6 Credits

Level: Upper

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chair. The instructor and student will confer regularly regarding the process of the study.

FSMA 6003 - Employee Benefit Planning, 3 Credits

Prerequisite(s):

Level: Upper

This course will enable the student to design an employee benefit plan that encompasses the client's stated goals and objectives while keeping the plan in compliance with federal regulations. A capstone project will be required. The capstone project will consist of a given set of facts, goals and objectives with which the student must design an employee benefits plan, keeping within the constraints assigned and using the knowledge acquired in the course.

FSMA 7023 - Estate Planning, 3 Credits

Prerequisite(s): BUAD 3043 with D or better or (BUAD 7023 with D or better and BUAD 4193 with D or better and FSMA 5003 with D or better and FSMA 5103 with D or better)

Level: Upper

This course is designed to expose students to the estate planning process. It explores the many issues to consider when assisting people to enhance and maintain their financial welfare. Emphasis is not only on the arrangements for the disposition of property at death, but also on steps that can be taken to increase overall family wealth and security while still alive. Topics include, but are not limited to, wills, trusts, property ownership, future interests, long term care planning, fraudulent conveyances, as well as gift and estate taxation.

FSMA 7103 - Money & Banking, 3 Credits

Prerequisite(s): ECON 1013 with D or better and ECON 2023 with D or better

Level: Upper

This course is an exploration of the role and importance of money in effective monetary policy as a solution for inflation and unemployment. The operation, function, and structure of the banking system and the functions of the central banking system will be the focus. The role of monetary theories, money management, and monetary policy will also be studied. The theoretical foundations of commercial and central banking will be discussed within the context of general economic activity.

FSMA 7123 - Pers Finan Planning Capstone, 3 Credits

Prerequisite(s): BUAD 4203 with D or better and BUAD 4193 with D or better and BUAD 5033 with D or better * and FSMA 7023 with D or better * and FSMA 5003 with D or better * and FSMA 5103 with D or better * and FSMA 7103 with D or better *

Corequisite(s):

Level: Upper

This course will engage the student in critical thinking and decision-making about personal financial management topics in the context of the financial planning process. Students can meet the objectives of this course by developing one or more comprehensive financial plans that are presented in written and oral formats. Plans may be based on prepared directed cases, prepared open-ended cases, or on actual client households. Students are exposed to cases involving a broad spectrum of financial planning issues rather than single-issue cases. Students will be required to complete two hypothetical directed cases, one written comprehensive financial plan, and an oral presentation of the comprehensive financial plan. This is the Capstone course in the financial planning curriculum.

FSMA 8112 - Financial Planning Internship, 12 Credits

Level: Upper

Students complete 15 weeks of supervised field work in a selected financial service provider setting. The student must be engaged in bona fide financial planning work in at least one of the six core areas of investment planning, tax planning, estate planning, retirement planning, employee benefit planning, or insurance/risk management. Students carry out a planned program of educational experiences under direct supervision of an owner, manager or supervisor of financial services and/or financial planning in an organization.

HISTORY

HIST 1113 - Hist of West Civil Since 1648, 3 Credits

Level: Lower
Course Attributes: Gen Ed - Western Civilization, Liberal Arts and Science
This course provides an introduction to the political, military, intellectual, cultural, technological, religious, and economic features of western civilization from the early modern period to the twenty-first century. It also considers the relationship between Europe and the United States, and between Europe and the wider world. Finally, the course discusses contemporary Europe.

HIST 1123 - History of the Mafia, 3 Credits

Level: Lower
The course examines the history of the Mafia from its origins to the present day. How the Mafia works and has succeeded as well as approaches, including those by civil society organizations, to combatting the Mafia are also examined. Attention is paid to examples of Mafia enterprises, its past and present role in politics, and its evolution from a regional organization to one with an international reach. A research project, with both a paper and an oral presentation, is required.

HIST 1143 - Surv of American History I, 3 Credits

Level: Lower
Course Attributes: Gen Ed - American History, Liberal Arts and Science
This course is an introductory survey of American history from the early Native Americans and European colonization through the Civil War and Reconstruction. Topics include native cultures, European heritage, the colonial experience, revolution and the new republic. Emphasis will be placed on the formation of the Constitution, reform movements and political compromises. Special attention will be paid to the common institutions in American society and their affects on different groups.

HIST 2003 - Survey of NY State History, 3 Credits

Prerequisite(s): HIST 1143 with D or better or HIST 2153 with D or better
Level: Lower
Course Attributes: Liberal Arts and Science
Students will be introduced to the history of New York State, from the pre-colonial Iroquoian hegemony to modern New York. The focus will be on the social, political, cultural, and economic developments and events that made New York the Empire State. Special emphasis will be placed on the individuals who contributed to state growth in these areas. Students will complete a research paper/project.

HIST 2153 - Surv of American History II, 3 Credits

Level: Lower
Course Attributes: Gen Ed - American History, Liberal Arts and Science
This course is an introductory survey of American History from the Civil War and Reconstruction to the present. Topics include western migration, the impact of industrialization and urbanization, the rise of organized labor and the rise of the United States as a world power. The course will cover aspects of the social, political, and economic life of the people of the United States, with a special focus on unity and diversity, during the 19th - 21st centuries.

HIST 2900 - Directed Study, 1 to 4 Credits

Level: Lower
This course allows students who have successfully completed a history course to continue study in that subject. A student may contract for one to four credit hours. However, directed study may be contracted by a student only with the approval of the directing instructor and

the department chairperson.

HIST 5133 - Africa and the West, 3 Credits

Prerequisite(s): HIST 1113 with D or better
Level: Upper
Course Attributes: Gen Ed - Old World Civ, Liberal Arts and Science
This course will introduce students to the relationship between Western countries and Africa over the last five centuries and today. Particular attention will be paid to the political, economic, and cultural links established between Europe and Africa, including the imperialist occupation and exploitation of Africa by Europeans. Historical topics covered will include the slave trade; European exploration of Africa; the diaspora of Africans in the West, and of Europeans in Africa; racial attitudes; patterns of economic development and impoverishment; the political evolution of European colonial regimes in Africa; and the process of decolonization, including its political, economic, and social consequences. Contemporary topics covered will include political instability and poverty in Africa; the AIDS crisis; the legacy of colonialism and white settlement; and competing approaches to African development. Students will also be introduced to the research methods and analytical techniques used by historians and social scientists to interpret Africa's past, present, and future. All students will be required to complete an individually-negotiated final project.

HEALTH TECHNOLOGY

HLTH 1003 - Found of Peer Health Education, 3 Credits

Level: Lower
This course is designed to inspire, teach, and engage students in the arena of peer health education. Theoretical concepts and practical perspectives of peer education will be introduced, with a focus on health issues. Students will develop communication, assertiveness, facilitation, and presentation skills. They will also participate in experiential learning through designing and delivering their own peer health education program using the skills and training through class instruction.

HLTH 1013 - Essentials of Exercise Physiol, 3 Credits

Level: Lower
Course Attributes: Gen Ed - Natural Sciences
This is an internet-based course intended for both science and non-science majors covering the basic study of exercise physiology. Topics include the role of nutrition in energy-producing pathways and human growth and development; nutritional and common pharmacological aids used to support and enhance exercise and athletic performance; study of metabolic production of energy and its application in the human capacity for work; and study of select body systems and the principles of exercise training with resultant physiological adaptations that could be expected from such training. The course concludes with a study of the role of exercise in the maintenance of health and the prevention of disease.

HLTH 1313 - Nutrition, 3 Credits

Level: Lower
Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science
This course is intended for both the science and non-science major. Coverage will include the fundamental biochemical aspects of the essential nutrients and their effects when consumed in less than recommended or excessive amounts. These nutritional facts will help answer some of the questions brought forward concerning the relationship between food and heart disease, weight control, preservatives, cancer, athletic performance, vegetarianism, pregnancy and lactation, just to name a few. Beyond these facts will be the understanding of the non-nutrient characteristics of food as related to culture, family and society. Most importantly, this course will present the tools necessary to properly evaluate the purchase and preparation of nutritious foods via personal assessment.

HLTH 4900 - Directed Study, 1 to 4 Credits

Level: Lower
A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

HORTICULTURE

HORT 2213 - Landscape Co-Op Work Training, 3 Credits

Level: Lower

A student will work for 10 weeks with a landscape business. An approved cooperating employer will be chosen by the student with assistance from the Landscape Development staff. Satisfactory completion of the work experience will involve the completion of a daily work log, final report for the 10 weeks of on the job experience, and a work performance evaluation by the employer.

HORT 2243 - Landscape Design Principles, 3 Credits

Level: Lower

An introduction to the various elements which make a residential landscape functional, aesthetic, and environmentally sound. Emphasis will be on the use of basic design principles in a coordinated design process to achieve a functional and aesthetic landscape design which will satisfy the client's needs.

HORT 2543 - Herbaceous/Bedding Plants, 3 Credits

Prerequisite(s):

Level: Lower

This course covers the terminology, nomenclature, morphology, identification, culture, propagation, and design theory related to a selected group of herbaceous ornamental plants. Major topics include bulbous plants, annuals, biennials, and perennials.

HORT 2544 - Woody Plants, 4 Credits

Level: Lower

A study of both evergreen and deciduous trees and shrubs, vines and ground covers. Students will learn identification, growth habits, cultural requirements, landscape uses, and how to identify plants using a vegetative key.

HORT 2654 - Drafting & Land Measurement, 4 Credits

Level: Lower

An introduction to basic drawing, drafting, measuring and surveying techniques used in landscape design and construction. Drawing and drafting skills to be taught include: line weight, symbols, scale drawing, dimensioning, plan view and elevation drawing, and field sketching. Measuring and surveying skills to be taught include the use and care of a dumpy level, tapes and leveling rod, methods for taping, differential leveling, setting grade and location stakes, and computations for area and volume measuring. Skills will be developed through the use of measuring equipment and techniques in abstract and applied problem solving situations.

HORT 3011 - Prof Practice - Landscape, 1 Credit

Level: Lower

The application of classroom theory to practical situations in the field. Students will be assigned work projects on the campus which typify common landscape work experiences. These hands-on experiences will help the student to develop skills in the installation of plants and landscapes, in the use of tools and equipment, in the supervision of landscape jobs, and in the management of landscapes.

HORT 3543 - Small Property Design, 3 Credits

Prerequisite(s): HORT 2243 with D or better

Level: Lower

A continuation of Landscape Design Principles with application of the fundamental principles, plus advanced problems in residential site development. Students will also learn how to illustrate and develop planting specifications. There is one lecture and two 2-hour labs/week.

HORT 3654 - Landscape Construction, 4 Credits

Prerequisite(s): HORT 2243 with D or better and HORT 2011 with D or better

Level: Lower

Landscape construction is a study of drainage and construction techniques as applied to the landscape. Emphasis is placed on hands-on experience in the installation of drainage projects and the construction of landscape features. The course will also provide information

on the relationship of building and zoning codes to the landscape field.

HORT 4023 - Landscape AutoCAD Studio IV, 3 Credits
Prerequisite(s): HORT 2243 with D or better or HORT 3543 with D or better
Level: Lower
This course provides the student with the skills necessary to use AutoCAD in the design of the urban landscapes. This studio will provide students with the skills and techniques necessary to produce a professional set of landscape construction documents using the computer. Students will combine their skills of hand drafting with the accuracy of the computer to complete an urban design project.

HORT 4723 - Landscape Business Practices, 3 Credits
Prerequisite(s): HORT 3654 with D or better and HORT 3543 with D or better
Level: Lower
This course completes the landscape design training with skill development in preparing the landscape proposal. Students will learn commonly used business practices to survive in a competitive world; such as preparing cost estimates, reading and preparing contracts and specifications. Case studies will be used frequently.

HORT 4900 - Directed Study, 1 to 4 Credits
Level: Lower
Students must have permission of their advisor and the department chairperson before enrollment. An outline of the study must be submitted before enrollment. Directed study provides an opportunity to continue study in an area of special interest. Study may be carried out within any curriculum in the department in which the student is enrolled.

HEALTH & PHYSICAL EDUC

HPED 1031 - Volleyball, 1 Credit
Level: Lower
To develop the skills of passing, serving, spiking, and blocking.

HPED 1111 - Health and Wellness, 1 Credit
Level: Lower
To provide students with a better understanding of the human body and concepts, attitudes and practices concerning Health and Wellness. This course focuses on all the dimensions of Wellness.

HPED 1121 - Basketball, 1 Credit
Level: Lower
This course is designed to expose the student to the many basketball skills and types of playing.

HPED 1131 - Indoor Soccer, 1 Credit
Level: Lower
To develop skills, knowledge, and proper fitness levels pertaining to soccer.

HPED 1151 - Ultimate Frisbee, 1 Credit
Level: Lower
Ultimate Frisbee is an exciting and rapidly growing sport. Most people can find opportunities to play within their own communities. The purpose of this course is to cover all the rules and regulations of the game Ultimate Frisbee. The students will be given the opportunity to play and develop certain skills of the sport. This sport could be a lifelong activity that promotes a healthier lifestyle by obtaining certain cardiovascular benefits from participating in this sport.

HPED 1171 - Aerobics, 1 Credit
Level: Lower
Aerobics to music where the student will learn sound lifetime habits of fitness.

HPED 1211 - Cross Country Skiing, 1 Credit
Level: Lower
To develop the skills necessary to cross-country ski on a variety of terrains and appreciation

for the outdoors.

HPED 1221 - Power Volleyball, 1 Credit
Level: Lower
To develop the skills of passing, serving, spiking, and blocking.

HPED 1251 - Women's Fitness, 1 Credit
Level: Lower
High-impact aerobics to music where the student will learn sound lifetime habits of fitness.

HPED 1341 - Softball, 1 Credit
Level: Lower
To provide the students with the softball skills necessary to participate in the game recreationally.

HPED 1603 - Prin of Org PE & Athletics, 3 Credits
Level: Lower
A course to provide each student with a workable frame of reference concerning the principles, organization, and philosophical aspects of physical education and athletics.

HPED 2141 - Tennis, 1 Credit
Level: Lower
Learning various techniques in tennis as well as different strokes (forehand, backhand, volley). Knowing the rules of the game.

HPED 2603 - Physical Fitness & Condition, 3 Credits
Level: Lower
This course provides the student with a general frame of reference concerning physical fitness, health-related fitness and motor skill-related fitness, as it relates to individual needs and interest.

HPED 2703 - Introduction to Recreation, 3 Credits
Level: Lower
This course provides the student with an introduction to the history, theory, and philosophy of the recreation movement and its relation to individuals and groups in our changing society. Emphasis will be placed on orienting students to recreation leadership as a vocation within the structure of community recreation (public, private and commercial).

HPED 2900 - Directed Study, 1 to 4 Credits
Level: Lower
A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

HPED 3061 - Physical Fitness, 1 Credit
Level: Lower
To learn the basic principles of conditioning. The student will be provided an individualized fitness program designed to improve muscular strength and endurance, cardio-vascular wellness, flexibility, and body composition.

HPED 4103 - Personal Health, 3 Credits
Level: Lower
This course provides students the opportunity to develop sound concepts in health and health-related areas in order to better understand the environment in which they live. Strong emphasis will be placed on current health issues in the area of human sexuality, mental and emotional health, drug and substance abuse, and the development of sound health practices for the individual in today's society.

HUMAN SERVICES

HUSR 1013 - Empower Skills for Fam Work I, 3 Credits
Level: Lower
This course is designed to provide students with the basic tools to become frontline human

service workers. The course focuses on teaching the skills and competencies needed to provide a strength-based or empowerment-based approach to family development. Through this course, students will learn how to help families to attain healthy self-reliance, to assess their own needs, and to better understand the skills and attributes needed to be successful in the field. This course is the first part of a two course sequence. Once both courses are completed, students will be eligible to apply for the Family Development Credential through Cornell University.

HUSR 1033 - Empower Skills For Fam Work II, 3 Credits

Prerequisite(s): HUSR 1013 with D or better
Corequisite(s): HUSR 1074
Level: Lower
This course is a continuation of Empowerment Skills for Family Workers - Part I. The purpose is to provide students with the basic tools to become frontline human service workers and to provide knowledge of the organizational structures in human services agencies. In this course, students will learn how to help families develop goals and to meet their needs using community resources. Students completing the course will be eligible to apply for the Family Development Credential through Cornell University.

HUSR 1074 - Practicum in Human Services, 4 Credits

Prerequisite(s): PSYC 1063 with C or better
Level: Lower
This course is designed to provide students with supervised work experience in human services agencies. In addition, students participate in a weekly class that combines the principle of small group dynamics with the acquired skills, knowledge and experience that the students have obtained from their field experience.

HUSR 1303 - Intro Alcoholsm/Substnc Abuse, 3 Credits

Level: Lower
This course is designed to increase knowledge of alcoholism and alcohol abuse. The disease concept of alcoholism will be explained, as well as the physiological, psychological, and sociological impact of alcohol on the individual. Consequences of alcohol abuse on the family and society will be examined.

HUSR 1313 - Alcoholsm/Substnc Abse Cnslng, 3 Credits

Prerequisite(s): HUSR 1303 with D or better
Level: Lower
This course is intended to provide students with the basic skills necessary to counsel individuals and families with substance abuse problems. Through lecture and assigned readings, students will be educated on the different models of treatment that are currently being followed, as well as specific techniques for effective intervention at all levels of care. Basic tools for assessment, diagnosis, treatment planning and behavior change strategies will be discussed. Additionally, students will focus on actual skills acquisition through direct practice and feedback via role-plays, videotaping and group discussion. The integration of specific knowledge and skills through practice is the overall goal of this course.

HUSR 1323 - Spcl Pblm Alchl/Sub Abs Trtmt, 3 Credits

Prerequisite(s): HUSR 1303 with D or better
Level: Lower
This course is designed for students specializing in the field of chemical dependency treatment, and will focus on the special issues, problems and treatment dilemmas in the field of alcoholism and substance abuse counseling. A significant portion of class time will be devoted to ethical decision making and clarifying healthy professional boundaries. Through lecture, assigned readings, group presentations and class discussions, students will develop an increased awareness and understanding of the multiplicity of problems potentially coexisting with the presenting substance problem. These include, but are not limited to, a history of family violence, neglect, incest, other substance abuse/dependence, psychiatric disorders, and AIDS. Students will also develop an awareness of the special issues faced by particular subgroups, and will learn specific intervention strategies to be utilized in the treatment of these groups, which include, but are not limited to, adolescents, women, the elderly, gays and lesbians, and the non-white population.

HUSR 2083 - Introduction to Human Services, 3 Credits

Level: Lower
This course is designed to give students a working knowledge of the human services profession: its goals and objectives, structure and organization, legal and ethical standards and client populations. An emphasis will be placed on the generalist approach to human services.

HUSR 2093 - Domestic Violence, 3 Credits
Level: Lower
In this course students will learn and apply the basic concepts, principles, and issues involved in domestic violence. Special attention will be given to biological, psychological, and sociological perspectives. The course work will focus on causes, identifications, types, reporting, consequences, treatments, laws, legal remedies, interim safety, and prevention of child abuse, spousal abuse, and elder abuse. The complex relationship between external factors, i.e. alcohol and other substances, and violence at home will be examined.

HUSR 2900 - Directed Study, 1 to 4 Credits
Level: Lower
A course that allows students who have successfully completed a previous course in Human Services to continue study in that subject. A student may contract for one to four credit hours. However, directed study may be contracted by a student only with the approval of the directing instructor and the department chairperson.

HUSR 4033 - Issues in Human Services, 3 Credits
Level: Lower
Major issues related to the field of human services are discussed in this course. Emphasis is placed on the ethical standards within the field of Human Services. Students are expected to develop the necessary skills, values and knowledge to enhance their ability to gain employment and advance within the human service profession.

HUSR 4900 - Directed Study, 1 to 6 Credits
Level: Lower
A student may contract for an independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

HUSR 5003 - Community Organizations, 3 Credits
Prerequisite(s): HUSR 2083 with D or better and SOCI 1163 with D or better
Level: Upper
This course is an upper level human services methods course focusing on major theories and methods of community organizing with applications in urban, suburban, transitional and rural communities. It provides a framework for assessment, and intervention with regard to the structures and processes of neighborhoods, communities, and organizations as they influence and are influenced by the many stakeholders in the human services arena. It explores the potential for the use of technology in organizing communities.

HUSR 5103 - Social Policy & Human Services, 3 Credits
Prerequisite(s): HUSR 4033 with D or better
Level: Upper
This course examines the evolution of American social problems and the response of the social welfare policy systems and programs at the national, state, regional and local levels. A basic framework for comparison with international social welfare systems will also be provided. The course will focus on the impact of social policy on the delivery of human services and will emphasize individual communication skills, research and analysis of social welfare policy. Students will engage in debates, letter writing, and other class presentations. Applications in social welfare advocacy at all levels will be explored.

HUSR 5203 - Grants Contracts Organ Adv HS, 3 Credits
Level: Upper
This course will provide students with the tools needed to be successful with proposal writing, program and strategic planning, fund raising and institutional advancement. Specific areas to be addressed will include how to identify appropriate funding sources, how to market and organize charitable fundraising events and campaigns, how to complete applications for

funding assistance, and how to respond to requests for proposals from public and private resources.

HUSR 5213 - Case Management Systems, 3 Credits

Prerequisite(s): HUSR 2083 with D or better and PSYC 1063 with D or better
Level: Upper
This course in case management will familiarize students with various approaches used by human services professionals to meet the service needs of the client. The use of case management with children and families, elderly, chronically mentally ill, developmental and physically disabled, and those in health care settings will be investigated. Approaches used in crisis management will be compared with those used in chronic conditions. Skills in case management will be demonstrated including networking, goal setting, recording, case monitoring, advocacy, and outcome evaluation. Use of automated data systems and electronic records in case management will be explored.

HUSR 5314 - Human Serv Field Practic & Sem, 14 Credits

Level: Upper
This seminar course is taken concurrently with a structured, supervised work experience in a human service agency. Students must successfully complete a minimum of 400 clock hours of work in human services management at an approved human services agency. In addition, students participate in this weekly seminar that synthesizes theoretical knowledge and didactic learning with the acquired skills, knowledge, and experience that the students have obtained through their field experience. The internship may be at distant locations and taken full-time for a semester. Faculty supervision and communication may be through various technologies that students must utilize. All enrolled students meet together in seminar one afternoon per week for three hours. Concurrently students are in a one-semester block placement of 40 hours per week for the academic semester. With program approval, an optional two-semester placement of 20 hours per week in fall and spring semesters may be permitted.

INDUSTRIAL DISTRIBUTION

IDIS 5900 - Directed Study - Upper Level, 1 to 4 Credits

Level: Upper
A student may contract for an independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

ITALIAN

ITAL 1303 - Italian I, 3 Credits

Level: Lower
Course Attributes: Gen Ed - Foreign Languages, Liberal Arts and Science
This course focuses on developing the student's ability to speak, to write, and to read Italian. Additional emphasis is given to learning about Italian culture. Instruction centers on oral communication, written communication, reading for comprehension, and cultural awareness. Writing and speaking are emphasized in assignments related to readings, class discussions, and lectures.

ITAL 2203 - Italian II, 3 Credits

Prerequisite(s): ITAL 1303 with D or better
Level: Lower
The Pre-Intermediate course is designed to make the students able to understand Italian sentences and frequently used expressions related to areas of most immediate relevance (e.g. very basic personal and family information, shopping, local geography, employment) and to communicate in simple tasks requiring a simple and direct exchange of information on familiar and routine matters.

ITAL 2303 - Italian II, 3 Credits

Prerequisite(s): ITAL 1303 with D or better
Level: Lower
This course focuses on developing the student's ability to understand Italian sentences and

frequently used expressions that relate to personal and family information, shopping, local geography, and employment. Oral communication is emphasized in simple tasks that require a direct exchange of information on familiar and routine matters. Writing is emphasized in assignments related to readings, class discussions, and lectures. The course focuses on an intermediate level of reading, speaking, and writing in Italian.

LANGUAGE

LANG 3900 - Directed Study, 1 to 4 Credits

Level: Lower

Directed Study may be arranged in the academic areas of art, drama, English, foreign language, music, philosophy, or speech. The student may contract for one-to-four credit hours of independent study through an arrangement with an instructor and the Department Chair. To be substituted for the listed Humanities requirements for the Associate Degree, Directed Study courses must be co-designed by the Department Chair. The instructor and student shall confer regularly regarding the progress of the study.

LANG 4900 - Directed Study, 1 to 4 Credits

Level: Lower

The student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student must submit a plan acceptable to the instructor and the department chairperson. To be substituted for the listed humanities requirements, a directed study course must be so designated by the department chair. Writing is continued in assignments related to readings, class discussions, and lectures.

LITERATURE

LITR 2033 - The Short Story, 3 Credits

Prerequisite(s): COMP 1503 with D or better

Level: Lower

Course Attributes: Gen Ed - Humanities, Liberal Arts and Science

The Short Story introduces the student to the study and appreciation of the short story as an art form. Reading selections will include stories by such masters as Joyce, Lawrence, Faulkner, Hemingway, and O'Connor, as well as recent works by Olson, Paley, and Barthelme. Writing is continued in assignments related to readings, class discussions, and lectures.

LITR 2343 - Children's Literature, 3 Credits

Prerequisite(s): COMP 1503 with D or better

Level: Lower

Course Attributes: Gen Ed - Humanities, Liberal Arts and Science

Children's Literature covers a broad range of literature for children from preschool to age twelve, as they encounter it through the home, the library, and the school. Picture books, the classics, folk and fairy tales, novels, and plays for children are presented in a critical context. Writing is continued in assignments related to readings, class discussions, and lectures.

LITR 2503 - Identity and Literature, 3 Credits

Prerequisite(s): COMP 1503 with D or better

Level: Lower

Course Attributes: Gen Ed - Humanities, Liberal Arts and Science

Using both classic and contemporary literature, this course will explore how gender, race, class, and the influence of family and relationships affect how we see ourselves and how we are seen by others. The course will introduce the terms of literary study and analysis and include reading, discussion, papers, exams, and presentations. Writing is continued in assignments related to readings, class discussions, and lectures.

LITR 2603 - Introduction to Literature, 3 Credits

Prerequisite(s): COMP 1503 with D or better

Level: Lower

Course Attributes: Gen Ed - Humanities, Liberal Arts and Science

This course focuses on literature, thought, and language. Writing is continued in assignments related to readings, class discussions, and lectures. Selections include novels, short stories,

poems, and plays.

LITR 2703 - Sci Fi in the 20th Century, 3 Credits

Prerequisite(s): COMP 1503 with D or better
Level: Lower
Course Attributes: Gen Ed - Humanities, Liberal Arts and Science
Major representative works of science fiction are read and discussed. Works selected contain the major themes present in science fiction in the 20th century. Readings, class discussion, and lectures are the basis for oral reports and written assignments which continue training in composition and encourage a broadening of interest in science and technology. Writing is continued in assignments related to readings, class discussions, and lectures.

LITR 2813 - Introduction to Film, 3 Credits

Prerequisite(s): COMP 1503 with D or better
Level: Lower
Course Attributes: Gen Ed - Humanities, Liberal Arts and Science
This course focuses on film, thought, and language through the viewing and analysis of representative fiction films. Writing is continued in assignments related to film viewing, class discussions, and lectures. From readings and lectures, the student will become acquainted with basic technical terms and film theory, thus facilitating analysis of the more complex aspects of film history and production. Permission of the instructor may supersede prerequisite. Writing is continued in assignments related to readings, class discussions, and lectures.

LITR 2900 - Directed Study, 1 to 4 Credits

Level: Lower
Course Attributes: Gen Ed - Humanities
The student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student must submit a plan acceptable to the instructor, and the department chairperson. To be substituted for the listed humanities requirements, a directed study course must be so designated by the department chair. Writing is continued in assignments related to readings, class discussions, and lectures.

LITR 2903 - Images of Women in Fiction, 3 Credits

Prerequisite(s): COMP 1503 with D or better
Level: Lower
Course Attributes: Gen Ed - Humanities, Liberal Arts and Science
Images of Women in Fiction is a reading and discussion course of significant representations of women in American and British fiction with emphasis on works that present the female in a variety of roles. Writing is continued in assignments and oral reports related to readings, class discussions, and lectures.

LITR 2913 - Introduction to Poetry, 3 Credits

Prerequisite(s): COMP 1503 with C or better
Level: Lower
Course Attributes: Gen Ed - Humanities, Liberal Arts and Science
This course focuses on a survey of the principles of poetry, the literary traditions of poetry, and the critical terminology to understand, to define, and to analyze poetry. Special attention is given to poetry written during the twentieth century. Classroom exercises and discussions emphasize the importance of close literary analysis; writing skills introduced in freshman composition and introduction to literature are reinforced.

LITR 3133 - Creative Writing:Travel & Expr, 3 Credits

Prerequisite(s): COMP 1503 with D or better
Level: Lower
This course will have students write creative non-fiction, focusing on the experience of travel. Student will read and be exposed to different works of non-fiction (travel writing and instructional, how-to writing), and published fiction (poetry, stories, and novels) revolving around travel. Class readings will also expose students to various writing styles and provide examples of the successes and strategies of other writers. Class time will be spent discussing the writer's craft and the assigned readings, and critiquing student writing in a workshop setting.

LITR 3233 - Survey of American Lit I, 3 Credits

Prerequisite(s): COMP 1503 with D or better and LITR 2603 with D or better
Level: Lower
Course Attributes: Gen Ed - Humanities, Liberal Arts and Science
Survey of American Literature I is the first of two courses surveying American Literature from the time of the Puritans to the present; it stresses the development of the American voice in literature through the critical study of such authors as Edwards, Franklin, Poe, Whitman, Emerson, Thoreau, Hawthorne, and Melville. Writing is continued in assignments related to readings, class discussions, and lectures.

LITR 3333 - Survey of British Literature I, 3 Credits

Prerequisite(s): COMP 1503 with D or better and LITR 2603 with D or better
Level: Lower
Survey of British Literature I is the first of two courses surveying British literature from the Middle Ages to the present; this course examines literature in the Middle Ages, the Early Modern Period, and the Restoration and eighteenth century. Emphasis is placed on the critical study of works such as Beowulf and authors such as Malory, Chaucer, Julian of Norwich, Spenser, Marlowe, Shakespeare, Milton, Dryden, Defoe, Swift, Pope, Johnson, and Boswell. Writing is emphasized in assignments related to readings, class discussions, and lectures.

LITR 4333 - Survey of American Lit II, 3 Credits

Prerequisite(s): COMP 1503 with D or better and LITR 2603 with D or better
Level: Lower
Course Attributes: Gen Ed - Humanities, Liberal Arts and Science
This course is a continuation of Survey of American Literature I with special attention to the works of Twain, Howells, Dickinson, James, Crane, Dreiser, Robinson, Frost, O'Neill, Eliot, Hemingway, Faulkner, Baldwin, and Updike. Writing is continued in assignments related to readings, class discussions, and lectures.

LITR 4900 - Directed Study, 1 to 4 Credits

Level: Lower
A student may contract for an independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

LITR 7003 - Literature and Nature, 3 Credits

Prerequisite(s): COMP 1503 with D or better
Level: Upper
Course Attributes: Gen Ed - Humanities, Liberal Arts and Science
This course explores the relationship between humans and the natural world expressed in the literary form of nature writing. The thematic movement from discovery and description to environment, ecology, ecocriticism, and sustainability will be emphasized. Readings will be concentrated in American Literature, but works from other countries and cultures will be included. A variety of literary genres, including poems, journals, nonfiction essays, short stories, travel narratives, and excerpts from novels and nonfiction books will be examined. The purpose of this course is to introduce students to the canon of nature writing and to track this literary movement into emerging texts that examine the political, environmental, and technological themes of ecology and sustainability in contemporary culture. Students will be required to write a substantial research paper that analyzes an issue directly related to their major, and they will present their research at the end of the semester. Short writing exercises and exams will also be required. Class sessions will center on student participation and debate, and discussions and writing strategies will employ principles of sound reasoning, critical thinking, and Information Literacy skills.

LITR 7103 - The Drama from Page to Stage, 3 Credits

Prerequisite(s): COMP 1503 with D or better
Level: Upper
This course focuses on the experience of the theater, that is, on plays in production. Students analyze the texts of both contemporary and classic dramas and experience a selected number as actual productions in a field trip to the Stratford Festival in Stratford,

Ontario. Themes for exploration will be drawn from the choice of productions, so will differ each year. The goal of the course will be to expose students to the drama as it was meant to be experienced, through live productions on the stage. The course is also writing-intensive so that it further develops the writing and critical thinking skills introduced in Comp 1503 and other literature and humanities courses, in assignments related to readings, class discussion and theatrical productions, including writing analytical papers on the text or production. Information literacy is further developed through a written research paper, and students will present their findings orally.

LITR 7203 - British Literature Survey, 3 Credits

Prerequisite(s): COMP 1503 with D or better
Level: Upper
This course surveys the major British writers, from the medieval period to the present, in all literary genres. Students analyze the texts and respond to them in writing and in class discussion. Themes for exploration will be drawn from the reading; students will also investigate the contexts that produced the literature. The course is writing-intensive so that it develops the writing and critical thinking skills introduced in COMP 1503 and other literature and humanities courses, in assignments related to readings and discussions, including writing analytical papers on the texts. Information literacy is developed through a research paper.

MATHEMATICS

MATH 1003 - Introductory Algebra*, 3 Credits

Prerequisite(s): MATH 1013 with C* or better or MATH 1024 with D* or better
Level: Lower-Developmental/Remedial Course
Course Attributes: Liberal Arts and Science, Remedial
This course is an introduction to the topics of algebra primarily for those students who do not qualify for more advanced math courses due to lack of background or a long absence from the study of mathematics. The topics covered include properties of real numbers, order of operations, polynomial operations, solutions of first degree equations and inequalities in one variable, systems of linear equations, graphing linear equations and properties of exponents. Students must earn a C or better grade in this course to register for any credit-bearing math courses. This course does not satisfy any degree requirements.

MATH 1004 - Mathematical Concepts*, 4 Credits

Level: Lower-Developmental/Remedial Course
Course Attributes: Remedial
The course will introduce the student to the following topics: order of operations; applications in geometry; simplifying algebraic expressions; exponents; radicals; solving linear equations; modeling; systems of linear equations; and graphing linear equations. Emphasis is placed on reviewing basic arithmetic skills and then completing elementary algebra topics. Students will work on the development of thinking skills through creative problem solving, writing to explain methods and solutions to problems, and collaborative learning.

MATH 1013 - Fundamentals of Math*, 3 Credits

Level: Lower-Developmental/Remedial Course
Course Attributes: Remedial
This course is intended as a tool for students to learn or review fundamental concepts of mathematics. The course provides a bridge to algebra for students who are not ready to successfully complete that study. Topics covered include operations with whole numbers, integers, fractions and decimals. Additional topics include ratios, proportions, percents, measurement, geometric figures and a very basic introduction to algebra. Students must earn a C or better grade in this course to register for the next math course, MATH 1003. This course is often taught in a self-paced-learning format. This course does not satisfy any degree requirements.

MATH 1014 - Algebra Concepts, 4 Credits

Prerequisite(s): MATH 1004 with C* or better
Level: Lower
Course Attributes: Liberal Arts and Science

This course is intended for students who need more preparation to be successful in College Algebra or other courses of that level. Topics covered include: review of first degree equations, systems of equations and inequalities, graphing, polynomials, factoring, radicals and rational exponents, quadratic equations, rational expressions, relations and functions and an introduction to triangle trigonometry. This course prepares students to enter Math 1033 - College Algebra, Math 2124 - Statistical Methods and Analysis, Math 1423 - Explorations in Geometry, Math 1323 - Quantitative Reasoning and Math 2163 - Discrete Mathematics. A grade of C or better is required in Math 1014 to register for these courses. THIS COURSE DOES NOT FULFILL THE GEN-ED MATH REQUIREMENT.

MATH 1024 - Mathematical Concepts*, 4 Credits

Level: Lower-Developmental/Remedial Course
Course Attributes: Remedial
This course will introduce the student to the following topics: order of operations; applications in geometry; simplifying algebraic expressions; exponents; radicals; solving linear equations; modeling; systems of linear equations; and graphing linear equations. Emphasis is placed on reviewing basic arithmetic skills and then completing elementary algebra topics. courses.

MATH 1033 - College Algebra, 3 Credits

Prerequisite(s): MATH 2003 with C or better or MATH 1014 with C or better
Level: Lower
Course Attributes: Gen Ed - Math, Liberal Arts and Science
This course includes topics such as polynomials, radicals, exponents, coordinate geometry, rational expressions and equations, and solutions to linear and quadratic equations. Students are introduced to the concept of functions and their graphs. Additional topics may include conic sections, matrices, variation, and nonlinear inequalities. Emphasis will be placed on problem solving. A graphing calculator is required. Students cannot receive credit for MATH 1033 if they have credit for MATH 1054.

MATH 1034 - College Algebra of Functions, 4 Credits

Prerequisite(s): MATH 1014 with C or better and MATH 2003 with C or better
Level: Lower
This course includes topics such as polynomials, radicals, exponents, coordinate geometry, rational expressions and equations, and solutions to linear and quadratic equations. Students are introduced to the concept of functions and their graphs. Additional topics may include conic sections, matrices, variation, and nonlinear inequalities. Emphasis will be placed on problem solving. A graphing calculator is required. The course is designed to give students additional time above that allotted in MATH 1033 working on mastery of concepts and skills in the student learning outcomes. Students cannot receive credit for MATH 1034 if they have credit for MATH 1033 or for MATH 1054. Students cannot receive credit for MATH 1034 if they have credit for MATH 1063, MATH 1084, or any course for which MATH 1063 or MATH 1084 are prerequisites. A grade of C or better is required to take MATH 2043, College Trigonometry.

MATH 1054 - Precalculus, 4 Credits

Level: Lower
Course Attributes: Gen Ed - Math, Liberal Arts and Science
This course is designed primarily for the student who needs a foundation in algebra and trigonometry for the study of calculus. The concept of function and graphical representation of functions is stressed. Topics covered include: real numbers; algebra of real numbers including equations and inequalities; functions and their graphs including polynomial, rational expressions, logarithmic and exponential, trigonometric; algebra of the trigonometric functions including identities, equations, polar coordinates, complex numbers, systems of equations. Prerequisite: NYS 80 HS Average Math A and B (or Course 1,2,3), plus a 4th year Math, or equivalent.

MATH 1063 - Technical Calculus I, 3 Credits

Prerequisite(s): (MATH 1033 with C or better and MATH 2043 with D or better *) or MATH 1054 with D or better
Level: Lower

Course Attributes: Gen Ed - Math, Liberal Arts and Science
This course includes a review of functions, an introduction to the concept of limits and a study of the techniques of differentiation and integration of algebraic functions with applications to the various technologies. A graphing calculator is required. Credit for MATH 1063 Technical Calculus I will not be given if student receives credit for MATH 1084 Calculus I.

MATH 1083 - Business Calculus, 3 Credits
Prerequisite(s): MATH 1033 with C or better
Level: Lower
Course Attributes: Liberal Arts and Science
A survey of differential calculus and its application to business, including management, finance and economics. Major topics include limits, derivatives, exponential and logarithmic functions and limits, and multivariable functions. Applications include marginals, maxima/minima, growth and decay, linear models. Credit for MATH 1083 will not be allowed if student has received credit for MATH 1063.

MATH 1084 - Calculus I, 4 Credits
Prerequisite(s): MATH 2043 with D or better or MATH 1054 with D or better
Level: Lower
Course Attributes: Gen Ed - Math, Liberal Arts and Science
Designed for the student intending to continue his/her education in mathematics, science or engineering. The course will include a review of functions, an introduction to the concept of limits, and a study of the derivatives and integrals of algebraic and transcendental functions and their applications. A graphing calculator is required. Students cannot receive credit for both MATH 1063 and MATH 1084.

MATH 1113 - Statistical Concepts, 3 Credits
Level: Lower
Course Attributes: Gen Ed - Math, Liberal Arts and Science
This course provides an introduction to and understanding of the basic concepts of statistics. Actual computation will be minimal; computers will be used whenever calculations are necessary. Emphasis will be placed on the meaning of statistical results. Content will include sampling, experiments, measurement, organizing data, and statistical indices. Optional topics include probability, time trends, survey design and basic inference concepts. Requires a C or better in 1003 or 1004 or 1024 or an appropriate placement score.

MATH 1123 - Statistics I, 3 Credits
Prerequisite(s): MATH 1003 with C or better * or MATH 1004 with C* or better or MATH 1024 with C or better
Level: Lower
Course Attributes: Gen Ed - Math, Liberal Arts and Science
This course is the first of a two semester sequence in statistics. It covers mainly descriptive techniques such as data collection, organization techniques, measures of center, spread, and position. Other topics covered include: probability, probability distributions, normal and binomial distributions, correlation and regression. Requires a C or better in 1003 or 1004 or 1024 or an appropriate placement score.

MATH 1143 - Liberal Arts Math I, 3 Credits
Prerequisite(s): MATH 1003 with C or better or MATH 1004 with C* or better or MATH 1024 with C or better
Level: Lower
Course Attributes: Gen Ed - Math, Liberal Arts and Science
This is a one semester course whose basic objective is to develop an interest and appreciation for mathematics in students with little background in the subject. Included in the course are topics from the following areas: problem solving, inductive reasoning, logic, sets, probability, statistics, consumer math, and geometry. Additional topics from the following areas will be included as time permits: history of math, number systems, metric, algebra, linear programming, finite math, matrices, computer applications. Requires a C or better in 1003 or 1004 or 1024 or an appropriate placement score.

MATH 1323 - Quantitative Reasoning, 3 Credits
Prerequisite(s): MATH 2003 with C or better or MATH 1014 with C or better or MATH 1143

with D or better
Level: Lower
Course Attributes: Gen Ed - Math
This course is designed for curricula where quantitative reasoning is required. The course content includes critical thinking skills, arithmetic and algebra concepts, statistical concepts, financial concepts, as well as numerical systems and applications A graphing calculator is required. This is an entry level course and requires three years of high school math equivalent to NYS Course 1, 2, and 3; or Math A and B.

MATH 1423 - Explorations in Geometry, 3 Credits
Prerequisite(s): MATH 2003 with C or better or MATH 1014 with C or better
Level: Lower
Course Attributes: Gen Ed - Math, Liberal Arts and Science
The content of this course will apply geometrical truths in a variety of contexts, including knots, tessellations and graphical symmetry. In addition, it will cover some principles of Gestalt perceptual properties, the exploration and creation of models of geometric art from other cultures, and any additional material deemed suitable by the instructor. The material will involve experimentation by the student in a geometric forum to discover or verify properties of 2- and 3-dimensional objects and patterns. The software AutoCAD or a similar program for drawing on a computer as well as 2- and 3- dimensional modeling tools will be used extensively to enhance spatial intelligence skills and awareness of properties. Students will learn to analyze designs by indentifying their geometric component parts and create designs by combining geometric shapes. They will identify the rules used in creating the design and will create new designs by varying some of those rules.

MATH 2003 - Intermediate Algebra, 3 Credits
Prerequisite(s): MATH 1003 with C or better or MATH 1024 with C or better or MATH 1004 with C or better
Level: Lower
Course Attributes: Gen Ed - Math, Liberal Arts and Science
This course includes topics in algebra such as polynomials, algebraic fractions, variation, rational exponents, and operations with radicals. Also covered are solutions of rational, radical, and quadratic equations. Additional topics may include systems of equations and quadratic inequalities. This course does not satisfy any graduation requirements for TAC/ABET accredited engineering technology programs or Liberal Arts Math/Science programs. A grade of D will not be accepted if you need this as a prerequisite for another math course.

MATH 2043 - College Trigonometry, 3 Credits
Prerequisite(s): MATH 1033 with C or better
Level: Lower
Course Attributes: Gen Ed - Math, Liberal Arts and Science
This course is designed for the college student who has demonstrated mastery of algebra skills and techniques. Topics include trigonometric functions and their properties with the study of identities, formulas, equations, and graphs. Also included are the solution of right and oblique triangles using the law of sines and cosines. In addition, time is spent exploring logarithmic and exponential functions. Emphasis is placed on contextual applications and problem solving. A graphing calculator is required. Credit cannot be received for both MATH 2043 and MATH 1054.

MATH 2074 - Technical Calculus II, 4 Credits
Prerequisite(s): MATH 1063 with D or better or MATH 1084 with D or better
Level: Lower
Course Attributes: Gen Ed - Math, Liberal Arts and Science
A continuation of MATH 1063 with further study in differentiation and integration of both the algebraic and transcendental functions. Applications will be included in each topic. An introduction to Matrix Algebra may be included. Graphing Calculator required. Student cannot receive credit for MATH 2074 if they have received credit for MATH 1084.

MATH 2094 - Calculus II, 4 Credits
Prerequisite(s): MATH 1084 with D or better or MATH 1063 with D or better
Level: Lower

Course Attributes: Gen Ed - Math, Liberal Arts and Science
A continuation of MATH 1084 with a concentrated study of integration techniques along with applications. Applications include but are not limited to areas, volumes, arc length, and work problems to name a few. The course involves the methods of integration and applications as they apply to both the algebraic and transcendental functions. Infinite Series will be included. Graphing Calculator required. Student cannot receive credit for both MATH 2094 and MATH 2074.

MATH 2124 - Statistical Methods & Analysis, 4 Credits
Prerequisite(s): MATH 1033 with C or better
Level: Lower
Course Attributes: Gen Ed - Math, Liberal Arts and Science
This is a one-semester (non-calculus based) course which covers descriptive as well as inferential statistics. Included are topics on collecting, organizing, and summarizing data. Other topics include correlation and regression, probability, normal and binomial probability distributions, normal approximation to the binomial, central limit theorem, confidence intervals, hypothesis testing, and nonparametric statistics.

MATH 2133 - Statistics II, 3 Credits
Prerequisite(s): MATH 1123 with C or better
Level: Lower
Course Attributes: Gen Ed - Math, Liberal Arts and Science
A continuation of MATH 1123 emphasizing probability distributions with predictive and inferential aspects of statistics: the normal distribution with applications, central limit theorem, hypothesis testing and estimation as applied to the mean, standard deviation, and proportions. Other topics include normal approximation to binomial, Chi-Square applications, linear regression, correlation, and nonparametric statistics. Use of calculators for analysis and computer statistical packages are utilized.

MATH 2153 - Finite Mathematics, 3 Credits
Level: Lower
Course Attributes: Gen Ed - Math, Liberal Arts and Science
This course is designed for the business or computer science student and may serve as a good alternative for the students in the social and life sciences. The course will introduce the following topics: functions (linear, quadratic, exponential and logarithmic), logic, counting methods, elementary probability, formulas (math and finance), sequences and series. This is an application-oriented course, which will build the student's understanding of applications in the business, economics, life sciences, and social science areas. Emphasis will be on real data applications and on increased use of the graphing calculator. Requires a C or better in MATH 2003.

MATH 2163 - Discrete Mathematics, 3 Credits
Prerequisite(s): MATH 1033
Level: Lower
This course is designed for Information Technology and Mathematics and Science students. The course will introduce and discuss the following topics: functions, relations, sets, logic, counting methods, methods of proof, network graphs and trees, algorithmic analysis, complexity and computability, and matrices. A graphing calculator is required.

MATH 2900 - Directed Study, 1 to 4 Credits
Level: Lower
A student may contract for from one to four credit hours of independent study in mathematics through an arrangement with an instructor of mathematics. The student and instructor will develop a course of study which must be approved by the department chairperson and the school dean. The instructor and the student will confer regularly regarding the student's progress.

MATH 3003 - Linear Algebra, 3 Credits
Prerequisite(s): MATH 1084 with C or better or MATH 1063 with C or better
Level: Lower
This course is an introduction to linear algebra. Topics covered include solution of systems of linear equations, linear independence, matrix algebra, vector spaces, eigenvalues and eigenvectors, orthogonality, and least squares problems.

MATH 4900 - Directed Study, 1 to 6 Credits

Level: Lower

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chair. The instructor and student will confer regularly regarding the process of the study.

MATH 5900 - Directed Study, 1 to 4 Credits

Level: Upper

A student may contract from one to four credit hours of independent study in mathematics through an arrangement with an instructor of mathematics. The student and instructor will develop a course of study which must be approved by the department chairperson and the school dean. The instructor and the student will confer regularly regarding the student's progress.

MATH 6104 - Multivariate & Vector Calculus, 4 Credits

Prerequisite(s): MATH 2094 with D or better or MATH 2074 with D or better

Level: Upper

Course Attributes: Liberal Arts and Science

This course is designed as a continuation of MATH 2094. Topics will include: parametric equations, polar, cylindrical and spherical coordinate systems, vectors and vector valued functions, functions of several variables, partial derivatives and applications, multiple integrals, and vector analysis, including Green's theorem, Stokes' theorem, and Gauss' theorem. The course will include several major projects outside of class.

MATH 6114 - Differential Equations, 4 Credits

Prerequisite(s): MATH 2094 with D or better or MATH 2074 with D or better

Level: Upper

Course Attributes: Liberal Arts and Science

This is the beginning study of the solution of differential equations with emphasis on both analytic and numerical solutions. Topics include first and second order differential equations and their solutions, series solutions, Laplace transforms, linear equations of higher order, numerical solutions or ordinary differential equations using Euler and Runge-Kutta methods, and the use of Eigenvalue methods to solve linear systems. In addition, this course emphasizes the development of differential equations as mathematical models for a variety of practical applications. The course will include several major projects outside of class.

MATH 7113 - Economic Analy for Engr Tech, 3 Credits

Prerequisite(s): MATH 1063 with D or better or MATH 1084 with D or better

Level: Upper

Course Attributes: Gen Ed - Math, Liberal Arts and Science

This course is designed for the engineering technology student. It covers techniques for comparing alternative projects based on economic considerations; time value of money; present worth; equivalent uniform annual cost; rate of return on investment; minimum cost life; expected value; decisions under risk; effects of income tax and inflation.

MATH 7123 - Statistics for Engr Technology, 3 Credits

Prerequisite(s): MATH 2074 with D or better or MATH 2094 with D or better

Level: Upper

Course Attributes: Gen Ed - Math, Liberal Arts and Science

This calculus-based course offers the theoretical basis for probability and statistics related to engineering applications.Topics include data analysis techniques, random variables, expectation, important probability distributions and densities, inferences concerning one or more means and standard deviations. Reliability, correlation and regression, curve fitting, and quality control charts are introduced. Graphing calculators are required. Computer applications may be included.

MACHINE TOOL TECHNOLOGY

MATT 1004 - Basic Industrial Machining, 4 Credits

Level: Lower

This introductory course is designed to instill safe shop methods and procedures along with

the proper and safe use of all equipment associated with Machine Tool Technology. Also incorporated in this introductory course is the proper use of basic measuring tools and hand tools. Students will be instructed in the proper operation of the power saw, drill press and pedestal grinder.

MATT 1014 - Industrial Machining I, 4 Credits

Level: Lower

Students will be instructed in the proper operation of power Basic lathe operations will be presented. The student will demonstrate their proficiencies on this equipment by producing specifically assigned projects.

MATT 1024 - Industrial Machining II, 4 Credits

Level: Lower

This course is designed to develop basic skills on the vertical milling machine. Projects will be assigned to allow the student to demonstrate the various skill levels required.

MATT 1234 - Industrial Machining III, 4 Credits

Level: Lower

The student will be instructed in advanced lathe operations and procedures. These will include precision turning, maintaining closer tolerances, and gage threading with the use of carbide tool cutters. The student will demonstrate the various skills required by producing assigned advanced level projects.

MATT 1244 - Industrial Machining IV, 4 Credits

Level: Lower

The student will be instructed in advanced vertical milling operations and procedures. These will include advanced vertical milling machine set-up (i.e. sine plates and indexing heads) and operations (i.e. dove tail and t-slot cutting). The student will demonstrate the various skills required by producing assigned advanced level projects.

MATT 1254 - Industrial Machining V, 4 Credits

Level: Lower

The student will be instructed in the safe operation of the horizontal milling machine and the surface grinder. The student will demonstrate the various skills required by producing assigned projects.

MATT 1713 - Reading Engineering Drawings, 3 Credits

Level: Lower

The transfer of ideas from the Engineering Department to the manufacturing area is accomplished through the use of engineering drawings. This course will explain how information is conveyed through the use of ANSI standard drafting procedures and the correct interpretation of that information by the machinist.

MATT 1913 - Machinist Calculations I, 3 Credits

Level: Lower

Basic mathematical functions used by the machinist in the performance of their duties will be the subject of this course. Mathematical operations such as manipulation of fractions, decimals and unilaterally converting between the two and into the metric measurement system along with calculating speeds and feeds, tapers and depths of cut will be taught in this course. Successful completion of this course requires a grade of "C" or better.

MATT 1923 - Machinist Calculations II, 3 Credits

Prerequisite(s):

Level: Lower

This course is a combination of both basic geometry (both plane and solid) and trigonometry. Both of these branches of mathematics will be trade related and will focus on the math needed by the machinist, CAD drafter, and welder to perform their required tasks. Successful completion of this course requires a grade of "C" or better.

MATT 2435 - CNC Industrial Machining III, 5 Credits

Level: Lower

Continuation and elaboration of previous units with emphasis on student development with the machine tool equipment.

MATT 2445 - CNC Industrial Machining IV, 5 Credits

Level: Lower
In this course, the student will be challenged with the setups for many various complex parts. The setups in conjunction with programming of the turning and milling centers will require the student to use all of their recently acquired knowledge.

MATT 2455 - CNC Industrial Machining V, 5 Credits
Level: Lower
In this course, all aspects of CNC programming gained in the previous courses will be applied for a final complex project. Trouble shooting and program generation will be fine tuned.

MATT 2803 - Senior Project, 3 Credits
Level: Lower
This course requires that the machine tool student call upon all of their past course work into the creation of a senior capstone project. All aspects of machining and programming skills are at their disposal.

MATT 3003 - Geometric Dimensioning & Toler, 3 Credits
Level: Lower
Geometric Dimensioning and Tolerancing is dimensioning associated with the tolerancing of individual characteristics of a part where permissible variations relate to form, profile, radial relationship to an axis, orientation of one feature to another, and location of features. Applications of all symbols and proper interpretation will be stressed. Application of various principles referenced in the current specification will be presented.

MATT 3005 - Intro to CNC Machine Program, 5 Credits
Level: Lower
As the most fundamental part of the CNC lathe and its operation, the coordinate grid is covered in detail in this module. Three levels of program preparation are discussed: EIA, APT, and Conversational. Since APT and Conversational languages are normally translated into EIA codes before execution on the machine, a more detailed look at the elements of the EIA coding system is then provided.

MATT 3015 - CNC Industrial Machining I, 5 Credits
Level: Lower
The student will use the horizontal and vertical mill in a safe manner, and will perform various external and internal operations including drilling, power tapping, milling of slots, keyways, boring, laying out bolt circles using x and y coordinates. Students will write step-by-step procedures and will use math formulas to calculate machine time and will draw basic prints for machining purposes.

MATT 3025 - CNC Industrial Machining II, 5 Credits
Level: Lower
The mechanical components of the lathe are explained in this module. The terminology established here is used throughout the balance of the instruction. Because of the variety of turret styles and automatic tool handling mechanisms found on CNC lathes, several configurations are shown along with an explanation of how each operates.

MATT 4003 - Senior Project, 3 Credits
Level: Lower
This course is designed as a capstone project to verify a student's ability in all aspects of machining. The student will be required to identify a need for a new product or improvement on an existing product. After identification, the completion of the project will occur with minimal instructor guidance, which will allow the student to demonstrate their ability to perform independently. Upon completion, the student will demonstrate the functionality of their project in the form of a formal presentation.

MATT 4005 - CNC Industrial Machining III, 5 Credits
Level: Lower
An industrially accepted CAD/CAM system to generate CNC programs will be used throughout this module. The students will be able to produce full programs and download these in the CNC lathe and mill producing a part. Trouble shooting and correction of program errors will be stressed. Proper fixturing and setup of rough material will be presented.

MATT 4015 - CNC Industrial Machining IV, 5 Credits

Level: Lower

CNC programs may be refined regardless of mode of generation. Through this module the students will learn to correct flaws and will produce a finished part within the tolerance of the print and be geometrically correct. The concepts of fixturing and manufacturing will be related using geometric dimensioning and tolerancing.

MATT 4025 - CNC Industrial Machining V, 5 Credits

Level: Lower

The student will be required to set up many various complex parts. Students will use all of their recently acquired knowledge for previous courses to complete set-ups in conjunction with programming using canned cycles on the turning and machining centers. The student will be expected to develop the programming for the desired part, download to the proper machine, and produce the desired part. All of these tasks will be performed with minimum supervision.

MATT 4900 - Directed Study, 1 to 5 Credits

Level: Lower

By arrangement with advisor. Directed study is to provide an opportunity for the student to continue study in a subject area of special interest or special concern, related directly to an actual job opportunity within the drafting curriculum.

MECHANICAL ENGR TECH

MECH 1001 - Freshman Year Experience, 1 Credit

Level: Lower

This course is designed to help prepare the student for academic success at the college level and in career exploration. It will explore academic success strategies, campus resources, and campus and professional society opportunities, as well as knowledge "of self". The students also will gain an understanding of employment opportunities along with employer expectations and professional responsibilities.

MECH 1002 - Mech Eng Tech Fundamentals, 2 Credits

Level: Lower

This course is an applied course for Mechanical Engineering Technology students and is designed to help prepare the student for academic success through basic skills development and career exploration. The students will gain an understanding of basic tools and expand technical ability. The class will explore academic success strategies, campus resources, professional society opportunities, as well as a knowledge "of self".

MECH 1003 - Intro to Mechanical Eng Tech, 3 Credits

Level: Lower

This course prepares students who are new to the mechanical engineering technology field for success at the college level. Topics covered include mechanical engineering technology as a career, engineering library usage, problem solving techniques, measurement systems, right triangle geometry, dimensional analysis, significant figures, unit conversion, and data collection and analysis. Career options and opportunities will be presented using guest speakers from industry. Students will produce professional process documentation, organized solutions to basic engineering problems, engineering diagrams, and engineering presentations.

MECH 1011 - Intro to Mechanical Tech Lab, 1 Credit

Level: Lower

This lab introduces first year students to a skill set that is required of all students in the Mechanical Engineering Technology Departments. Through both group and individual assignments, students will produce professional process documentation, organized solutions to basic engineering problems, engineering diagrams, and engineering presentations. The lab will require the use of Microsoft Word, Excel, PowerPoint, and Visio.

MECH 1012 - CAD I, 2 Credits

Level: Lower

This is an introductory 2D Computer Aided Drafting (CAD) class where students will learn visualization, sketching, and geometric construction of basic mechanical components. This course will illustrate fundamental drafting techniques that implement graphical

communication through the use of the Alphabet of Lines, Orthographic Projection, and Section Views. Using CAD, students will learn to create working industrial drawings that adhere to industrial standards.

MECH 1022 - CAD II, 2 Credits

Prerequisite(s): MECH 1012 with D or better * or MECH 1603 with D or better
Level: Lower
This course is a continuation to the fundamental concepts of 2D Computer Aided Drafting (CAD) that is discussed in MECH 1012, CAD I. Students will learn how to create working industrial detail and assembly drawings of mechanical components that can be used for fabrication. This course will also use industrial standards such as ASME/ANSI Y14.5M for Geometric Dimensioning and Tolerancing to facilitate the communication of geometry requirements for associated features on detail components and assemblies. This course will cover, but not be limited to, machine design, weldments, structural steel, process piping, and pressure vessels. The major emphasis of this course will be the creation of working industrial drawings for fabrication and or successful integration into a mechanical assembly. The following standards will be used: ASME Sec. VIII, Div. 2, Pressure Vessel Code, ASME Y14.5M-Geometric Dimensioning & Tolerancing, ASME B31: Standards of Pressure Piping, ANSI B4.1: Limits and Fits, AISC: Standard Structural Steel Construction

MECH 1103 - Air Conditioning Principles, 3 Credits

Level: Lower
Fundamental principles of air conditioning and air conditioning systems. Presentation of psychometric principles and processes, equipment selection, heating and cooling load calculations and heating system principles including forced warm air, hot water, electric and steam systems and system components. Principles and practices of heating, air conditioning system design, operation and control.

MECH 1104 - Air Conditioning Principles I, 4 Credits

Prerequisite(s):
Level: Lower
Fundamental principles of air conditioning and air conditioning systems. Presentation of psychometric principles and processes, equipment selection, heating and cooling load calculations and heating system principles including forced warm air, hot water, electric and steam systems and system components. Principles and practices of heating, air conditioning system design, operation and control. Air distribution systems and design principles of duct and piping systems.

MECH 1203 - Materials Science, 3 Credits

Level: Lower
This course is a first semester, freshman level course. It is a broad introductory study of the basic characteristics of engineering materials. The course will emphasize the selection of metals, plastics, ceramics, and composites for mechanical design purposes. The relationships of structure, material properties, and material selection to the design/ manufacturing process will be emphasized. The study will be enhanced by laboratory experience where the student will study mechanical testing equipment as well as chemical, mechanical and heat treatment effects on important material properties. The course will include the study of such areas as corrosion, strength, rigidity, wear resistance, thermal expansion, elasticity and plasticity principles of the common engineering materials. The course includes the use of equipment such as mechanical testing, light microscopes, electron microscopes, metallograph, furnaces and controllers. Data interpretation is also an important emphasis. The students also have substantial preparation work for the weekly labs.

MECH 1343 - Comp Appl for Problem Solving, 3 Credits

Prerequisite(s):
Corequisite(s):
Level: Lower
This is an introductory course in engineering problem solving. The student will be presented with engineering-oriented problems to solve using various methods including flowcharting, pseudocode, and MS Excel. The students will be exposed to structured programming using Visual Basic and learn the logical sequence of steps to obtain solutions to the various technical problems.

MECH 1423 - Intro to Solid Modeling, 3 Credits

Prerequisite(s): MATH 2043 with D or better * or MATH 1063 with D or better * or MATH 1054 with D or better * or MATH 1084 with D or better * or MATH 2094 with D or better * or MATH 2074 with D or better *
Corequisite(s):
Level: Lower
This course is an introduction to 3D solid modeling techniques utilizing feature-based, constraint-based parametric design. This course encourages the student to visualize parts in the 3D world and have a "design intent" plan for each part in which they will design. This will help in the arrangement of assemblies, parts, features and dimensions to meet design requirements.

MECH 1603 - Graphics/CAD, 3 Credits

Level: Lower
Graphics/CAD involves the visualization, sketching, and geometric construction of mechanical components. Students will layout and create 2D working industrial drawings that adhere to industry standards. This course will illustrate CAD drawing construction techniques that implement graphical communication through the use of the alphabet of lines, orthographic projection, section views, auxiliary views and the creation of assembly and detail mechanical components. This course will also use the ASME Standard Y14.5M-1994 for Geometric Dimensioning & Tolerancing to facilitate the communication of geometry requirements for associated features on detail components and assemblies.

MECH 1641 - Manufacturing Processes Lab, 1 Credit

Prerequisite(s):
Corequisite(s):
Level: Lower
This manufacturing processes/machine tool lab is a supplement to MECH 1643 (or equivalent) aimed at exposing the students to laboratory exercises which will illustrate or support the concepts introduced in a manufacturing processes lecture course. Equipment covered in this lab includes: lathes, grinders, milling machines, band saws, drill presses, precision measurement devices etc. As time or student experience permit, the topic of basic C.N.C. machine operations and programs may be introduced. Safety and proper manufacturing procedures will be emphasized.

MECH 1643 - Manufacturing Processes, 3 Credits

Corequisite(s):
Level: Lower
The basic equipment, processes and services required to produce a product are studied. This course is designed to give the student the knowledge and vocabulary to generally comprehend the complex and inter-related design and manufacturing functions that must be accomplished to produce the end product. The equipment covered in this course includes: lathes, grinders, milling machines, planers, shapers, band saws, drill presses, welders, etc. The processes covered include the making of iron and steel, casting, plastics production, hot and cold forming, machining, fastening, non-traditional machining, grinding, etc. The services covered include safety, planning, quality control, and as time permits, an introduction to Computer Aided Manufacturing.

MECH 2013 - CAM I, 3 Credits

Level: Lower
This course is a study of Computer Aided Manufacturing (CAM) using a variety of software, programming languages and methods to produce Computer Numerical Control (CNC) machining programs. Programming languages will include Machinist/Conversational, Word Address and APT. CAM software is used to develop detailed CAD drawings, generate machine tool cutter paths and to develop the machining programs via post processing for specific CNC machine tools. Laboratory exercises include programming, machine tool setup and machine operation. Communication between the CAD/CAM computers and the machine tools using RS-232 communication protocol is also studied.

MECH 2121 - Thermofluid Mechanics Lab, 1 Credit

Prerequisite(s): MECH 2123 with D or better *
Corequisite(s):
Level: Lower

Applications of fluid mechanics and thermodynamic principles to testing and evaluation of appropriate equipment or systems. Laboratory evaluation, development of concepts and applications of instrumentation for data acquisition/data reduction on pumps, compressors, fans, nozzles, orifices, and pipeflow.

MECH 2123 - Thermofluid Mechanics, 3 Credits

Prerequisite(s): MATH 1033 with D or better * or MATH 1063 with D or better * or MATH 1054 with D or better * or MATH 1084 with D or better * or MATH 2094 with D or better * or MATH 2074 with D or better * or MATH 2043 with D or better *
Level: Lower
An introduction to fluid mechanics and thermodynamics with emphasis upon the inter-relationships between the subject areas. Fluid properties, fluid statics, fluid flow with consideration of the energy relationships and introduction to compressive flow and gas dynamics. Thermodynamic analysis of basic systems and thermodynamic cycles.

MECH 2153 - Air Conditioning Principles II, 3 Credits

Level: Lower
Performance analysis testing and specifications for air conditioning and refrigeration systems. Operation, testing and performance evaluation of air conditioning units. Application and testing of control systems and circuits. Performance testing of commercial system components such as condensers, cooling towers and evaporative coolers.

MECH 2204 - Energy Conversion Systems, 4 Credits

Prerequisite(s): MECH 2123 with D or better
Level: Lower
Basic principles involved in the transformation of heat into mechanical energy. Study of variations in design of various components used in the internal combustion engine and the refrigeration system. An emphasis is placed on the general arrangement and construction practices used by equipment manufacturers.

MECH 2501 - Mechanics of Materials Lab, 1 Credit

Prerequisite(s): MECH 2503 with D or better *
Corequisite(s):
Level: Lower
This is a lab course to supplement MECH 2503, Mechanics of Materials. It is a required co-requisite with MECH 2503 for several Mechanical Engineering Technology curricula and highly recommended (but not required) for all others. The emphasis of the course is on materials testing and the resulting technical reports. Tests covered include the tensile and compression tests of various materials, as well as torsion test and fatigue test. There are also exercises in measurement and calculation to verify important relationships developed in MECH 2503, such as Moment of Inertia and stresses developed in members under load.

MECH 2503 - Mechanics of Materials, 3 Credits

Prerequisite(s): MATH 2043 with D or better *
Level: Lower
A basic study of strength and rigidity of mechanical elements in tension, compression, shear and bending. Students will encounter and solve mechanical design problems involving stress and deflection of tension compression and direct shear members, shafts in torsion, beams in bending, and columns in compressive buckling. This course will also include the study of stress on connections such as weldments, riveted elements and bolted elements and the effect of stress concentration. The importance of basic design concepts such as stress, strain, deflections, elastic moduli, yield strength, ultimate strength, stiffness and safety factor are explored.

MECH 2543 - Advanced CAD Applications, 3 Credits

Prerequisite(s): MECH 1603 with D or better
Level: Lower
Advanced CAD is a continuation of the basic drafting standards and techniques facilitated through the course pre-requisite, MECH 1603. Delving into other mechanical drafting disciplines, this course will help students develop additional skill sets required in a variety of other mechanical fields. This course will cover, but not be limited to, machine design, weldments, structural steel, process piping, and pressure vessels. The major emphasis of this

course will be the creation of working industrial drawings for fabrication and or successful integration into a mechanical assembly. The following standards will be used: ASME Sec. VIII, Div. 2, Pressure Vessel Code, ASME Y14.5M-Geometric Dimensioning & Tolerancing, ASME B31: Standards of Pressure Piping, ANSI B4.1: Limits and Fits, AISC: Standard Structural Steel Construction.

MECH 2603 - Applied Mechanics, 3 Credits

Prerequisite(s): PHYS 1024 with D or better and MATH 1054 with D or better or MATH 2043 with D or better

Level: Lower

This course is a study of introductory mechanics through the application of the principles of statics. Students will focus on the equilibrium of particles and rigid bodies in two and three dimensions. Additional topics will include centroids, centers of gravity, and analysis of structures, friction, area, and mass moments of inertia. The course includes a basic study of strength and rigidity of mechanical elements in tension, compression, shear, and bending. The course will also emphasize the importance of basic design concepts such as stress, strain, deflections, elastic moduli, yield strength, ultimate strength, stiffness and safety factor with the focus on problem-solving by using algebraic and trigonometric computations.

MECH 3003 - Machine Design I, 3 Credits

Prerequisite(s): MECH 1012 with D or better and MECH 1022 with D or better

Corequisite(s): MECH 2603

Level: Lower

This course will emphasize the application of mechanical design for industrial machinery. The lecture material for this course will be enhanced through a laboratory experience using design techniques that include the creation of working industrial drawings, parametrically driven spreadsheet solutions of design problems, component sizing and dimension determinations. The course will include the study of mechanical power systems such as gear trains, belt and chain drives, linkages, clutch-coupling brake components, torque transmission devices, shaft and component design calculations. The techniques of component design will also include the extensive use of online database information, standards and manufacturer's specifications. At all times in this class, the design and development for manufacturability will be paramount.

MECH 3113 - Statics, 3 Credits

Prerequisite(s): (PHYS 1024 with D or better or PHYS 1044 with D or better or PHYS 1064 with D or better) and (MATH 1054 with D or better or MATH 2043 with D or better)

Level: Lower

This course is a study of introductory mechanics through the application of the principles of statics. Students will focus on the equilibrium of particles and rigid bodies in two and three dimensions. Additional topics will include centroids, centers of gravity, and analysis of structures, friction, area and mass moments of inertia. The course will also emphasize the importance of problem-solving in statics by using algebraic and trigonometric computations.

MECH 3124 - HVAC Systems, 4 Credits

Level: Lower

This course introduces the student to the fundamental principles of heating, ventilation and air conditioning systems. Topics include psychometric principles and processes, equipment selection, heating and cooling load calculations and heating system principles including forced warm air, hot water, electric and steam systems and geothermal heating and cooling systems.

MECH 3203 - Computer Aided Manufacturing, 3 Credits

Level: Lower

This course is a study of Computer Aided Manufacturing (CAM) using a variety of software, programming languages and methods to produce Computer Numerical Control (CNC) machining programs. Programming languages will include Machinist/Conversational, Word Address and APT. CAM software is used to develop detailed CAD drawings, generate machine tool cutter paths and to develop the machining programs via post processing for specific CNC machine tools. Laboratory exercises include programming, machine tool setup and machine operation. Communication between the CAD/CAM computers and the machine tools using RS-232 communication protocol is also studied.

MECH 3204 - Computer Aided Manufacturing, 4 Credits

Level: Lower

This course is a study of computer aided manufacturing (CAM) using a variety of software, programming languages and methods to produce Computer Numerical Control (CNC) machining programs. Programming languages include Machinist/Conversational, Word Address and APT.

MECH 3223 - Mechanical Design Principles, 3 Credits

Prerequisite(s): MECH 1603 with D or better or (MECH 1012 with D or better and MECH 1022 with D or better)

Corequisite(s): MECH 3113

Level: Lower

This course will emphasize the application of mechanical design for industrial machinery. The lecture material for this course will be enhanced through a laboratory experience using design techniques that include the creation of working industrial drawings, parametrically driven spreadsheet solutions of design problems, and component sizing and dimension determinations. The course will include the study of mechanical power systems such as gear trains, belt and chain drives, linkages, clutch-coupling brake components, torque transmission devices, shaft and component design calculations. The techniques of component design will also include the extensive use of online database information, standards and manufacturers specifications. At all times in this class, the design and development for manufacturability will be paramount.

MECH 3224 - Mechanical Design Principles, 4 Credits

Prerequisite(s): (MECH 1504 with D or better or MECH 1603 with D or better) and (MECH 2503 with D or better * or MECH 2603 with D or better *)

Corequisite(s):

Level: Lower

A study of mechanical design principles emphasizing application of mechanical design applications to industrial machinery. The study will be enhanced by laboratory experience in design techniques including Computer Aided Design, Computer Solutions of Design Problems, Component Sizing and Dimension determinations, Robot mechanisms and design solution of a mechanical component problem. The course will include the study of mechanical power systems such as gear trains, belt and chain drives, linkage, clutch coupling brake and flywheel components, cams and springs, fastening, shaft and component design calculations. Techniques of component solution design will include computer design solutions, Computer Aided Design, extensive use of handbooks, standards and manufacturers specifications and manufacturing for assembly.

MECH 3304 - Engine Characteristics Theory, 4 Credits

Prerequisite(s): MECH 2123 with D or better

Level: Lower

A study of the chemistry of hydrocarbon families obtained from crude oil, their refinement and use of fuels and lubricants. Physical characteristics of various fuels and lubricants and ASTM testing procedures. Methods to determine the air fuel ratios through exhaust gas analysis. Study of engine performance characteristics. Study of electronic engine controls and automotive systems. Experiments and demonstrations covering combustion phenomena, injection, ignition, lubrication and emission systems, dynamometer characteristics and test instrumentation. SAE and ASTM testing procedures for fuels, lubricants and carburetion devices. Evaluation of air-fuel ratios. Application of test instrumentation and analysis techniques and computer analysis of test results. Experience with computer based data acquisition/data reduction procedures.

MECH 3643 - Manufacturing Management, 3 Credits

Level: Lower

This course supplements the study of manufacturing processes with emphasis on techniques, processes and factors that contribute to manufacturing management decision making. Previous manufacturing process exposure is desirable but not essential. Selected topics to be discussed include: motion and time study, engineering economics, project planning and scheduling, Computer Integrated Manufacturing/Management (CIM), Just in Time manufacturing strategy, design for manufacturability, Statistical Process Control (SPC),

Statistical Quality Control (SQC), and other management policies and strategies.

MECH 4003 - Solid Modeling, 3 Credits

Prerequisite(s): MECH 1603 with D or better or (MECH 1012 with D or better and MECH 1022 with D or better)
Level: Lower
This course is an introduction to 3D solid modeling techniques utilizing feature-based, constraint-based parametric design. This course encourages the student to visualize parts in the 3D world and have a "design intent" plan for each part in which they will design. This will help in the arrangement of assemblies, parts, features and dimensions to meet design requirements.

MECH 4013 - Machine Design II, 3 Credits

Prerequisite(s): MECH 3223 with D or better or MECH 3224 with D or better
Level: Lower
This course will emphasize the mechanical design of industrial machinery. The lecture material for this course will be enhanced through a laboratory experience using design techniques that include the creation of working industrial drawings, parametrically driven spreadsheet solutions of design problems, and component sizing and dimension determinations. This course will include the study of linear motion devices, fluid power, rigid coupling design and flywheels. Also covered in this class is spring design and selection, bolted and welded joint design, column support and lifting lug design. The techniques of component design will also include extensive use of online database information, standards and manufacturers' specifications, and manufacturing for assembly. At all times in this class, the design and development for manufacturability will be paramount.

MECH 4023 - Dynamics, 3 Credits

Prerequisite(s): (MATH 1063 with D or better or MATH 1084 with D or better) and (MECH 2603 with D or better or MECH 3113 with D or better)
Level: Lower
The course will emphasize applications of material involving the two basic concepts of dynamics, i.e., kinematics and kinetics and will introduce the students to vibrations. The course will include the study of levers, links, slide mechanisms, scotch yoke and the principles of force, torque, velocity, acceleration, inertia and friction. The course will use the principals of Equilibrium, Work-Energy and Impulse-Momentum along with Newton's Second Law to examine a variety of problems.

MECH 4024 - Dynamics, 4 Credits

Prerequisite(s): (MATH 1063 with D or better or MATH 1084 with D or better) and (MECH 2603 with D or better or MECH 3113 with D or better)
Level: Lower
The course will emphasize applications of material involving the two basic concepts of dynamics, i.e., kinematics and kinetics and will introduce the students to vibrations. The course will include the study of levers, links, slide mechanisms, scotch yoke and the principles of force, torque, velocity, acceleration, inertia and friction. The course will use the principals of Equilibrium, Work-Energy and Impulse-Momentum along with Newton's Second Law to examine a variety of problems.

MECH 4104 - Air Cond Systems Design, 4 Credits

Prerequisite(s): MECH 1104 with D or better
Level: Lower
Fundamentals of heating, air conditioning, and refrigeration systems design for residential and small commercial buildings. Design principles of applied psychometrics, duct system design, pumps, piping and coils for hot water, chilled water systems, principles of air and hydronic systems, package units and heat pump systems. Introduction to codes, standards and specifications for residential, small commercial buildings. Analysis of building and system requirements, operating principles and performance of unitary and central station systems, heat recovery systems, closed circuit water to air heat pump systems, principles of automatic temperature control systems and equipment selection procedures. Design projects include complete analysis, equipment selection, layout, estimating of systems for residential and commercial buildings, together with work with plans, specifications, codes and standards. Direct applications of computer design analysis and estimating procedures.

MECH 4224 - Mechanical Systems Design, 4 Credits

Prerequisite(s): MECH 3224 with D or better or MECH 3223 with D or better
Level: Lower
This course will emphasize the application of mechanical design for industrial machinery. The lecture material for this course will be enhanced through a laboratory experience using design techniques that include the creation of working industrial drawings, parametrically driven spreadsheet solutions of design problems, and component sizing and dimension determinations. This course will include the study of linear motion devices, fluid power, rigid coupling design and flywheels. Also covered in this class is spring design and selection, bolted and welded joint design, column support and lifting lug design. The techniques of component design will also include extensive use of online database information, standards and manufacturers' specifications, and manufacturing for assembly. At all times in this class, the design and development for manufacturability will be paramount.

MECH 4333 - CAM II, 3 Credits

Prerequisite(s): MECH 3204 with D or better or MECH 3203 with D or better
Level: Lower
Advanced CAM is a follow-up course to MECH 3204/3203 CAM (Computer Aided Manufacturing) and MECH 1423 (Intro to Solid Modeling). The course will introduce advanced Computer Aided Manufacturing topics such as APT (Automatically Programmed Tools) programming, additional CNC machine programming, solid modeling using Mastercam and/or Pro/E and Reverse Engineering Projects using a Coordinate Measurement Machine/System (CMM).

MECH 4354 - Process Equipment, 4 Credits

Prerequisite(s): MECH 2123 with D or better
Level: Lower
A study of rotary engines, gas turbine engines, compressors and pumps in relation to physical designs, including problems of metallurgy, thermodynamics and fluid flow dynamics. Characteristics and application requirements with a detail coverage of the variety of current designs. Current design trends for combustors with improved exhaust emission characteristics. Applications of principles through actual tests of engines, components and systems. Experiments and demonstrations covering combustion phenomena, dynamometer characteristics and test instrumentation. Evaluation of noise and vibrations through experiments. Evaluation of air-fuel ratios through exhaust gas analysis. Application of test instrumentation, analysis techniques, and computer analysis of test results for rotary engines, turbines, compressors and engine driven devices.

MECH 4423 - Robotics, 3 Credits

Level: Lower
A basic study of robotics and automation. The course will emphasize applications of robotic devices and mechanisms in industrial and commercial applications. The study will be enhanced by laboratory experience where the student will study computer programming of robot mechanisms, and the different types of mechanisms by which robots are operated. The course will include the study of computer programming, electrical, electronic and microprocessor control and sensing detection devices and the mechanical and hydraulic linkage power devices involved in the robots. This course also explores the societal impact of robotics and automation in industry.

MECH 4433 - Advanced Solid Modeling, 3 Credits

Prerequisite(s): MECH 1423 with D or better
Level: Lower
This course will use advanced 3D solid modeling techniques utilizing feature and constraint-based parametric design practices. The students will create models using helical and variable section sweeps, and blends, patterns, and family tables to create complex geometries of fan and turbine blades and other complex mechanisms. Emphasis will be placed on capturing "design intent" and the manufacturability of the solid models. High-end topics will include parametric programming, surface modeling and rapid prototyping.

MECH 4523 - Control System Fundamentals, 3 Credits

Prerequisite(s): MATH 1033 with D or better
Level: Lower

This course introduces students to the electronic components commonly used to monitor and control mechanical systems. Topics include principles of measurement, instrumentation, data acquisition, and control systems with an emphasis on mechanical engineering technology applications. Students build simulated control systems using switches and both traditional and solid state relays common on modern industrial machines. Safety interlock systems, delay circuits, and motor circuits are designed and wired. Lab projects allow students to experience a variety of design solutions and trouble-shoot electronic control systems.

MECH 4900 - Directed Study, 1 to 5 Credits

Level: Lower

A student may contract for one to five credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

MECH 5123 - Plastics & Composites, 3 Credits

Prerequisite(s): MECH 1643 with C or better

Level: Upper

This course provides an introduction to Industrial Plastics and Composites, and their applications in Industry. Plastics, and even more so composites, are space age materials that cover a broad spectrum of materials and physical characteristics. The materials and manufacturing processes applicable to both Thermoplastic and Thermosetting plastics are discussed. This course covers the basics of plastics chemistry, materials and manufacturing processes. Processes included are Injection Molding, Blow Molding, Compression Molding and others. The study of Composites materials and manufacture will explore the various matrix materials of both space age materials and of those used in every day household products. Plastics and Composites are examined as "engineered" design materials. Safety and environmental impacts will also be discussed.

MECH 5334 - Mechanics of Materials, 4 Credits

Prerequisite(s): MATH 2074 with D or better and (MECH 2603 with D or better or MECH 3113 with D or better)

Corequisite(s):

Level: Upper

This course is a calculus-based study of advanced concepts in Mechanics of Materials. It addresses the behavior of deformable mechanical components when subjected to tension, compression, torsion, flexure/bending or a combination of these loads. Extensive use is made of free body diagrams as well as Mohr's Circle for stress and strain. Experience is gained in the analysis of beam deflection, shafts in torsion, power, column buckling and thin walled pressure vessels. Analysis includes examination of stress concentrations, elastic and inelastic response, residual stresses, indeterminate structures and thermal effects. Superposition, singularity functions and theories of failure are studied. Laboratory experiences include traditional mechanical material testing and computer software applications.

MECH 5643 - Manuf Operations & Prodtn Mgmt, 3 Credits

Prerequisite(s): MECH 1643 with C or better and MECH 3643 with C or better

Level: Upper

This course presents an overview and in some case in-depth analysis of contemporary problems and issues related to manufacturing operations and production management, i.e., process and production planning, control, scheduling, and quality control in manufacturing organizations. The intent is to further provide operational and analytical concepts/tools for the management of manufacturing operations and the decision-making process within the scope of the production chain. Topics covered include process strategies, production and operations planning, manufacturing facilities layout, aggregate production planning, assignment strategies, job sequencing/scheduling, dispatching rules, and transportation network optimization, manufacturing forecasting and capacity planning, inventory deployment/control, materials management, reliability, six sigma, and total quality management.

MECH 5900 - Directed Study, 1 to 5 Credits

Level: Upper

A student may contract for one to five credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a

plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

MECH 6003 - Machine Design III, 3 Credits

Prerequisite(s): (MECH 3003 with D or better and MECH 4013 with D or better) or (MECH 3223 with D or better and MECH 4224 with D or better)
Level: Upper
This course is a study of advanced concepts in designing machine elements for static and dynamic applications. Major topics include structural steel selection and welded structure design, lubricants and the viscosity/temperature relationship, stress analysis and failure theories of machine elements, reliability engineering including Weibull analysis, planetary gear set design, and hydraulic system design including accumulators, pumps, and circuit design.

MECH 6123 - Tool, Die & Fixture Design, 3 Credits

Prerequisite(s): MECH 1643 with D or better and MECH 1603 with D or better
Level: Upper
Tool, Die & Fixture design is a specialized phase of manufacturing that develops the tooling and work holding devices for manufacturing operations. This course will introduce the student to the design of tools, machining tooling, jigs and fixtures and other work holding devices. Students will be required to create working industrial drawings for various work holding devices and fixtures for a myriad of metal removal applications. This will require students to research, analyze, and select the most equitable and safe design solution through calculations, component selection, and mechanical design.

MECH 6124 - Auto, System & Process Control, 4 Credits

Prerequisite(s): MECH 1641 with D or better
Level: Upper
This course introduces the students to the concepts of automated systems and the integration of various control systems and devices. It presents an overall perspective on what an automated system consists of and incorporates various monitoring and control devices and equipment. The course advances topics introduced in earlier control systems or automation courses. Concepts learned in this class will be applied in the final project. This project will investigate the impact of the different components of an automated cell on performance measures such as cycle time and production rate.

MECH 6133 - Intro to Finite Elements, 3 Credits

Prerequisite(s): MATH 4114 with D or better * or MATH 6114 with D or better *
Corequisite(s):
Level: Upper
The finite element method is a numerical method for solving engineering problems. This course will introduce engineering technology students to the principles of finite element method by formulating differential equations for solving simple engineering- oriented problems in the areas of structural analysis, heat transfer and fluid flow. The students will also learn to apply a programming environment such as VBA for methods in solving more complex finite element applications by iterative means. A commercial finite element analysis software system will be used as a solver for larger scale 2D and 3D models.

MECH 6204 - Mechanical Power Systems, 4 Credits

Prerequisite(s): MECH 7114 with D or better
Level: Upper
Basic principles involved in the transformation of heat into mechanical energy. Fundamentals of the heat engines and turbomachinery including hydraulic, steam and gas turbines, compressors, pumps as well as reciprocating and rotary engines. Study of alternative energy technologies and variations in design of various components. An emphasis is placed on the general arrangement and construction practices used by equipment manufacturers, with an objective to apply knowledge and adapt to emerging technologies and applications.

MECH 6243 - Quality & Process Control, 3 Credits

Prerequisite(s): MATH 1123 with D or better or MATH 2124 with D or better
Level: Upper

Topics covered in this course include an introduction to quality control, statistical quality control and cost of quality in manufacturing. Students will become familiar with quality improvement methods and philosophies, as used and applied in modern industry, including control charts, statistical process control, design of experiments, process optimization, lot-by-lot acceptance sampling and other acceptance sampling techniques.

MECH 6334 - Fluid Mechanics, 4 Credits

Prerequisite(s): MATH 2074 with D or better *
Corequisite(s):
Level: Upper
This course is an introduction to the theory and application of continuum fluid mechanics. Fluid properties and state relations are studied. Incompressible laminar and turbulent flows are investigated using control volume, Reynolds Transport Theorem, and momentum and energy equations. Navier-Stokes Equations are developed.Dimensional analysis, Buckingham Pi Theorem and modeling are covered. Flow rate, pipe sizing and minor losses in pipe systems are addressed. Compressible flow and gas dynamics are introduced and include topics in boundary layer theory, mach number, stagnation properties and shock waves. Turbomachinery, pumps and turbines are included. Weekly laboratory experiences address most of the above topics.

MECH 7114 - Applied Thermodynamics, 4 Credits

Prerequisite(s): MATH 2074 with D or better * or MATH 2094 with D or better *
Level: Upper
The theory and application of thermodynamics to pumps, compressors, turbines, heat exchangers; power cycles - Carnot, Rankine, Otto, Diesel, Stirling, and Brayton; refrigeration cycles - Carnot compression, absorption, gas; heat pump; problem-solving on ideal as well as actual cycles, psychrometry, stoichiometry, chemical equilibrium.

MECH 7123 - Metrology & Inspection, 3 Credits

Prerequisite(s): MECH 1643 with D or better
Level: Upper
The concepts and the practices of quality control, precision measurements and inspection needed in the manufacturing environment are studied. Advanced concepts of direct and indirect measurements, contact and non-contact gauging, angular measurement and surface texture/finish are covered. Expanded coverage of geometric dimensioning and tolerancing and drawing specifications as related to inspection will be emphasized. Precision measurements and part inspection using both manual and computer-controlled coordinate measurement machines and optical comparators will also be covered. The students will play an active role in a "team" project involving research and reporting on various aspects of the field of metrology.

MECH 7133 - Engr & Manufacturing Economics, 3 Credits

Prerequisite(s): MATH 1123 with D or better and (MECH 1641 with D or better) and (MECH 5643 with D or better)
Level: Upper
This course gives to students a set of technical and analytical tools and concepts underlying manufacturing operations, process safety, the principles of engineering economics, statistical analysis, uncertainty and risk assessment within the context of manufacturing/production analysis and design. It describes and applies various concepts and techniques that have been developed to assist manufacturing managers in making decisions about the design and operation of manufacturing processes and systems, with the analysis emphasizing safety, economics, equipment performance, uncertainty, flexibility and monitoring, and equipment reliability. Software including discrete-event simulation and statistical analysis packages are used in combination with engineering economy tables and manual/computer calculations.

MECH 7143 - Fundamentals of Machine Elemen, 3 Credits

Prerequisite(s): MECH 2603 with D or better
Level: Upper
This course is designed to provide a general knowledge of the various components and elements of devices utilized in a manufacturing process system design. The emphasis is on use, selection and specification of the components, not on the aspects of individual mechanical design principles best left to the mechanical engineers and designers. The students will be able to select and specify individual "machine elements" or incorporate them

into a system. The selection criteria will involve comparisons of the various available elements utilizing charts, tables and/or manufacturers data generally available in traditional reference texts, standards manuals or literature.

MECH 7153 - Fluid Power Systems Design, 3 Credits

Prerequisite(s): MECH 4523 with D or better and (MECH 2603 with D or better or MECH 3113 with D or better)
Level: Upper
This is an upper level design course for all aspects of fluid power systems. Both hydraulic and pneumatic systems are covered. Topics covered in this class include pneumatic circuits, hydraulic power systems, hydrostatic transmissions, and electro-hydraulic control systems. Emphasis will be placed on system design and hydraulic and pneumatic component specification. The course prepares students to sit for the Hydraulic Specialist industry certification exam hosted by the National Fluid Power Society.

MECH 7163 - Reliability and Quality, 3 Credits

Prerequisite(s): MATH 7123 with D or better
Level: Upper
This course covers such topics as recognizing and using the proper probability distribution to model product times to failure, the analysis of life data to determine the reliability characteristics and to achieve reliability improvement of a product or a process. Also covered are concepts and methods for the design, testing, and estimation of component and system reliabilities, reliability design and implementation, and design procedures that are necessary to insure a reliable product or process. The course also gives an in-depth knowledge of quality control, statistical quality control in manufacturing, cost of quality, process capability, methods and philosophy of statistical process control, process design and improvement and design of experiments.

MECH 7173 - Computational Methods, 3 Credits

Prerequisite(s): MATH 6114 with D or better and MECH 5334 with D or better and MECH 7334 with D or better
Level: Upper
This course will introduce engineering technology students to the principles of computational methods such as iterative processes, finite difference and finite element methods in the solution of engineering-oriented problems in the areas of structural analysis, heat transfer and fluid flow. The students will also learn to apply a programming environment such as VBA in a structured manner for solving complex applications by iterative means. A commercial finite element analysis software system will be used as a solver for large-scale 2D and 3D models.

MECH 7223 - Energy Systems, 3 Credits

Prerequisite(s): MECH 7334 with D or better and MECH 6334 with D or better
Corequisite(s): MATH 7113
Level: Upper
This course evaluates the concepts of energy and identifies how it relates to current and future technology. Topics include the data analysis of various types of energy systems, conversion among the several forms of energy, environmental impacts, and cost analyses. Lecture is supported by laboratory activities that may include: experiments, data collection and analysis, field trips to energy production facilities, design activities, and a final group project emphasizing principles discussed and experienced throughout the lecture and laboratory portions of the course.

MECH 7243 - Eng Design & Analysis of Exper, 3 Credits

Prerequisite(s): MATH 1123 with D or better
Level: Upper
This course will introduce students to the statistical tools used to improve key manufacturing process performance characteristics by optimizing process settings. The course also discusses confounding factorial and fractional factorial design, introduction to orthogonal arrays and the Taguchi methods. Throughout the course students will be required to perform statistical analysis on a variety of manufacturing processes. Basic knowledge of statistical concepts is required.

MECH 7333 - Automation in Manufacturing, 3 Credits

Level: Upper

The topics for this course include computer numerical control (CNC), industrial robotics, material handling, group technology, flexible manufacturing systems, automated inspection, process control, and computer integrated manufacturing (CIM). Other topics such as design for manufacturability and design for automated manufacturing are discussed. The world wide web (WWW) and Internet resources are utilized in project assignments in this class.

MECH 7334 - Heat Transfer of Sustb Energy, 4 Credits

Prerequisite(s): MECH 7114 with D or better and MECH 6334 with D or better

Level: Upper

This course is a study of the physical effects of heat transfer phenomena including conduction, convection, and radiation. This will include the concepts of control volume analysis, conservation laws of mass, momentum and energy, steady state and transient conduction, laminar and turbulent convection and phase change. A wide range of engineering problems will be presented to the students for solution using algebraic, differential and/or finite-difference methods. The heat transfer process will be directly applied in the design and analysis of sustainable thermal energy systems such as geothermal heat pump and thermal solar applications.

MECH 7503 - Mechanical Vibrations, 3 Credits

Prerequisite(s): MECH 5334 with D or better and MATH 6114 with D or better

Level: Upper

The course initially develops a foundation in analyzing elementary single and two degree of freedom systems subjected to natural and various types of forced motion. Using this foundation, multi-degree of freedom systems are investigated for both natural and forced motion. Modeling, damping, resonance, force transmissibility and modal analysis are discussed. Emphasis is placed on practical vibrations problems in several engineering fields. In class demonstrations supplement the theory development.

MECH 8123 - Simulation of Indu & Manuf Sys, 3 Credits

Prerequisite(s): MECH 1641 with D or better and MECH 5643 with D or better

Level: Upper

Simulation is the process of building a model of a system or decision problem, and experimenting with the model to obtain insight and support decision making. This course introduces students to computer based simulation and modeling with applications to all areas of business, engineering, and industry where management, strategic and operational decision making can be enhanced through the modeling and analysis of complex systems. Applications are designed to depict industrial system modeling including manufacturing processes and production systems, inventory analysis and management, and other aids to decision making, with a particular emphasis on understanding the impact of resource bottlenecks and time delays on system behavior. Hands-on modeling skills are developed using such as "Promodel" and/or "Arena" simulation software packages. Through project works, students are exposed to essential concepts, methods, and applications of simulation in manufacturing and industrial business settings.

MECH 8143 - Six-Sigma, Techniques & Strate, 3 Credits

Prerequisite(s): MATH 2124 with D or better and MECH 5643 with D or better and MECH 6243 with D or better and MECH 7243 with D or better

Level: Upper

Six-Sigma is a quality improvement methodology structured to reduce product or service failure rates to a negligible level (roughly 3.4 failures per million opportunities). The Six-Sigma process encompasses all aspects of a business, including management, service delivery, design, production and customer satisfaction. This course explores the principles and practices of Six-Sigma in manufacturing oriented industries. Students will be introduced to the key concepts of Six-Sigma to better prepare them to support a company's continuous improvement efforts. Students will also learn how to select, justify, and apply the principles, tools, and techniques to improve manufacturing and/or business performance. Topics covered include: quality function deployment, teams and teamwork, DMAIC problem-solving, measures and metrics, project management, statistical methods, control charts, design of experiments, reliability, failure modes and effects analysis, and lean manufacturing. A realistic capstone industry project will be developed and defended by students, individually or

in teams, to support understanding and deployment of the Six-Sigma strategies on the factory floor and beyond.

MECH 8233 - Plant and Process Design, 3 Credits

Prerequisite(s): MECH 1643 with D or better
Level: Upper
Plant and Process Design is a course that studies the layout and design or redesign of manufacturing facilities to develop part or process production in the most cost effective manner. Current increased productivity trends such as Lean Manufacturing,Agile Manufacturing, Just in Time, etc. will be studied. Work flow and process analysis will be included and plant layout and design software will be utilized for simulated projects.

MECH 8243 - Reliability Engineering, 3 Credits

Prerequisite(s): MATH 1123 with D or better and MECH 1641 with D or better
Level: Upper
This course covers such topics as recognizing and using the proper probability distribution to model product times to failure, the analysis of life data to determine the reliability characteristics and to achieve reliability improvement of a product or a process. Also covered are concepts and methods for the design, testing, and estimation of component and system reliabilities, reliability design and implementation, and design procedures that are necessary to insure a reliable product or process. The course also gives an in-depth knowledge about failures and failure rates; troubleshooting through failure modes, effects, and criticality analysis (FMECA); life tests, series-parallel, and standby systems; stress levels; redundancy and reliability apportionment; maintainability, availability, and safety.

MECH 8323 - Design of Machine Elements, 3 Credits

Prerequisite(s): MECH 5334 with D or better
Level: Upper
Advanced concepts in designing machine elements for static and dynamic applications. Special techniques of design will utilize finite element and parametric computer software. Particular emphasis is placed on designing hydrodynamic bearings, welded machine frames for steady and fatigue loads, stepped shafts for fatigue design failure theories. Flywheels with brake and clutch systems.

MECH 8334 - Theory of Machines, 4 Credits

Prerequisite(s): PHYS 1024 with D or better * or PHYS 1044 with D or better * and (MECH 2603 with D or better)
Level: Upper
A study of the fundamental concepts underlying the study of velocity, acceleration, and force analysis of machines; linkages, cams, gears, and flywheels; balancing of rotating and reciprocating machine elements; introduction to synthesis; computer simulation of mechanical systems.

MECH 8643 - Lean Manuf & Prod Operations, 3 Credits

Prerequisite(s): MATH 1123 with D or better and MECH 1641 with D or better and MECH 5643 with D or better
Level: Upper
This course provides an understanding of the fundamentals concepts in automation and manufacturing and expands the concepts of Lean Manufacturing introduced in previous courses. It is an integrated approach to efficient manufacturing with emphasis on synchronized production, takt time, quick changeover, cell design, visual factory, value stream-mapping, one-piece flow, and lean metrics. Topics covered include the elimination of waste or non added value activities or processes, automation strategies, production technology and operations, design and analysis of different types of manufacturing and automated systems such as automated flow lines, manual and automated assembly systems, group technology and cellular manufacturing, flexible manufacturing systems, transfer lines and semi-automated manufacturing systems, material handling and storage. Other topics including control issues in manufacturing systems such as facility scheduling, batch sizing, assembly line balancing and bottleneck management, inspection principles and technology, economic analysis in production, supply chain management, material requirement planning (MRP), Just-In-Time (JIT) delivery are also revisited.

MECH 8712 - MECH Internship, 12 Credits

Level: Upper

Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of educational experiences under direct supervision of an owner, manager or supervisor of technology in an organization. Each intern will be supervised by a member of the faculty. Written and oral reports and a journal of work experience activities will be required. Evaluation will be based on the quality of experiences gained from the internship. Students will be required to complete a series of 4 brief investigative or evaluative papers while completing the internship in areas such as career development, organizational structures, organized labor, business management, security, policies, and/or industry and market trends. At the end of the internship students will be required to give an oral presentation to the faculty about their internship experience.

HEALTH INFO TECH/MED REC

MEDR 1114 - Introduction to Health Info Mg, 4 Credits

Prerequisite(s): MEDR 1132 with C or better * and MEDR 1133 with C or better * and BIOL 1114 with C or better * and COMP 1503 with C or better *

Level: Lower

A lecture and lab-based course that covers the study of record keeping practices in the hospital and physician's office. Emphasis is placed on the health information management profession; hospital and medical staff organization; patient record content; procedures in filing, numbering and retention of patient records; quantitative analysis; release of patient information; forms control and design; indexes and registers; and regulatory and accrediting agencies.

MEDR 1132 - Essentials of Pharmacology, 2 Credits

Prerequisite(s): MEDR 1133 with C or better *

Level: Lower

An internet based introductory pharmacology course for those entering a health care profession, Essentials of Pharmacology covers the study of basic concepts and terminology associated with medication structure, function, interaction, and administration. Core concepts in pharmacology are introduced, including terminology, consumer safety and drug regulations, sources and bodily effects of drugs, medication preparation, abbreviations and systems of measurements, responsibilities, and principles of drug administration. Students also identify diseases associated with certain medications as well as medications that would be prescribed for certain diseases. Commonly used drugs are organized according to classification, and each classification is described along with characteristics of typical drugs, purpose, side effects, cautions and interactions. Patient education for each category is included.

MEDR 1133 - Medical Terminology, 3 Credits

Level: Lower

A lecture-based course that includes the study of body systems and functions, including the structure, meaning, and use of medical terms related to diseases and operations of the human body. Body systems studied include integumentary, musculoskeletal, nervous, sensory organs, endocrine, cardiovascular, respiratory, reproductive, genitourinary, and digestive. Units on psychiatry, psychology and pharmacology (drugs) are also covered. Students also learn how to use research medical information (e.g., such as reputable electronic medical references).

MEDR 1214 - ICD-9-CM & HCPCS Lvl II Coding, 4 Credits

Prerequisite(s): (BIOL 1114 with C or better or BIOL 1404 with C or better) and MEDR 1132 with C or better and MEDR 1133 with C or better and MEDR 1114 with C or better and MEDR 1224 with C or better * and (BIOL 2214 with C or better * or BIOL 2504 with C or better *) and BIOL 4403 with C or better * and MEDR 1223 with C or better *

Corequisite(s):

Level: Lower

An internet-based course whose content consists of a lecture and lab that includes study of the purpose and use of the ICD-9-CM and HCPCS level II classification systems. Topics include coding conventions, coding principles, and official inpatient and outpatient coding guidelines. Students will assign ICD-9-CM codes to diagnosis/procedure statements and

HCPCS level II codes to outpatient procedures and services. Case abstracts and patient records will also be used to assign codes. Use of the ICD-9-CM and HCPCS level II coding manuals and a computerized encoder is included. Inpatient and outpatient reimbursement systems and an introduction to ICD-10 are also covered.

MEDR 1223 - Health Data Management, 3 Credits

Prerequisite(s): MEDR 1114 with C or better and MEDR 1132 with C or better and MEDR 1133 with C or better
Level: Lower
An internet-based course whose content includes a lecture and lab that covers the collection and use of health data in hospitals and government agencies. Emphasis will be placed on the functions of birth and death registration, service assignment, commonly computed healthcare rates and percentages, analysis of health data, and design formats for presentation of health data to medical staff and hospital administrative committees. Students will use computer applications (e.g. Excel) for descriptive data display.

MEDR 1224 - CPT Coding, 4 Credits

Prerequisite(s): (BIOL 1114 with C or better or BIOL 1404 with C or better) and MEDR 1132 with C or better and MEDR 1133 with C or better and MEDR 1114 with C or better and MEDR 1214 with C or better * and (BIOL 2214 with C or better * or BIOL 2504 with C or better *) and BIOL 4403 with C or better * and MEDR 1223 with C or better *
Level: Lower
An internet-based course that covers the study and practice of the principles of the Latest Procedural Terminology (CPT) classification systems utilized in hospital outpatient and ED departments, physician offices, and stand-alone ambulatory care centers.

MEDR 1234 - ICD-9-CM& ICD-10-CM/PCS Coding, 4 Credits

Prerequisite(s): (BIOL 1114 with C or better or BIOL 1404 with C or better) and (MEDR 1132 with C or better and MEDR 1133 with C or better and MEDR 1114 with C or better and MEDR 2112 with C or better) and (BIOL 2214 with C or better * or BIOL 2504 with C or better *) and (BIOL 4403 with C or better * and MEDR 1223 with C or better *)
Level: Lower
This is a lecture and lab based on-line course that includes study of the purpose and use of the ICD-9-CM, ICD-10-CM and ICD-10-PCS (ICD-10-CM/PCS) classification systems. An introduction to inpatient and outpatient reimbursement systems is also covered. Coding topics include coding conventions and principles, and official inpatient and outpatient coding guidelines. Students will assign ICD-9-CM codes to diagnoses and procedures, ICD-10-CM codes to diagnoses, and ICD-10-PCS codes to inpatient procedures. Students will also assign ICD-9-CM and ICD-10-CM/PCS codes using case studies, case abstracts, and actual patient records using coding manuals and encoder software. Alternate care coding systems (e.g., DSM, SNOMED) are also covered. ICD-9-CM will also be taught as a legacy classification system.

MEDR 1244 - CPT & HCPCS Level II Coding, 4 Credits

Prerequisite(s): (BIOL 1114 with C or better or BIOL 1404 with C or better) and (MEDR 1132 with C or better and MEDR 1133 with C or better and MEDR 1114 with C or better and MEDR 2112 with C or better) and (BIOL 2214 with C or better * or BIOL 2504 with C or better *) and (BIOL 4403 with C or better * and MEDR 1234 with C or better * and MEDR 1223 with C or better *)
Level: Lower
This is a lecture and lab based on-line course that covers the study and practice of the principles of the Current Procedural Terminology (CPT) and HCPCS Level II classification systems, which are used in hospital outpatient and ED departments, physician offices, and stand alone ambulatory care centers.

MEDR 1312 - Intro to HIM PPE, 2 Credits

Prerequisite(s): MEDR 5114 with C or better
Level: Lower
Course Attributes: Clinical Liability Insurance
A supervised professional practical experience (PPE) in the health information department of a hospital with adequate facilities to provide varied work opportunities in health information management. Students will work under the supervision of a qualified Registered Health

Information Administrator, Registered Health Information Technician or other qualified personnel to whom they are assigned. Students will also receive college faculty consultation. The PPE is designed to enable students to obtain actual work experience in theoretical and application-based procedures previously studied. This PPE consists of 80 hours, which can be completed on a full-time basis (40 hours/week for two weeks) or on a part-time basis over an extended period of time (e.g., eight hours/week for 10 weeks).

MEDR 1322 - Intro to HIM v-PPE, 2 Credits

Prerequisite(s): MEDR 5114 with C or better
Level: Lower
Course Attributes: Clinical Liability Insurance
A supervised virtual (internet-based) professional practical experience (PPE) in health information management, which requires students to perform general hospital functions (e.g., HIPAA privacy and security), medical staff and hospital committee functions, patient records storage and retrieval, discharged patient record procedures, hospital statistics, and release of patient information. Students eligible to complete the virtual PPE in health information management (HIM) include those currently employed in the HIM department of a health care facility and those whom obtain permission of the instructor. Students are on site in the health information department of a health care facility for a minimum of 20 hours (of 80 total PPE hours) to perform certain functions, such as observing patient registration/billing functions, taking minutes at a health information committee meeting, and performing PPE tasks to develop interpersonal communication and professionalism skills. The PPE Coordinator makes on site arrangements in cooperation with the student, and placement at an alternate care setting (e.g., nursing facility, outpatient clinic, large physician practice, and so on) is permitted. Students work under the supervision of the College's PPE Coordinator, who is a qualified RHIT. The virtual professional practice experience allows students to obtain actual work experience in theoretical and application-based procedures previously studied. This virtual PPE consists of 80 hours (of which 20 are on site) and can be completed by the student on a full-time basis (40 hours/week for two weeks) or on a part-time basis over an extended period of time (e.g., eight hours/week for 10 weeks).

MEDR 1323 - Coding PPE, 3 Credits

Prerequisite(s): MEDR 1224 with C or better and MEDR 1214 with C or better and MEDR 5114 with C or better
Level: Lower
Course Attributes: Clinical Liability Insurance
A supervised professional practical experience in the health information management department of a hospital with adequate facilities to provide varied work opportunities in ICD-9-CM, CPT and HCPCS level II coding. Students will work under the supervision of a qualified RHIA, RHIT, or other qualified personnel to whom they are assigned. Students will also receive college faculty consultation. The professional practice experience is designed to enable students to obtain actual work experience in theoretical and application-based procedures previously studied. This professional practice consists of 120 hours, which can be completed on a full-time basis (40 hours/week for three weeks) or on a part-time basis over an extended period of time (e.g., eight hours/week for 15 weeks).

MEDR 1333 - Coding v-PPE, 3 Credits

Prerequisite(s): MEDR 1214 with C or better and MEDR 1224 with C or better and MEDR 5114 with C or better
Level: Lower
Course Attributes: Clinical Liability Insurance
A supervised virtual (internet-based) professional practical experience (PPE) in coding, which requires students to assign ICD-9-CM, CPT and HCPCS level II codes to inpatient, outpatient surgery, physician office, and emergency department electronic records and use appropriate software to abstract a minimum of 50 inpatient records. Students eligible to complete the virtual PPE in coding include those currently employed in the health information department of a health care facility and those whom obtain permission of the instructor. Students are on site in the health information department of a health care facility for a minimum of 40 hours (of 120 total PPE hours) to perform coding functions and to develop interpersonal and professionalism skills. The PPE Coordinator makes on site arrangements in cooperation with the student, and placement at an alternate care setting (e.g., nursing facility, outpatient clinic, large physician practice, and so on) is permitted. Students work under the supervision

of the College's PPE Coordinator, who is a qualified RHIT. The virtual professional practice experience allows students to obtain actual work experience in theoretical and application-based procedures previously studied. This virtual professional practice consists of 120 hours (of which 40 are on site) and can be completed by the student on a full-time basis (40 hours/week for three weeks) or on a part-time basis over an extended period of time (e.g., eight hours/week for 15 weeks).

MEDR 2614 - Advanced Coding & Reimbursemnt, 4 Credits

Prerequisite(s): MEDR 1214 with C or better and MEDR 1224 with C or better
Level: Lower
This is an online lecture and lab-based course that includes intermediate and advanced study of the ICD-9-CM (and ICD-10-CM and ICD-10-PCS, abbreviated as ICD-10-CM/PCS), CPT, and HCPCS level II classification systems. Application-based assignments allow students to demonstrate their mastery of coding conventions, coding principles, and official inpatient and outpatient coding guidelines. Students use inpatient and outpatient (e.g., ambulatory surgery, emergency department, physician office) case studies and patient records to assign codes to diagnosis/procedure statements and generate physician queries. ICD-9-CM, ICD-10-CM, ICD-10-PCS, CPT, and HCPCS level II coding manuals and encoders (e.g., 3M CodeFinder, CodeCorrect.com, Ingenix Encoder Pro, QuadraMed Quantim) are required. Students generate diagnosis-related groups (DRGs) and ambulatory patient classifications (APCs) for inpatient and outpatient cases, respectively, and complete assignments to master other prospective payment systems (e.g., ambulatory surgical center payments, resource utilization groups, home health resource groups).

MEDR 4514 - Alternate Care HIM, 4 Credits

Prerequisite(s): MEDR 5114 with C or better *
Level: Lower
An internet-based course whose content includes a lecture and lab that covers the study of health care delivery and new trends of development in the management and processing of health information with emphasis on project management and the preparation of management documents. Topics include computerized medical record systems, consulting in medical records, cancer registries, financing health care, and record keeping practices for ambulatory care centers, long term care centers, and mental health care centers. Preparation for taking the RHIT exam is integrated throughout the course, during which students complete practice exams in HIM content areas and interact with the instructor to receive clarification about concepts and study techniques. This course should be taken in the student's last semester of study.

MEDR 4900 - Directed Study, 1 to 6 Credits

Level: Lower
An internet-based elective course for students interested in advanced work in health information management in an area of special interest. Enrollment is limited in order to allow each student the opportunity to pursue his/her area of special interest.

MEDR 5111 - Health Info Tech Seminar, 1 Credit

Prerequisite(s): (MEDR 1312 with C or better or MEDR 1322 with C or better) and (MEDR 1323 with C or better or MEDR 1333 with C or better)
Corequisite(s): MEDR 3413 MEDR 4514 MEDR 5114
Level: Upper
A lecture-based online course that includes content new to the health information management (HIM) profession and to which students did not receive instruction in previous course(s). Examples of such content includes, but is not limited to, new and revised coding classification systems, federal and state statutes (laws) and regulations, information technology initiatives, and so on. Appropriate preparation for taking the Registered Health Information Technology (RHIT) exam is integrated throughout the course, during which students will complete practice exams in HIM content areas and interact with the instructor(s) in discussion board forums to receive clarification about concepts and study techniques. This course should be taken in the student's last semester of study.

MEDR 5114 - Electronic Health Record Mgmt, 4 Credits

Prerequisite(s): MEDR 1223 with C or better * or MEDR 2112 with C or better
Level: Upper

A lecture and lab-based course that covers the study of new trends in management and processing of health information with emphasis on the electronic health record (EHR). This course covers the definition, benefits, standards, functionality, confidentiality and security, and impact of the EHR in the healthcare environment. The course explores implementation of the EHR including infrastructure required, project management techniques, information technology systems, workflow processes and redesign in various health care setting to include acute care, long term care, and mental health care. Legal issues created by implementation of the EHR will be explored. This capstone course should be taken in the student's last semester of study.

MEDR 5214 - Insurance & Reimbursement Proc, 4 Credits

Prerequisite(s): (MEDR 1213 with C or better * or MEDR 1224 with C or better *) and MEDR 1214 with C or better * and MEDR 1223 with C or better *
Level: Upper
An internet-based course whose content includes a lecture and lab that includes study of the principles and practice of insurance and reimbursement processing. The course will include the assignment and reporting of codes for diagnoses and procedures/services; completion of CMS-1450 and CMS-1500 claims for inpatient, outpatient, emergency department, and physician office encounters. In addition the course will cover the review of inpatient and outpatient cases to identify issues of fraud and abuse. Textbook cases and patient records will be used to code diagnoses/services/procedures and complete claims. Inpatient and outpatient reimbursement will be determined and source documents interpreted (e.g., Medicare Summary Notice).

MEDR 5313 - Legal Aspects of Hlth Info Mgt, 3 Credits

Prerequisite(s): (MEDR 1214 with C or better or MEDR 1234 with C or better) and (MEDR 1223 with C or better or MEDR 2112 with C or better) and (MEDR 1224 with C or better or MEDR 1244 with C or better) and MEDR 5114 with C or better *
Level: Upper
A lecture-based online course that introduces the study of law, including the American legal system, court systems and legal procedures, e-discovery, judicial process of health information, discovery requests, principles of liability, intentional and non-intentional torts, and defenses to lawsuits. An overview of ethics includes the study of ethical standards, ethical decision making and challenges, and bioethical issues. Legal issues central to health information management cover the control and use of patient-specific health information, and topics include patient record requirements; use, content, retention and destruction requirements; confidentiality and informed consent; access to health information; ownership of health information; and specialized patient record requirements. Specialized areas of health information management topics include quality, risk and utilization management; medical staff credentialing, information systems and an overview of applicable laws; HIPAA regulations; healthcare fraud and abuse laws; and the role of law and ethics in the workplace.

MARKETING

MKTG 1033 - Advertising Principles, 3 Credits

Prerequisite(s): MKTG 2073 with D or better
Level: Lower
Students will learn the uses and power of advertising and how to apply these concepts to daily business. Students will get a basic understanding of advertising concepts and how to apply them to various media. Using good design and marketing techniques, students will analyze and create advertisements for business use.

MKTG 1063 - Principles of Sales, 3 Credits

Prerequisite(s): MKTG 2073 with D or better
Level: Lower
Principles of Sales examines the principles and methods of sales with respect to the salesperson, his/her company, products and customers. Emphasis is placed on the selling process: prospecting, pre-approach, approach, presentation, trial close, meeting objections, and closing. Students will design and implement an industrial sales presentation.

MKTG 2073 - Principles of Marketing, 3 Credits

Level: Lower
Principles of Marketing introduces students to the field of marketing. The course emphasizes

marketing functions and institutions as they pertain to the product, price, place, and promotion aspects of bringing goods and services to the consumer.

MKTG 3153 - Web Design & Marketing, 3 Credits

Prerequisite(s): MKTG 2073 with D or better
Level: Lower
This course will examine the uses and power of the Internet, web pages, and e-commerce and how to apply these concepts to daily business. Integration of marketing and web design techniques will be utilized in the creation of effective web pages.

MKTG 4900 - Directed Study, 1 to 4 Credits

Level: Lower
A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the progress of the study.

MKTG 6003 - Strategic Marketing, 3 Credits

Prerequisite(s):
Level: Upper
Strategic Marketing provides students with an overview of the marketing discipline and a framework that presents marketing as a value creation process. Participants learn how to evaluate marketplace potential and risk from the perspective of the entity's unique ability to develop and deliver goods and services of meaningful customer value. Students participate in classroom presentations, discussions, team problem solving, and in-depth analysis of a series of real-life marketing situations with a diverse range of entities and industries. The course explores the principal concepts and tools of contemporary marketing management, from market segmentation and product positioning to the design of distribution channels and communications strategy, in order to maximize the value delivered to customers. A Strategic Marketing Plan will be required.

NATURAL SCIENCE

NASC 1001 - Astronomy Laboratory, 1 Credit

Level: Lower
Course Attributes: Liberal Arts and Science
This laboratory course is designed to accompany NASC 1003 for the student who wishes a laboratory component to astronomy. It will cover many of the same topics as the astronomy course but using a laboratory setting including the use of a telescope, computers, graphing, and various measuring instruments, and astronomical charts.

NASC 1003 - Astronomy, 3 Credits

Level: Lower
Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science
This course is designed to introduce the principles of astronomy. Emphasis will be placed on scientific process critical thinking, and modeling. This course is suitable for science majors or as a science elective. Topics to be covered are: light spectroscopy, solar system evolution, planetology, comets and asteroids. An optional laboratory course will be offered.

NASC 1043 - Physical Science Survey, 3 Credits

Level: Lower
Course Attributes: Gen Ed - Natural Sciences
Course surveys principles and applications of physical and earth science. Half of course is devoted to physical phenomena relating to life on earth, including: gravitation, energy, thermal and electrical phenomena, etc. Other half is concerned with earth and its surroundings including: geologic history and structure of earth, tides, atmosphere and solar radiation, meteorology, climate phenomena, astronomy, etc.

NASC 2001 - Astronomy II Laboratory, 1 Credit

Corequisite(s): NASC 2003
Level: Lower

Course Attributes: Liberal Arts and Science
The laboratory course will emphasize modern measuring techniques as they relate to theory presented in NASC 2003. Students will benefit from practical problem solving opportunities which provide both tactile and visual learning approaches to astronomy knowledge. Technology introduced will include computer simulations, WEB sight data retrieval, Charge Coupled DIsply (CCD) Camera, Schmit Cassagrain telescopes, Geiger-Muller system and spectrographs.

NASC 2003 - Astronomy II, 3 Credits
Level: Lower
Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science
This course is designed as a continuation of NASC 1003, Astronomy, or as a separate introduction to stellar evolution and cosmology. It will introduce advanced topics from the fields of astronomy and cosmology. Emphasis will be placed on scientific process and critical thinking. This course is suitable for science majors or as a science elective. Topics to be covered are: star cycles, galactic evolution and cosmology. An optional laboratory course will be offered.

NURSING

NURS 1001 - Seminar in Nursing, 1 Credit
Level: Lower
Course Attributes: Clinical Liability Insurance
This elective course is designed to familiarize entering nursing students with the kind of academic, social, and personal experiences that all students preparing for nursing are likely to encounter. The purpose of the course is to assess the student's knowledge and expectations regarding nursing practice, identify the significance of supportive liberal arts courses, and provide strategies to assist the student to meet the academic requirements essential for the nursing curriculum.

NURS 1109 - Nursing I, 9 Credits
Prerequisite(s): BIOL 1404 with C or better *
Level: Lower
Course Attributes: Clinical Liability Insurance
Nursing I is the foundation course in the nursing curriculum. Its content represents commonalities of knowledge and skills considered fundamental to subsequent nursing courses. Emphasis is placed on basic needs of an individual and how these vary, depending on their physical and emotional state and level of development. The student is introduced to the nursing process with an emphasis on assessment and planning. The student develops beginning skills in assisting patients with major health concerns to meet their basic needs. Areas of concentration include: legal/ethical responsibilities of the nurse, concepts of mental health, nutrition, growth and development, pharmacology, drug computations, and antepartal care. Communication skills, health promotion, teaching - learning and asepsis principles are incorporated throughout the course. The development of basic nursing skills begins in a structured campus lab setting and continues in the clinical lab.

NURS 2001 - Seminar in Nursing II, 1 Credit
Level: Lower
Course Attributes: Clinical Liability Insurance
This course is designed to familiarize students with the expectations of the nursing program. It is an elective course to be taken by interested students the semester before their first nursing course. The objectives focus on an overview of the philosophy of nursing, theoretical and practical applications of nursing process concepts, and roles of the nurse. Classroom discussions, observations of actual nursing classes and field trips are planned to enhance the student's awareness of the expectations of the nursing program.

NURS 2201 - Trans to Assoc Degree Nursing, 1 Credit
Level: Lower
This course orients the student to the philosophy, objectives and curriculum design of the nursing program and focuses on the nursing process, therapeutic communication, documentation, skills and computation competency. This course is required for the transfer student who successfully challenges or receives transfer credit for Nursing I and/or Nursing II and seeks advanced placement in the Nursing program.

NURS 2209 - Nursing II, 9 Credits

Prerequisite(s): BIOL 1404 with C or better and (NURS 1108 with C or better or NURS 1109 with C or better) and BIOL 2504 with C or better *
Corequisite(s):
Level: Lower
Course Attributes: Clinical Liability Insurance
In Nursing II, the student uses the nursing process to assess, plan, implement, and evaluate nursing care to meet basic needs of clients with major health concerns. Health problems are studied in depth with emphasis on therapeutic communication, client education and prevention. Areas of concentration include: crisis, maternal-child health, the surgical experience, diabetes, and caring for individuals with respiratory, cardiovascular and gastrointestinal problems. The campus lab continues to be used for the acquisition, practice and evaluation of technical skills. In the clinical area, the student cares for clients whose conditions are relatively stable and predictable. Observational experiences include rotations to obstetrics, operating and recovery rooms. The student uses a variety of methods to acquire competence in learning objectives and demonstrates increased responsibility for learning.

NURS 3002 - Preceptorship, 2 Credits

Prerequisite(s): NURS 2208 with C or better or NURS 2209 with C or better
Corequisite(s):
Level: Lower
Course Attributes: Clinical Liability Insurance
The focus of this elective course is to increase efficiency and self-confidence. The student works as a member of a nursing team in association with a faculty member and RN preceptor. The exposure to entire shifts under the direction and guidance of a preceptor is expected to increase students' abilities to identify factors influencing client needs. The nursing process is used to determine appropriate nursing interventions with emphasis on organization and priority setting. Increased competency in nursing skill performance, as well as increased ability to evaluate self-performance and increased levels of self-confidence are anticipated.

NURS 3311 - Nursing III, 11 Credit

Prerequisite(s): NURS 2209 with C or better or NURS 2208 with C or better
Level: Lower
Course Attributes: Clinical Liability Insurance
In Nursing III, the student applies the nursing process in assessing/analyzing, planning, implementing, and evaluating nursing care for one or more clients with chronic and/or critical health concerns. The student further develops his/her role as a teacher by formulating and implementing teaching plans based upon a client's individual needs. Major health concerns addressed include psychiatric problems, blood disorders, hepatic problems, immunological problems, musculoskeletal disorders, cancer, genitourinary problems, gynecological problems, neurological disorders, and acute cardiac problems. The student considers some of the major health problems of children. Further incorporation of therapeutic verbal and nonverbal communication skills is pursued in complex situations. Clinical experience is increased to two seven-hour days per week. The student begins to care for clients in more complex situations in the clinical setting. Each student completes a psychiatric rotation and a rotation to an agency for treatment of dependency disorders.

NURS 4001 - Decision-Making in Nursing, 1 Credit

Corequisite(s): NURS 4410
Level: Lower
This one credit elective course focuses on decision making in nursing and application of a problem-solving approach. The course is designed to assist the student to identify nursing behaviors as steps of the nursing process and define client needs and scope of nursing care to be provided. The emphasis is on applying the nursing process to selected health problems. Stress-reduction techniques and test-taking strategies are also included.

NURS 4002 - Preceptorship, 2 Credits

Prerequisite(s): NURS 3310 with C+ or better or NURS 3311 with C+ or better
Corequisite(s):
Level: Lower

Course Attributes: Clinical Liability Insurance
The focus of this senior level elective course is to increase clinical efficiency and self-confidence. The student works as a member of a nursing team in association with a faculty member and RN preceptor. The nursing process is used to determine appropriate nursing interventions with emphasis on organization and priority setting among patients. Increased skill in using the nursing process, particularly the assessment and implementation phases, as well as increased ability to evaluate self-performance and increased levels of self-confidence are expected.

NURS 4201 - Preceptorship, 1 Credit
Prerequisite(s): NURS 3310 with C+ or better or NURS 3311 with C+ or better
Level: Lower
Course Attributes: Clinical Liability Insurance
The focus of this senior level elective course is to increase clinical efficiency and self-confidence. The student is able to work as a member of the nursing team in association with a faculty member and RN preceptor. The nursing process is used to determine appropriate nursing interventions with emphasis on organization and priority setting among patients. Increased skill in using the nursing process, particularly the assessment and implementation phases, as well as increased ability to evaluate self-performance and increased levels of self-confidence are expected.

NURS 4411 - Nursing IV, 11 Credit
Prerequisite(s): NURS 3311 with C+ or better or NURS 3310 with C+ or better
Level: Lower
Course Attributes: Clinical Liability Insurance
In Nursing IV, the student increases skills in applying the nursing process to a group of clients with chronic and/or critical health problems. The student develops his/her professional role as a leader and manager and is prepared for the transition from student to graduate. Nursing IV involves the student in specialty areas such as the Emergency Department, Intensive Care Unit and community agencies. Major health areas which are investigated include: Endocrine, Neurology, Cardiac, Respiratory, Obstetrical and Trauma Emergencies. To develop the role as a professional, the student participates in a group leader rotation and in a Manager of care rotation with freshman nursing students. Clinical experience continues to be two seven-hour days per week. A pediatric experience, public health rotation and a two day preceptorship are included. Students continue to focus on prevention and health education in the clinical and community setting. In the clinical lab, the student cares for clients in a more critical and complex situation.

NURS 4900 - Directed Study, 1 to 6 Credits
Level: Lower
Directed study may be arranged for students interested in study in the field of nursing relative to areas of special interest.

NURS 5003 - Ethical Issues in Health Care, 3 Credits
Prerequisite(s): NURS 1109 with D or better
Corequisite(s):
Level: Upper
This course examines ethical positions arising from the advancement of modern medicine. Emphasis is placed on ethical theories and principles that guide decision-making in healthcare. Critical reasoning skills are used to analyze ethical issues and to help students understand how to make action oriented decisions for controversial healthcare questions. Aspects of inquiry and ways of knowing are explored, relative to selected ethical dilemmas or issues. Students will research and present a case study on an ethical health care issue. COURSE PREREQUISITES: Matriculated into Nursing Major 535 or NURS 3311 with B or better.

NURS 5023 - Contemporary Nursing, 3 Credits
Prerequisite(s):
Level: Upper
Course Attributes: Clinical Liability Insurance
This course focuses on issues and trends in nursing and healthcare delivery to achieve a broad professional perspective for the expanded role of the baccalaureate prepared nurse. Selected issues and concepts will also be analyzed with depth to determine the impact on

rural healthcare delivery. The course also focuses on principles related to critical reasoning and decision-making processes to help the student to better understand the challenges and opportunities in the political, social, and healthcare environment. In addition, issues related to workforce and workplace, policy development, advancement of the profession, and advocacy will be addressed. Lastly, concepts of service learning and social justice will be explored relative to undeserved and/or vulnerable populations. Students will research and present information on a service learning project. COURSE PREREQUISITES: Matriculated into Nursing Major 535 or NURS 3311 with B or better.

NURS 6003 - Nursing Leadership/Management, 3 Credits

Prerequisite(s): NURS 5003 with C or better and NURS 5023 with C or better
Level: Upper
Course Attributes: Clinical Liability Insurance
This nursing course focuses on the development of decision-making knowledge and skills for the nurse leader. The principles of management and leadership are addressed in the course. Course content includes role concepts, change theory, fiscal management, organizational structure, conflict resolution, impact of unionization, quality control, and performance appraisal. In addition, evidence-based leadership and decision-making for public policy are explored in the course. Lastly, service learning will be further explored with an in-depth focus on concepts of social justice and the nursing leadership role.

NURS 6403 - Adv Pharmacology, Herbal Thera, 3 Credits

Prerequisite(s):
Level: Upper
This advanced course involves the study of drug preparations relative to their mechanism of action, physiological effects, methods of administration, therapeutic dosages, healthcare practitioner responsibilities, interactions, untoward effects, and legal implications. The course also explores the use of common herbal therapies, over the counter medications, and nutritional supplements. In addition, the course addresses off-label use of drugs and bioidentical preparations and their therapeutic use. Students will present a patient teaching plan. COURSE PREREQUISITES: Matriculated into Nursing Major 535 or NURS 3311 with C+ or better.

NURS 6413 - Health Assmt & Promotion Acros, 3 Credits

Prerequisite(s): NURS 5003 with C or better and NURS 5023 with C or better
Level: Upper
Course Attributes: Clinical Liability Insurance
This course focuses on a wholistic approach to health assessment and promotion across the life span. The course builds on previously acquired knowledge and skills to allow a student to complete a comprehensive health assessment. Technological aspects for health assessment and promotion are addressed with the use of simulation where appropriate. Socio-cultural influences, growth and development, and gender are concepts integrated in the course. Students will be required to produce and present a health promotion plan.

NURS 7003 - Nursing Research, 3 Credits

Prerequisite(s): (MATH 1123 with D or better or MATH 1113 with D or better) and NURS 6003 with C or better and NURS 6413 with C or better
Level: Upper
Course Attributes: Clinical Liability Insurance
This course provides the student with the opportunity to examine the role of the nurse in the generation and application of research in the healthcare domain. The course focuses on the study and analysis of research in nursing practice to optimize client outcomes. Course content includes problem formulation; identification of variables; research design and methodology; data collection and analysis; and interpretation of findings. In addition, the course will focus on how theory and research relate to evidence-based practice. The steps of the research process will have sufficient depth covered to allow for a beginning appreciation of scholarly inquiry and evaluation of selected nursing research studies. Student groups will present a topical research literature review.

NURS 7004 - Population Focused Care in Com, 4 Credits

Prerequisite(s): NURS 6003 with C or better and BIOL 6403 with C or better
Level: Upper

Course Attributes: Clinical Liability Insurance
This course focuses on the study of the role of the nurse addressing clients with special needs and vulnerable populations in the community. Evaluation of current public health issues, epidemiology, population-focused health care delivery, and available resources will be addressed. The course will also enable the student to participate with health prevention and promotion in a variety of settings. The course incorporates a guided preceptorship for a community health immersion experience. Students will research and present information on a service learning project.

NURS 7023 - The History & Image of Nursing, 3 Credits
Prerequisite(s):
Level: Upper
This course is designed to provide an overview of the history of nursing and nursing images as they relate to the American health care system and society. The course also includes an overview of historiography or historical research as well as fundamental principles for critiquing historical studies or narratives. The course also addresses issues of class, race, gender, and societal values as possible influences on the development of the nursing profession. Lastly, the course includes a review of selected past nursing leaders within his/her context and influence upon modern nursing. Students will produce presentations on topical nursing image concerns. COURSE PREREQUISITES: Matriculated into Nursing Major 535 or NURS 3311 with C+ or better.

NURS 7033 - Healthy Aging in Rural Areas, 3 Credits
Prerequisite(s):
Level: Upper
This course focuses on the healthcare of elders including the unique aspects of aging across the adult lifespan. Elders and their needs are framed from a physical, psychological, social, cultural and spiritual perspective and within a family and community environment. Emphasis in the course is on health maintenance, prevention, and promotion as well as maintaining function and preventing disability in the elderly. The student will offer a presentation addressing contemporary nursing and healthcare issues affecting elders in rural areas. COURSE PREREQUISITES: Matriculated into Nursing Major 535 or NURS 3311 with C+ or better.

NURS 8002 - Informatics & Tech App in Hlth, 2 Credits
Prerequisite(s): NURS 7003 with C or better and NURS 7004 with C or better
Level: Upper
This course will focus on informatics and technology applications in the healthcare setting. The course covers the use of information systems and technologies such as telehealth, electronic health record (EHR), distance and e-learning, digital personal record, and databases. In addition, the course will explore the use of portable and personal devices such as personal digital assistant (PDA), IPOD Touch portable media player, portable computer, and other mobile platforms in the healthcare setting. The course will also address the integration of topics related to legal, ethical, and policy issues affecting information management and technology in healthcare delivery. Finally, the course will explore information technology systems as they relate to workflow and redesign in various healthcare settings to improve client outcomes. Students will offer a presentation to implement a telehealth or e-learning application in health care.

NURS 8013 - Professional Capstone, 3 Credits
Prerequisite(s): NURS 7003 with C or better and NURS 7004 with C or better
Level: Upper
Course Attributes: Clinical Liability Insurance
This capstone course continues to expand and explore content to prepare the student for an autonomous role as a baccalaureate-prepared practitioner in health care. Course activities help the student identify a health care need in a rural setting in order to design and implement a project to address the selected concern. In addition, the course content allows the student to further develop a personal philosophy through the culminating socialization process to the expanded and autonomous role. Students will offer both written and oral capstone presentations.

NURS 8043 - Political Activism & Nursing, 3 Credits
Prerequisite(s):

Level: Upper
This course is designed to provide the student with a knowledge base and develop skills for implementation of political activism for the nursing profession within the United States of America or U. S. healthcare system. The course focuses on the politics of health policy in terms of legislative and executive processes at the local, state, and federal level. The course also explores economic, social, ethical and political factors related to activism and healthcare delivery. In addition, political aspects are explored relative to individuals or groups of importance, including special interest groups, lobbyists, the press, elected officials, legislative staff, and public agencies. Students will produce an analysis of healthcare systems and policies of selected countries compared to the U.S. healthcare system and industry. COURSE PREREQUISITES: Matriculated into Nursing Major 535 or NURS 3311 with C+ or better.

PHILOSOPHY

PHIL 1073 - Problems of Philosophy, 3 Credits

Level: Lower
Course Attributes: Gen Ed - Humanities, Liberal Arts and Science
Problems in Philosophy examines some of the fundamental questions, controversial issues, and major problems faced by people in relationship to the world. It also focuses on some of the methods for inquiry and problem-solving that people have devised to make their world more comprehensible. The course is designed, through readings and class discussions, to promote critical thinking and to develop effective techniques of systematic inquiry.

PHIL 2013 - Critical Thinking, 3 Credits

Level: Lower
Course Attributes: Gen Ed - Humanities, Liberal Arts and Science
This course has a three part structure: 1. Logic. At root, critical thinking is the ability to reason; to think logically. Students will learn core concepts such as validity, soundness, logical form, and informal fallacies. 2. Applied Argument Construction. Students will learn to construct and critique ordinary and scientific arguments, both in written and oral form, using the logical principles learned in the Logic component of the course. 3. Alternative Reasoning Methods. Students will be encouraged to identify and examine arguments based on cultural background, gender, religious convictions, requirements of classical logic. Students will be encouraged to identify and examine such arguments. The purpose of this examination is not to invalidate or endorse alternative reasoning methods, but to encourage students to talk with each other about the difference and similarities in the ways they make judgments. and other factors. Writing is continued in assignments related to readings, class discussions, and lectures.

PHIL 2173 - Ethics, 3 Credits

Level: Lower
Course Attributes: Gen Ed - Humanities, Liberal Arts and Science
Ethics is a course designed to inquire into the nature of values and how we acquire them. It studies some major ethical systems derived from such values that have been used to evaluate man's conduct. It encourages students to discuss theories as applied to existing moral dilemmas. Writing is continued in assignments related to readings, class discussions, and lectures.

PHIL 2900 - Directed Study, 1 to 3 Credits

Level: Lower
Course Attributes: Gen Ed - Humanities
The student may contract for one to three credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student must submit a plan acceptable to the instructor and the department chairperson. To be substituted for the listed humanities requirements, a directed study course must be so designated by the department chair. Writing is continued in assignments related to readings, class discussions, and lectures.

PHIL 5013 - The Meaning of Life, 3 Credits

Prerequisite(s): LITR 2603 with C or better

Level: Upper
A survey of the existing literature that seeks to answer the question "What is the Meaning of Life?" Major topics include: free will vs. determinism, the theistic solution to the problem, the non-theistic solution, and an examination of the cogency of the question itself. Writing is continued in assignments related to readings, class discussions, and lectures.

PHIL 6033 - Biomedical Ethics, 3 Credits

Prerequisite(s): COMP 1503 with D or better and BIOL 1104 with D or better or BIOL 1303 with D or better or BIOL 1404 with D or better or BIOL 1813 with D or better or BIOL 2204 with D or better or BIOL 2504 with D or better or BIOL 2803 with D or better or BIOL 4254 with D or better or CHEM 1114 with D or better or CHEM 1514 with D or better or CHEM 1984 with D or better or CHEM 2124 with D or better or CHEM 2984 with D or better or CHEM 3514 with D or better or CHEM 4524 with D or better or NURS 1108 with D or better or NURS 2001 with D or better or NURS 2201 with D or better or NURS 2208 with D or better or NURS 3310 with D or better or NURS 3403 with D or better or NURS 4001 with D or better or NURS 4410 with D or better or NURS 4502 with D or better or NURS 5513 with D or better or NURS 6403 with D or better or VETS 2013 with D or better or VETS 2014 with D or better or VETS 3002 with D or better or VETS 3004 with D or better or VETS 3024 with D or better or VETS 3204 with D or better or VETS 4103 with D or better or VETS 4202 with D or better
Level: Upper
Course Attributes: Gen Ed - Humanities, Liberal Arts and Science
This course is a study of specific ethical problems in the practice of medical science. Ethical issues examined include abortion, impaired infants, euthanasia, paternalism, truth-telling, confidentiality, human and animal experimentation, reproduction, cloning, and scarcity of resources. The purpose of the course is to provide an accepted ethical and biomedical framework to enable the student to reason clearly and effectively about the ethics involved in medical science and technology. Class sessions emphasize student participation and debate and use case studies as a format for discussion. The course assumes no prior knowledge of philosophical ethics. The course has also been designed to help students refine their ability to read and write scholarly work.

PHIL 6053 - Philosophy of Science, 3 Credits

Prerequisite(s): COMP 1503 with D or better or BIOL 1303 with D or better or BIOL 1404 with D or better or BIOL 1813 with D or better or BIOL 2204 with D or better or BIOL 2504 with D or better or BIOL 2803 with D or better or BIOL 4254 with D or better or CHEM 1114 with D or better or CHEM 1514 with D or better or CHEM 1984 with D or better or CHEM 2124 with D or better or CHEM 2984 with D or better or CHEM 3514 with D or better or CHEM 4524 with D or better or PHYS 1024 with D or better or PHYS 1044 with D or better or PHYS 1064 with D or better or PHYS 2014 with D or better or PHYS 2023 with D or better or PHYS 2044 with D or better or PHYS 2064 with D or better and BIOL 1104 with D or better
Level: Upper
Course Attributes: Gen Ed - Humanities, Liberal Arts and Science
This course is designed to develop and refine students' views about the nature of science, and the nature of change, both gradual and revolutionary, in scientific theory. This course uses work in the history of science and philosophy of science to address the nature of scientific disciplines (the theories and problems which characterize them); the relations between theory and the empirical work; and the nature of theory changes in the sciences. The course has also been designed to help students refine their ability to read and write scholarly work, including a major research project.

PHYSICS

PHYS 1004 - Pre-Physics*, 4 Credits

Level: Lower-Developmental/Remedial Course
Course Attributes: Remedial
This course is designed for those students who need preparation for taking a college level physics course. It would also be appropriate for non-science/ non-technology students who wish to increase their grasp of the concepts of physics in a non-traditional way. The course is designed to develop physical concepts in a highly interactive laboratory and computer setting and to developing problem solving skill. There will be opportunities to manipulate real objects, and study their behavior by means of data collection and computer analysis. Topics covered include measurement and units, the metric system, graphing, kinematics, vectors and scalars

and introduction to the laws of motion.

PHYS 1014 - Introductory Physics, 4 Credits

Level: Lower

This course is appropriate for students lacking a strong math and science background and is designed to develop physical concepts in the classroom in a highly interactive laboratory. The laboratory portion of the course will include traditional and conceptual physics experiments, computer work and time devoted to physics problem solving. Considerable attention is paid to problem solving and the development of problem analysis skills.

PHYS 1024 - General Physics I, 4 Credits

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

Prerequisite: a working knowledge of algebra. This is the first semester of a one-year course designed primarily for students at the Engineering Technology level. The topics covered include: vectors, linear and rotational kinematics, linear dynamics, equilibrium, friction, work, energy, power, momentum and collisions, and gravitation, and rotational momentum and collisions and gravitation.

PHYS 1044 - College Physics I, 4 Credits

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This is the first semester of a two semester sequence, which is appropriate for a Liberal Arts or technical student who plans to complete a four year degree. The course describes the fundamental laws of natural environment and provides the student with an appreciation of how physics impacts nature and society. Problem solving is stressed. The course studies motion, force, energy, collision, rotational motion, heat, and fluids. This course includes a laboratory each week covering the topics listed for this course.

PHYS 1064 - Physics for Engr & Science I, 4 Credits

Prerequisite(s): MATH 1084 with D or better

Corequisite(s):

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This course is the first of a sequence of three semesters intended to cover elementary classical physics for those students who are planning to transfer into a four-year program in engineering, mathematics, or one of the natural sciences. The topics covered include: measurements, vectors, kinematics, dynamics, work and energy, momentum and collision, equilibrium or rigid bodies, and gravitation. This course includes a lab each week covering the topics listed for this course.

PHYS 2014 - Pre-Physics II*, 4 Credits

Level: Lower-Developmental/Remedial Course

Course Attributes: Remedial

This course is a continuation of PHYS 1004. The topics to be covered are primarily taken from the area of mechanics. Considerable attention is paid to problem solving and the development of problem attack skills. The laboratory/recitation portion of the course will include lecture demonstrations, some laboratory work, and substantial time devoted to physics problem-solving. This course is remedial/developmental in nature and does not satisfy any degree requirements. Topics include: motion, Newton's Laws, torque, friction and static's.

PHYS 2023 - General Physics II, 3 Credits

Prerequisite(s): PHYS 1024 with D or better

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This course is a continuation of PHYS 1024. Topics covered include: wave motion, sound, electrostatics, current, electricity, electric circuits, magnetic effects, light and illumination, reflection, refraction, mirrors, thin lenses, dispersion, interference, and diffraction. Laboratory work is also included covering most of these topics.

PHYS 2044 - College Physics II, 4 Credits

Prerequisite(s): PHYS 1044 with D or better

Level: Lower
Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science
This course is a continuation of PHYS 1044. It is appropriate for a Liberal Arts or technical student who plans to complete a four-year degree. The topics covered include: simple harmonic motion, waves, light, electricity and magnetism. Problem solving is stressed. The course includes a lab each week covering the topics listed for this course.

PHYS 2064 - Physics for Engr & Sci II, 4 Credits
Prerequisite(s): PHYS 1064 with D or better
Level: Lower
Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science
This course is a continuation of PHYS 1064. Topics include: wave motion, simple harmonic motion, electricity, and circuit analysis. The course includes a lab each week covering the topics listed for this course.

PHYS 2900 - Directed Study, 1 to 5 Credits
Level: Lower
A student may contract for one to five credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

PHYS 3064 - Physics for Engr & Science III, 4 Credits
Prerequisite(s): PHYS 2064 with D or better
Level: Lower
Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science
This course is a continuation of PHYS 2064. Topics covered include: magnetism (Bio-Savart law, Ampere's law, Farady's law, Maxwell's equation), light (reflection, refraction, mirrors, lenses, interference, diffraction, gratings, spectra), and selected topics in modern physics. The course includes a lab each week covering the topics listed for this course.

PHYS 8013 - Modern Physics, 3 Credits
Prerequisite(s): (PHYS 2023 with D or better or PHYS 2044 with D or better or PHYS 2064 with D or better) and (MATH 2094 with D or better or MATH 2074 with D or better)
Level: Upper
Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science
This is a one-semester course designed primarily for BT/BS students, but can be taken by any students who meet the pre-requisites. This course is designed to provide students with information about the discoveries made, ideas and concepts advanced, and the knowledge gained in physics during the past hundred years. Topics include: relativity, corpuscular nature, matter waves, atomic physics, quantum mechanics, quantum theory or hydrogen, many-electron atoms, molecular structure, statistical mechanics, and properties of solids. Lecture/Laboratory. This course includes lab work covering the topics listed for this course.

POLITICAL SCIENCE

PLSC 1043 - American Government, 3 Credits
Level: Lower
Course Attributes: Gen Ed - American History, Gen Ed - Social Sciences, Liberal Arts and Science
This course provides an introduction to American government. Students will examine the basic framework and institutions of government, including the U.S. Constitution and branches of government. The development and historical growth of government will be discussed as well as the effect of government on diverse social groups. Emphasis will also be on national policies regarding the economy, foreign relations, natural resources, and various moral/ethical issues, including civil rights and individual liberties.

PLSC 1053 - International Relations, 3 Credits
Level: Lower
Course Attributes: Gen Ed - Old World Civ, Liberal Arts and Science
This course examines the dynamics of the nation-state and the interrelationship among states. Attention will be given to the position of the United States as a world power in the past, present and future. Topics will include the history of international relations; U.S. foreign

policy and security challenges; the problems faced by less developed countries; international organizations; "globalization" and the dynamics of the world economy; and regional and national perspectives. An emphasis will be placed on current events and areas of conflict around the world.

PLSC 2900 - Directed Study, 1 to 4 Credits

Level: Lower

This course allows students who have successfully completed a previous course in political science to continue study in that subject. A student may contract for one to four credit hours. Directed study may be contracted by a student only with the approval of the directing instructor and the department chairperson.

PSYCHOLOGY

PSYC 1013 - General Psychology, 3 Credits

Level: Lower

Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science

The major emphasis of this course is on normal human behavior. Both the biological structure of the human organism and the effect of the environment upon behavior are studied. The major areas of psychological study, including research methods, sensation and perception, learning theories, and cognitive processes are surveyed.

PSYC 1023 - Human Development, 3 Credits

Prerequisite(s): PSYC 1013 with D or better

Level: Lower

Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science

This introductory course is designed to help students understand the basic concepts and principles of physical, cognitive, and psychosocial development at each major stage of life - from conception until old age. Major theories are explained and fully integrated throughout the human life span.

PSYC 1033 - Human Relations, 3 Credits

Level: Lower

Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science

This course covers the problems of human adjustment using the psychoanalytic, social-learning, and humanistic perspectives. The course also focuses on stress, its effects and its management. The third area of study concerns interpersonal and social aspects of adjustment.

PSYC 1053 - Intro to Social Psychology, 3 Credits

Level: Lower

Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science

The course is an introduction to social psychology - the scientific discipline which studies the psychology of the individual in society. It focuses on the individual during social interaction, social influence, and interaction processes. Among topics considered are: attitude change, person perception, attribution theory, verbal and nonverbal communication, conformity and nonconformity, aggression and affiliation, power, social justice, and interpersonal attraction.

PSYC 1063 - Basic Helping Skills, 3 Credits

Prerequisite(s): PSYC 1013 with D or better

Level: Lower

Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science

This course is designed to assist the student in developing the helping skills necessary to conduct a productive, helping session. Helping models, ethical considerations, and interview methods will be examined, particularly as they apply to the human services field. Students will video and participate in mock counseling sessions.

PSYC 2033 - Adolescent Development, 3 Credits

Prerequisite(s): PSYC 1013 with D or better

Level: Lower

Adolescent Development is an introduction to the physical, cognitive, and social changes which occur between puberty and young adulthood. Contemporary issues of gender, sexuality, morality, and education are discussed. Psychological theories and developmental stages of

life will be explored by the student and applied to adolescent behavior.

PSYC 2093 - Abnormal Psychology, 3 Credits

Prerequisite(s): PSYC 1013 with D or better
Level: Lower
Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science
The major emphasis of this course is the understanding of the symptoms, etiology, diagnostic classification, and theories pertaining to psychopathology. Special attention is paid to the medical model, the psychological model, and the behaviorist model as they apply to the causes and treatment of the behavioral disorders. Newer developments in therapy which treat mental disorders as problems of living rather than specific diseases are analyzed.

PSYC 2900 - Directed Study, 1 to 4 Credits

Level: Lower
This course allows students who have successfully completed a previous course in psychology to continue study in that subject. A student may contract for one to four credit hours. However, directed study may be contracted by a student only with the approval of the directing instructor and the department chairperson.

PSYC 5013 - Counseling Theory, 3 Credits

Prerequisite(s): PSYC 1063 with D or better
Level: Upper
This course is intended to provide students with an overview of current psychological approaches to helping. Topics will include theories of counseling, cultural issues, professional concerns and ethical standards of the field. The course will also address issues related to the historical and theoretical bases of crisis intervention.

PSYC 5103 - Industrial/Orgnztnl Psychology, 3 Credits

Prerequisite(s): PSYC 1013 with D or better or PSY 1013 with D or better
Level: Upper
Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science
Industrial/Organizational Psychology is an advanced course which applies the principles of psychology to the workplace. The focus of the course is on such topics as scientific management, human relations, motivation, group dynamics, and personnel selection. Students will learn about performance appraisal, leadership skills, labor-management relations, and organizational communication. Other topics for discussion include employment discrimination, sexual harassment, and the abuse of drugs.

READING

READ 2193 - Effective College Reading, 3 Credits

Level: Lower
Students may be placed in this course based on test scores or may take it as an elective to expand reading skills beyond the literal comprehension level, improve flexibility and efficiency, and effectively apply these proficiencies. Vocabulary development, critical reading, critical thinking, and discussion skills will be emphasized and will enable the student to apply learning strategies and processes to the reading of college texts.

RELIGION

RELG 7003 - Religions of the World, 3 Credits

Prerequisite(s): COMP 1503 with D or better
Level: Upper
Course Attributes: Gen Ed - Humanities, Liberal Arts and Science
Students will explore diverse religious perspectives and ways of thinking and writing about religious themes and religious experience. Through the study of primary religious texts and secondary critical analyses, the student will develop a broad understanding of the diversity of religions that have shaped and continue to influence and direct the course of human civilization. Class sessions emphasize student discussion, and assignments encourage student reflection about the meaning and role of religion and religious diversity in their lives and those of others. Research and substantial writing assignments will further develop the

student's writing, interpretation, critical thinking, and information literacy skills.

SOCIOLOGY

SOCI 1163 - General Sociology, 3 Credits

Level: Lower
Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science
Sociology is the scientific study of society and social groups. This introductory course discusses the research methods, basic concepts, theories and perspectives used by sociologists. Among the topics covered are culture, socialization, social structure, deviance, social stratification, diversity, globalization, minority groups, gender, and selected social institutions.

SOCI 1183 - Contemporary Social Problems, 3 Credits

Prerequisite(s): SOCI 1163 with D or better
Level: Lower
Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science
The purpose of the course is to acquaint the student with a broad spectrum of social problems within the contemporary United States. The factors causing social and cultural problems will be emphasized. Each student will be required to use sociological principles to analyze one selected problem.

SOCI 1193 - Marriage & Famly Acrs Wrld Clt, 3 Credits

Level: Lower
Course Attributes: Gen Ed - Old World Civ, Gen Ed - Social Sciences, Liberal Arts and Science
This course provides a cross-cultural and global perspective on society's two vital institutions: Marriage and the Family. Comparative analysis is used throughout the course to enhance student appreciation of the intercultural variability and similarity in these institutions.

SOCI 1223 - Minority Cultures, 3 Credits

Prerequisite(s): SOCI 1163 with D or better
Level: Lower
Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science
The course is a survey of historical and contemporary majority group-minority group relations in the United States. Using a sociological perspective, it focuses on the impact of ethnicity, race and gender on the distribution of power, opportunity and privilege. The emphasis is on the social construction of systems of difference. The course requires either a student research paper or a student presentation.

SOCI 1233 - Gerontology, 3 Credits

Prerequisite(s): SOCI 1163 with D or better
Level: Lower
Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science
This course provides an introduction to the study of human aging. Emphasis is placed on social gerontology, though research from both bio-gerontology and psycho-gerontology is discussed. The focus is primarily on aging in the United States, though some cross-cultural data is presented.

SOCI 1243 - Criminology, 3 Credits

Prerequisite(s): SOCI 1163 with D or better
Level: Lower
Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science
The course provides an introduction to the sociological study of crime and criminal behavior. Emphasis is given to the variable definitions of crime with respect to time and place, the causes and theories of crime, topologies of criminal behavior, and crime prevention strategies. An overview of the criminal justice system (law enforcement, the court process, and correction) is presented.

SOCI 2900 - Directed Study, 1 to 4 Credits

Level: Lower
This course allows students who have successfully completed a previous course in Sociology to continue study in that subject. A student may contract for one to four credit hours. Directed study may be contracted by a student only with the approval of the directing instructor and

the department chairperson.

SOCI 4900 - Directed Study, 1 to 6 Credits

Level: Lower

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chair. The instructor and student will confer regularly regarding the process of the study.

SOCI 5023 - Research Methods, 3 Credits

Prerequisite(s): MATH 1123 with D or better or MATH 1113 with D or better

Level: Upper

With an emphasis on human service agencies and evaluation research, this upper-level course focuses on the how's and why's of doing research. The research techniques used by human services practitioners and social scientists are discussed. Ethical ways to build knowledge and to conduct program evaluation are examined. Students gain practical experience in doing research by designing their own agency-focused research project. SPSS will be the data analysis package utilized.

SOCI 5213 - Science, Technology & Society, 3 Credits

Prerequisite(s): HIST 1113 with D or better or HIST 1143 with D or better or HIST 2153 with D or better or PLSC 1043 with D or better or SOCI 1163 with D or better

Level: Upper

Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science

This course is a survey of the growth of science and technology and their impact upon society as a whole with primary emphasis upon the United States. Major concentration is on the period since the mid-nineteenth century emphasizing the intellectual climate leading to and resulting from scientific and technological changes and the influence of these developments upon industry, government, education, agriculture, ecology and other areas.

SPANISH

SPAN 1203 - Spanish I, 3 Credits

Level: Lower

Course Attributes: Gen Ed - Foreign Languages, Liberal Arts and Science

This course focuses on developing the student's ability to speak, to write, and to read Spanish. Additional emphasis is given to learning about the diverse cultures of the Spanish-speaking world. Instruction centers on oral communication, grammar (especially formation of verbs), and cultural awareness. Writing is continued in assignments related to readings, class discussions, and lectures.

SPAN 2203 - Spanish II, 3 Credits

Prerequisite(s): SPAN 1203 with D or better

Level: Lower

Course Attributes: Gen Ed - Foreign Languages, Liberal Arts and Science

This second semester course is designed to suit the needs of persons who wish to learn to communicate orally in the Spanish language for purposes of travel, business, personal pleasure, and academia environment. The student's listening, speaking, reading and writing skills in Spanish will be further developed.

SPAN 4900 - Directed Study, 1 to 6 Credits

Level: Lower

A student may contract for an independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

SPEECH

SPCH 1083 - Effective Speaking, 3 Credits

Prerequisite(s): COMP 1503 with D or better

Level: Lower

Course Attributes: Gen Ed - Basic Comm Option 1, Liberal Arts and Science

This course deals with preparing, presenting, and critiquing the basic speech types: reporting,

demonstration, and argumentation. Special attention is given to collecting, selecting, and arranging of material; to presenting and delivering; and to active listening and critical evaluating. The course stresses principles of interpersonal communication and provides a basis for the understanding of speech through utilizing various media. The course is designed to help students obtain the speaking skills with which to respond to various oral communication situations encountered throughout college and in professional, civic, and social areas before and after graduation. This course cannot be used to satisfy the six (6) hour humanities requirement for graduation. Writing is continued in assignments related to readings, class discussions, and lectures.

SPCH 2900 - Directed Study, 1 to 3 Credits

Level: Lower

The student may contract for one to three credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student must submit a plan acceptable to the instructor and the department chairperson. Writing is continued in assignments related to readings, class discussions, and lectures.

SPCH 5083 - Communication in the Workplace, 3 Credits

Prerequisite(s): COMP 1503 with D or better and SPCH 1083 with D or better

Level: Upper

Course Attributes: Gen Ed - Basic Comm Option 2, Liberal Arts and Science

The class is designed to give students the opportunity to obtain the communications skills encountered throughout college and his or her personal and professional life. Special attention is given to the theory of organizational communication, basic communication skills, interpersonal communication, employer-employee relations, group communication, and presentational speaking.

SPORTS MANAGEMENT

SPMG 1123 - Intro to Sports Management, 3 Credits

Level: Lower

This course is an investigation of the scope of the sport industry, which is a growing major business enterprise in the United States and in much of the world. The various functions of effective management, and the skills, attributes and roles required of the sport manager are discussed. Attention will be focused on how the managerial process relates to sport organizations and the products they provide. Students become acquainted with career opportunities in the sport management field. The course is designed to provide an overview of sports administration with an emphasis on management principles and career opportunities. Course content will include lectures, guest speakers, and group discussions.

SPMG 2003 - Sport in Society, 3 Credits

Prerequisite(s): SPMG 1123 with D or better

Level: Lower

An in-depth examination of sport in society, particularly the United States. A review of the role of sport participants, spectators, and the media on society is included. Various organizational levels of sporting opportunity and sporting behavior, including sport ethics, resulting from the influence of society will be covered.

SPMG 2123 - History of Sport, 3 Credits

Level: Lower

This course focuses on the role of sport in past and contemporary societies. Consideration and discussion of sport as a microcosm of society, and a mirror of American life, will be conducted. Political, economic, military, and societal issues of sports participation are examined, as well as the impact of sport on the shaping of society and culture. Lecture, discussion, research and case assignments will comprise the instructional methodology.

SPMG 3001 - Field Experience I, 1 Credit

Prerequisite(s): SPMG 1123 with D or better

Level: Lower

This course encompasses a semester of supervised, hands-on experience working in the field of sport management. A minimum of 45 hours of work throughout the semester is required.

SPMG 3003 - Sport Marketing, 3 Credits

Prerequisite(s): MKTG 2073 with D or better
Level: Lower
This course examines the unique nature of Sport Marketing and the elements of the marketing mix. Major topics include an overview of the sport market, the critical nature of market research and market segmentation, developing an understanding of the special nature of the sport product, pricing within sport marketing, the role of promotion in the sport market, and the theory of "place" in sport. Students will be responsible for developing a sport marketing plan.

SPMG 3013 - Sport Communication, 3 Credits
Prerequisite(s): COMP 1503 with D or better and BUAD 2033 with D or better and SPMG 1123 with D or better
Level: Lower
An introduction to the study of policies and procedures utilized in dealing with communication issues occurring within the sports industry, including print and electronic media, the internal and external constituencies to be served, and the development of specific forms of communication approaches. Heavy emphasis will be placed on the practical as opposed to the theoretical, as well as, a thorough understanding of the unique aspects of communication in sport.

SPMG 4001 - Field Experience II, 1 Credit
Prerequisite(s): SPMG 1123 with D or better and SPMG 3001 with D or better
Level: Lower
This course encompasses a semester of supervised, hands-on experience working in the field of sport management. A minimum of 45 hours of work throughout the semester is required. At the end of this internship the student will produce a four-page paper outlining their evaluation of their career future.

SPMG 4003 - Sport Law, 3 Credits
Prerequisite(s): (SPMG 1123 with D or better and BUAD 3043 with D or better) or BUAD 7023 with D or better
Level: Lower
This course is a study of the legal environment in which sport management professionals function. Included will be aspects of negligence theory, intentional torts, risk management, contract law, constitutional law, and legislation specifically related to sport.

SPMG 4123 - Sport Facility Management, 3 Credits
Level: Lower
This course investigates the elements, issues, and problems that shape the planning and management of sport facilities and events. Similarities and differences of facility types, reasons for development, terminology, types of events held, service contracts, financial operations, marketing and economic impacts are some of the issues covered. Building revenues from the sport facility, event services, and financing sources are all critical to the successful management of the multi-million dollar facilities that house today's major sport events. Course content will include lectures, guest speakers, and group discussions.

SPMG 4900 - Directed Study, 1 to 6 Credits
Level: Lower
A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

SPMG 5003 - Sport Business and Finance, 3 Credits
Prerequisite(s): SPMG 1123 with D or better and ACCT 1124 with D or better and ACCT 2224 with D or better
Level: Upper
This course is a focus on business topics as they relate to the fiscal and budgetary control of public and private sport organizations, leagues, and facilities. Topics include sources of funding and revenue, the implementation and use of an economic impact analysis, and a review of budgeting and financial statements.

SPMG 6003 - Sport Marketing, 3 Credits
Prerequisite(s): MKTG 2073 with D or better
Level: Upper
This course is designed to be an examination of the unique nature of Sport Marketing. This course will examine the elements of the marketing mix form that perspective. Major topics include an overview of the sport market, the critical nature of market research and market segmentation, developing an understanding of the special nature of the sport product, pricing within sport marketing, the role of promotion in the sport market, and the theory of "place" in sport. Students will be responsible for designing, implementing and evaluating a sport marketing research plan.

SPMG 6013 - Licensing and Endorsements, 3 Credits
Prerequisite(s): SPMG 1123 with D or better and SPMG 6003 with D or better
Level: Upper
A study of the details involved in the development of a corporate licensing program, as well as, the licensing of intellectual property from corporations. The learner will be exposed to the necessary details of becoming a licensee or a licensor. Product value, agreements, endorsements, royalties, enforcement, and legal issues will all be included.

SPMG 6023 - Event Promotion and Sales, 3 Credits
Prerequisite(s): SPMG 1123 with D or better and SPMG 4123 with D or better
Level: Upper
A comprehensive review of the skills and tasks required to successfully sell a sporting event to the consumer. Creating an effective sales culture, examining incentives for sport consumers, sales management and servicing, and the role of technology in sport promotion and sales are included. Additionally, this course explores sales training, the art of ticket sales, customer retention, branding, and sales risk management.

SPMG 6033 - Sponsorship, 3 Credits
Prerequisite(s): SPMG 1123 with D or better and SPMG 6003 with D or better
Level: Upper
A detailed study of corporate sponsorships. Topics will include acquisition, service, sponsor and property objectives, rights, negotiations, sponsorship evaluations, contracts, proposals, and presentations.

SPMG 7001 - Pre-Internship Seminar, 1 Credit
Prerequisite(s): SPMG 1123 with D or better
Level: Upper
This course is a focus on the development, analysis, and pursuit of internship and career goals. Emphasis is placed on the development of a professional portfolio, including cover letters, resumes, and basic interviewing techniques. Related issues, professional ethics, and etiquette will be explored.

SPMG 7023 - Strategc Mgmt in Sport Organtn, 3 Credits
Prerequisite(s): SPMG 1123 with D or better and BUAD 3153 with D or better
Level: Upper
This course is a study of the administrative structure of sport organizations including those existing to serve at a local, national, and international level. Emphasis will be placed on existing structures and how best to function within each to accomplish objectives.

TECHNOLOGY MANAGEMENT

TMGT 5001 - Professional Business Seminar, 1 Credit
Level: Upper
This course helps students transition from college to their professional career. General topics such as managing self (including time and stress), professional communications, effective meeting management, and internship preparation will be presented to aid the students' success in their professional career. Specific discipline-focused sessions will also be included. Students will prepare a professional portfolio throughout the course.

TMGT 5900 - Directed Study, 1 to 6 Credits
Level: Upper

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

TMGT 7003 - Managing Technology Innovation, 3 Credits

Prerequisite(s): TMGT 7153 with D or better or BUAD 3153 with D or better
Level: Upper
This course is an application of theoretical approaches to technology management and innovation. Major concepts, tools, and processes will be explored through lecture, readings, team activities, and case study applications. Major topics include technology innovation, the assessment of technology and the importance of technology forecasts. Students will learn how to manage innovation strategy, technological evolution, and organizational context for technology management. Additional topics will also include strategic actions required by business, developing a firm's organizational innovation capabilities, creating and implementing a development strategy, new product development, and challenges to managing innovation.

TMGT 7013 - Systems Thinking for Busi Prof, 3 Credits

Prerequisite(s): TMGT 7153 with D or better or BUAD 3153 with D or better or BUAD 8023 with D or better
Level: Upper
This course is an introduction to the key concepts of systems thinking applied to complex business challenges. Systems thinking focuses on the interrelationships of elements within economic, social, political, technological, environmental, and other types of systems. This course is designed to help students understand and apply the principles of systems thinking in a business context to resolve complex issues and difficult problems.

TMGT 7153 - Principles of Management, 3 Credits

Level: Upper
This course deals with understanding management concepts and functions of encouraging employee's enthusiasm and creativity; finding shared vision, norms, and values, sharing information and power; and encouraging teamwork and participation. The concepts of planning, organizing, leading, and controlling are explored to show how these basic principles can be used to create a healthy and thriving environment in today's global environment of business and technology.

TMGT 8112 - Tech Management Internship, 12 Credits

Level: Upper
This internship is designed to assist the student in making the transition from the classroom to industry. This integration of work allows a degree of independence and an element of learning that is not possible in a conventional classroom. The intent of the internship is to provide each student with an experiential learning opportunity in a management situation as a pre-professional supervisor or manager. Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of education experiences under the direct supervision of an owner, manager or supervisor in their technical field or professional area. The interns will also be supervised by a faculty member who serves as Internship Coordinator. Written and oral reports, along with a journal of work activities and experiences, will be required. Evaluation will be based on the quality of experiences gained from the internship and student work performance.

VETERINARY TECHNOLOGY

VETS 1203 - Intro to Veterinary Technology, 3 Credits

Level: Lower
The course introduces the student to the terminology and specialization of the Veterinary Technology Curriculum. The nature of professional and ethical practices will be explored. Breeds and strains of domesticated animals will be studied and the student will be introduced to the basic concepts of animal behavior. The nature and form of medicines and the calculation of dose and dosages will be studied. The small animal handling laboratories will be held on site using animals from the local SPCA and Humane Society. A kennel assignment will be performed as a required part of the class.

VETS 1214 - Anatomy & Physiology of Large, 4 Credits

Level: Lower

Course Attributes: Liberal Arts and Science

This course is an organ systems approach to the study of anatomy and physiology using large animal species as the primary model. The course provides a functional integration of basic science and clinical information as it relates to the normal healthy animal in an integrated lecture and laboratory approach. Prosected large animal specimen both fresh and preserved, as well as skeletons and models will be utilized in the laboratory to allow applied reinforcement of concepts presented in the lecture. Histologic slides, kodachromes and radiographs will be utilized to enhance organ recognition through multiple formats and give the student a better understanding of organ function. The students will explore in greater depth and detail the course materials through questions and discussions fostered by the development of group Power Point presentations on topics that are related to the organ systems studied.

VETS 2013 - Pathophysiology of An Diseases, 3 Credits

Prerequisite(s): VETS 1203 with C or better and VETS 2014 with C or better

Level: Lower

Pathophysiology of Animal Disease is a course which provides the student with the understanding of basic science and clinical information as it relates to health and the process of disease in companion animals. It will utilize the body systems approach.

VETS 2014 - Anat & Phys of Sm Animals, 4 Credits

Prerequisite(s): VETS 1214 with D or better and VETS 1203 with C or better

Level: Lower

Course Attributes: Liberal Arts and Science

Anatomy and Physiology of small animals is a continuation of the study of anatomy and physiology which began using the organ system in VETS 1214 Large Animal Anatomy and Physiology. This course uses both companion and laboratory animals as the models on which we complete the discussion of the normal anatomy and physiologic function of animals. The course provides a functional integration of basic science and clinical information as it relates to the healthy animal in an integrated lecture and laboratory approach. Histological slides, kodachromes, and radiographs will also be utilized to enhance organ recognition and understanding of organ function. The students will explore in greater depth and detail the course materials through questions and discussions fostered by the development of group Power Point presentations on topics that are related to organ system studied.

VETS 3003 - Animal Health Care, 3 Credits

Prerequisite(s): VETS 1203 with D or better and VETS 1214 with D or better

Level: Lower

This course is designed to give first year students intensive animal handling skills and familiarity with basic procedures such as injections, venipuncture, bandaging, and dosage and fluid therapy calculations. Dentistry prophylaxis, recognition of dental abnormalities, and charting using both anatomic and Triadan systems will also be covered thoroughly. Students will also go on regular visits to a local Humane Society to perform technician-related duties.

VETS 3004 - Anesthesia & Surgical Nursing, 4 Credits

Prerequisite(s): VETS 2014 with C or better and VETS 3003 with C or better and VETS 3023 with C or better

Level: Lower

This course is designed to prepare the second year Veterinary Technology student to become the individual who can induce, maintain and recover small animal surgical patients. The student will also prepare the animals for surgery and assist in the surgical procedures. Upon course completion, the student will possess an understanding of all procedures done in vet practice with anesthesia and surgical nursing.

VETS 3013 - Animal Parasitology, 3 Credits

Prerequisite(s): VETS 1214 with D or better and VETS 1203 with C or better

Level: Lower

Parasitology is a multidisciplinary approach to the study of internal and external parasites of companion, exotic and farm animals. This course will integrate the student's knowledge of

anatomy and pharmacology while providing the student the opportunity to understand life cycles, diagnostic protocol, control and treatment of the most common internal and external parasites. The course will also develop the students' understanding of how to appropriately provide both verbal and written communications for the client concerning management, prevention and potential zoonosis of the common parasites. The laboratory will emphasize the common techniques used to identify the parasites of companion, laboratory and farm animals.

VETS 3023 - Radiography, 3 Credits

Prerequisite(s): VETS 2014 with D or better
Level: Lower
In this course students will examine body systems using radiographic and ultrasound procedures as tools in the evaluation of animals for the diagnosis and prognosis of numerous traumas, diseases and illnesses. The course integrates the production of the radiograph and its clinical use as it relates to the evaluation of healthy and ill animals. In the laboratory, students will utilize animal models, inanimate objects and living animals to perfect their understanding of patient positioning, radiographic exposures and film developing techniques. Emphasis is placed on safely producing diagnostic quality radiographs using both conventional and digital radiographic techniques, as well as providing the basic skills in the set up and operation of an ultrasound unit.

VETS 3024 - Clinical Laboratory Techniques, 4 Credits

Prerequisite(s): VETS 2014 with C or better and BIOL 5254 with C or better or VETS 3012 with D or better *
Level: Lower
This course introduces laboratory techniques performed in veterinary offices and clinics. Examination and testing of blood, feces, urine, and exudates are performed for diagnostic and prognostic purposes. Lectures deal with testing theories and relevance to animal health and disease. Laboratories develop skills necessary to maintain a safe laboratory working environment, institute quality control programs, collect, process, store, and transport clinical biological specimens. Major emphasis of the course is development of skills necessary to operate and maintain clinical analyzers, accurately perform laboratory tests, interpret, and report laboratory results on clinical specimens.

VETS 3204 - Farm Animal Management, 4 Credits

Level: Lower
This course is designed to provide the student insight into the behavior, care and management of farm animals. Dairy cattle, horses, sheep, swine, goats and other animals will be discussed. Emphasis will be placed on the practical aspects of veterinary nursing such as proper handling, restraint, evaluation, medication, treatment, and examination procedures that apply to farm animal species. Characteristics of the major breeds, terminology, disease control measures, housing, and basic management practices will also be covered.

VETS 4103 - Laboratory Animal and Exotics, 3 Credits

Prerequisite(s): VETS 1214 with D or better and VETS 1203 with C or better
Level: Lower
This course is designed to provide the student with basic knowledge and understanding of research facilities and their function. Students will be instructed in the care and handling of small animals used in the research laboratory. Emphasis will be placed on species differences, housing requirements, nutrition, reproduction, health, sanitation, and laboratory techniques applied in animal research and pharmaceutical facilities. Animal handling, observation and management time will be provided during the laboratory as well as during assigned vivarium duty. In addition, an exotic animal section has been added to familiarize students with the care and identification of common exotic species. (Exotics in this case will not include dogs or cats or species commonly found on farms.)

VETS 4202 - Small Animal Nutrition, 2 Credits

Prerequisite(s): VETS 1203 with C or better
Level: Lower
This is an introductory course for students accepted in the veterinary technology program, providing identification and function of nutrients, understanding pet food labels, and applications for wellness, life stage, and therapeutic nutrition (prescription food) for dogs and cats. The course will utilize an interactive Internet connection in the classroom.

VETS 4900 - Directed Study, 1 to 4 Credits

Level: Lower

A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

WELDING

WELD 1723 - Welders Calculations I, 3 Credits

Level: Lower

Basic mathematical functions used by the welder in the performance of their duties will be the subject of this course. Mathematical operations such as manipulation of fractions, decimals and unilaterally converting between the two and into the metric measurement system along with calculating perimeter, volumes, weight and bend calculations will be taught in this course. This mathematics course will be trade related and will focus on the math needed by the welder to perform their required tasks. All of the math topics taught in this course are trade related. This course is designed to meet the daily needs of welders. This course is not intended for a general math audience.

WELD 1724 - Gas Wldng/Cutng & Plasma Cutng, 4 Credits

Level: Lower

This course is designed to teach the student the fundamental skills of oxy-fuel and plasma processes used in industry. Major topics include principles of operation, component identification, equipment set up, minor repairs, process variables, and manual and automatic performance exercises. Laboratory exercises emphasize technique and skill development.

WELD 1728 - ArcWldng, Crbn Arc Ctng Gaugng, 8 Credits

Level: Lower

This course provides the student with a thorough technical understanding of shielded metal arc welding, carbon arc cutting, welding and cutting safety, power sources, and electrodes. Hands-on technical training will develop skills necessary to make quality arc welds on mild steel, in all positions and on varying plate thickness. Carbon arc skills will include cutting, gouging, and weld washing of mild steel.

WELD 1733 - Mtlrgy, Blprnt Rdng, Insp, Tst, 3 Credits

Level: Lower

This course provides the student with a thorough technical understanding of blueprint reading for welders and welding, symbol interpretation and application. Hands-on fabrication of weldments according to a textbook print will provide the necessary practice for development of print reading skills. The study of joint design, weldment inspection, and metallurgy will be performed by testing and evaluation of completed weld specimens which uses various metal and weld testing techniques, both destructive and nondestructive.

WELD 2715 - Shld Mtl Arc & Flx Crd Arc Wld, 5 Credits

Level: Lower

This course is designed to provide instruction on those welding processes used in industry that are in high demand including flux cored arc welding and shielded metal arc welding. All processes, positions, and joint types studied will be in accordance with American Welding Society specifications. Students will be active in the American Welding Society.

WELD 2725 - Gas Metal Arc Welding, 5 Credits

Level: Lower

This course is designed to provide instruction on those welding processes used in industry that are in high demand including flux cored arc welding and shielded metal arc welding. All processes, positions, and joint types studied will be in accordance with American Welding Society specifications. Students will be active in the American Welding Society.

WELD 2733 - Tolerancing & Working Drawings, 3 Credits

Level: Lower

This course is designed for the welding student to understand the typical working drawing and any tolerances that may apply. These tolerances include unilateral, bilateral and

geometric tolerances. The importance of accuracy and proper orientation of weldments will be stressed. This application will address all possible tolerancing and drawing applications the student will need to be effective as an industrial welder.

WELD 2735 - Gas Tungsten Arc Weldng I, 5 Credits

Level: Lower

This course provides the student with a thorough technical understanding of gas tungsten arc welding, welding safety, arc characteristics and welder certification. Hands-on technical training will develop skills necessary to make quality gas tungsten arc welds on mild steel, stainless steel, and aluminum using both direct and alternating current. Certification documentation for the student will be performed for all welding processes with special attention placed on code conformance and welding procedure development.

WELD 3005 - SMAW II, Codes/ Insp Basic CNC, 5 Credits

Level: Lower

This course covers safety standards, CNC machine set-up and operation, programming, theory, practice and performance of Shielded Metal Arc Welding (SMAW II). Students will learn and apply OSHA standards and correct CNC machine operation. CNC programming and SMAW II theory will also be covered. Students will be performing and variety of fillet and groove welds. All position qualification testing will prepare students for welder certification testing.

WELD 3015 - GMAW II, FCAW II, 5 Credits

Level: Lower

This course will cover the practice and proper use of protective clothing, equipment, and hand tools for the safe use of constant voltage welding equipment. Students will learn to work with different shielding gas mixtures, make adjustments and repairs to equipment according to manufacturer's recommendations. Proper set up, operation and theory will qualify the student for certification in gas metal arc welding of steel, stainless and aluminum in the short arc, spray and globular modes of metal transfer. Qualification testing will also be performed in outer shield and inner shield flux cored arc welding.

WELD 3025 - GTAW II Comp of Materials, 5 Credits

Level: Lower

Students will learn setup and operating procedures, gas cylinder handling, flow meter and torch operations for welding aluminum, carbon and stainless steel pipe, tube and plate. The course will also cover the various methods of testing and inspection of welds. All position qualification testing will prepare students for welder certification testing.

WELD 3813 - Metlgy, Code, Cert, Insp & Tst, 3 Credits

Level: Lower

This course will cover the principles related to the welding metallurgy, the properties of metals, and the residual stress and distortion caused by the welding process. Locate the essential information for codes and standards pertaining to the industry and work assignments for the materials used. Students will be able to perform inspections of cut surfaces of prepared metals (pre-welding) and inspect, as well as test welds during and post welding.

WELD 4013 - Senior Project, 3 Credits

Level: Lower

This course is designed as a capstone project to verify a student's ability in all aspects of welding. The student will be required to identify a need for a new product or improvement on an existing product. After identification, the completion of the project will occur with minimal instructor guidance. This will allow the student to demonstrate their ability to perform independently. Upon completion, the student will demonstrate the functionality of their project in the form of a formal presentation. This will be a functional model of the student's own design.

WELD 4425 - GMAW III, FCAW III, SAW, 5 Credits

Level: Lower

This course will involve the safety inspections of the MIG welding equipment and its accessories. Student will be capable of making minor repairs to this equipment and accessories. This will also include the changing of wire electrodes and cable liners. Students will learn the troubleshooting of welding equipment problems, how to recognize them, and

the correct procedures in the use of the equipment. As before, setup and safe operation would be taught for both short circuit welding and for the pulsed spray transfer methods of welding. Students will perform welds on both carbon steel pipe and aluminum pipe. Using flux cored electrode, the student will be instructed in the use of self-shielding and gas shielding methods of filler transfer. Students will learn each method of welding as well as combinations of each.

WELD 4435 - SMAW III, GTAW III, 5 Credits

Level: Lower

This course involves the safety inspections of welding equipment and accessories. Student will be able to make external repairs to the equipment and accessories. Setup the components and accessories for a complete shielded metal arc welding system. Setup and operate the SMAW equipment for alloy pipe. Execute corrective actions to repair surface flaws on welds and base metals. Perform an unlimited thickness performance qualification test on carbon steel pipe. Perform a limited thickness performance qualification test on carbon steel and 300 series stainless steel pipe using stainless steel electrodes. Refinement will be made to student capabilities in SMAW, GTAW, and GMAW using various materials. Pipe welding using a variety of processes will be stressed. All instruction shall lead toward student certification for Level II AWS certification.

WELD 4445 - Welding Fabrication, 5 Credits

Level: Lower

This course will be conducted as though the student were employed in an actual work environment. The student will perform all necessary work in the fabrication of various parts. Safe and proper set up and use of appropriate equipment for various applications will be expected. Along with the setup and use of equipment, the student will be required to generate and apply weld process sheets and inspect each weld using industrially accepted inspection processes. The student will be observed in performing various duties common in industry today, as well as applications of any certifications, codes, and standards that must be met for qualifications. The student must also interpret destructive and non-destructive test results, as well as perform bend, penetrant and magnetic particle testing. They will perform visual examination and complete inspection records and reports.

WELD 4900 - Directed Study, 1 to 5 Credits

Level: Lower

A student may contract for one to five credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

PRESIDENT'S COUNCIL

JOHN M. ANDERSON (2008) - President
AS - Westchester Community College
BA - SUNY Brockport
MA - SUNY Geneseo
PhD - Cornell University

CRAIG R. CLARK (1989) - Executive Director & Dean of the School of Applied Technology
AS - Jamestown Community College
BS - University of Colorado
MS - North Carolina State University

TAMMY B. CONRAD (2004) - Assistant to the President
Olean Business Institute

STEPHEN J. HAVLOVIC (2010) - Vice President for Academic Affairs
BA, MLHR, PhD - Ohio State University

VALERIE NIXON (1987) - Vice President for Administration & Enrollment
BS - SUNY at Fredonia
MPS - Alfred University
"SUNY Chancellor's Award for Excellence in Professional Service, 1994-95"

DEBRA A. ROOT (2000) - Senior Director, Marketing and Communications
AAS, BFA - Rochester Institute of Technology
MPS - Alfred University

TERRY W. TUCKER (2010) - Dean, School of Arts and Sciences
BA - University of Pennsylvania
MEd - Pennsylvania State University
PhD - Cornell University

STEVEN J. TYRELL (2004) - Vice President for Student Affairs
BA, MA - SUNY at New Paltz
PhD - Michigan Tech

DEREK WESLEY (2011) - Vice President for Institutional Advancement
BA - UMASS Amherst
MEd, MA - Providence College
EdD - Johnson & Wales University

JOHN C. WILLIAMS (2002) - Dean, School of Management and Engineering Technology
BS, MS, PhD - Clarkson University

CHANEL P. WRIGHT (2008) - Executive Assistant to the President
BA - Nazareth College

KAREN K. YOUNG (1993) - Faculty Senate Chair & Associate Professor & Chair, Computerized Design & Manufacturing
AOS - SUNY College of Technology at Alfred

COLLEGE FACULTY AND STAFF

SUNY DISTINGUISHED PROFESSORS

ROBERT J. ALBRECHT (1967) - SUNY Distinguished Teaching Professor, English and Humanities
BA, MA - Alfred University
MEd - University at Buffalo
"New York State/United University Professionals Excellence Award, 1990"
"SUNY Chancellor's Award for Excellence in Teaching, 1997-98"

VICTORIA L. BOLTON (1974) - SUNY Distinguished Teaching Professor, Agriculture and Veterinary Technology
AAS - Alfred State College
BS, MT (ASCP) - SUNY Upstate Medical Center
MS - Alfred University
"SUNY Chancellor's Award for Excellence in Teaching, 1986-87"

JOHN D. BUCKWALTER (1982) - SUNY Distinguished Teaching Professor, Physical and Health Sciences
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LAWRENCE E. BURNS (1968) - SUNY Distinguished Teaching Professor, Mathematics and Physics
AAS - Alfred State College
BS - Purdue University
MS - University at Buffalo
"SUNY Chancellor's Award for Excellence in Teaching, 1995-96"

ANIKO V. CONSTANTINE (1974) - SUNY Distinguished Teaching Professor, English and Humanities
BA - Hartwick College
MA, PhD - University of Illinois
"SUNY Chancellor's Award for Excellence in Teaching, 1979-80"

MICHELLE A. GREEN (1984) - SUNY Distinguished Teaching Professor, Physical and Health Sciences
AAS - Alfred State College
BS - Daemen College
MPS - Alfred University
RHIA, CMA, CPC
"SUNY Chancellor's Award for Excellence in Teaching, 1999-00"

JAMES J. GRILLO (1972) - SUNY Distinguished Teaching Professor, Business
BS, MS - Alfred University
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ROBERT E. REES (1986) - SUNY Distinguished Service Professor, Electrical Engineering Technology
AS - Community College of Allegheny County
BSEE, MSEE - University of Pittsburgh
PE - Pennsylvania, Vermont
"SUNY Chancellor's Award for Excellence in Teaching, 1991-92"

EDWARD G. TEZAK (1998) - SUNY Distinguished Service Professor, Mechanical Engineering Technology
BS - US Military Academy
MS - UCLA
PhD - VPI & SU
PE - Virginia

FACULTY AND STAFF

ANWAR ABUBAKR (2010) - Residence Hall Director, Residential Life
BS - SUNY College of Technology at Alfred

AMIE ACTON (2009) - Instructional Support Assistant, Hinkle Memorial Library
BA - Alfred University

ROBERT J. ALBRECHT (1967) - SUNY Distinguished Teaching Professor, English and Humanities
BA, MA - Alfred University
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"New York State/United University Professions Excellence Award, 1990"
"SUNY Chancellor's Award for Excellence in Teaching, 1997-98"

MARK J. AMMAN (1983) - Professor & Chair, Physical and Health Sciences
BS - University of Pittsburgh
MS - Penn State University

MOLLY E. ANDRUS (2008) - Graphic Designer, Office of Communications
BA - Plattsburgh State University

COLLEEN H. ARGENTIERI (1988) - Director of Alumni Affairs, Institutional Advancement
AAS - SUNY College of Technology at Alfred

DARRYL ARROYO (2011) - Director of Athletics
PhD - University of Connecticut

KARLA M. BACK (2004) - Professor, Business
BA - University of Houston-University Park
MA - University of Houston-Clear Lake
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"SUNY Chancellor's Award for Excellence in Professional Service, 2002-03"

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BS - SUNY Geneseo

THOMAS BARBER (1997) - Systems Manager, Technology Services
AS - SUNY College of Technology at Alfred
BS - SUNY College of Technology at Utica/Rome

ANDREW J. BAYUS (1986) - Director of College Housing
BS, MA Ed - Edinboro University

BETTY BEDNER - (2010) - Assistant Professor, Nursing
MA - Regis University

NEIL BENEDICT (1981) - Associate Vice President for Student Life
BS - Ithaca College
MS - Alfred University
"SUNY Chancellor's Award for Excellence in Professional Service, 1999-00"

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BA - Syracuse University
MSFS - University of Alabama at Birmingham

U. MAX FRIEDRICH BESEMANN (2002) - Lecturer, Civil Engineering Technology
BA - University at Buffalo
NYS Land Surveyor License

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AAS - Pennsylvania College of Technology

SCOTT BINGHAM (2006) - University Police Officer II
AAS - Finger Lakes Community College

MELISSA BLAKE (2005) - Instructor, Business
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AAS - SUNY College of Technology at Alfred
AS, LVT, NYS - Medaille College
BS - Purdue University
MA-LS - Excelsior College

JAMES BOARDMAN (2004) - Assistant Professor and Chair, Computer and Information Technology
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MS - University of Southern Mississippi

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BS - Purchase College
MPhil, PhD - CUNY Graduate Center

KATHRYN BOCCIA (2011) - Personnel Assistant, Human Resources
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AAS - SUNY College of Technology at Alfred
BS, MT (ASCP) - SUNY Upstate Medical Center
MS - Alfred University
"SUNY Chancellor's Award for Excellence in Teaching, 1986-87"

REGINA BOYD (1990) - Staff Associate, Athletics; Women's Basketball Coach
AAS - Cayuga Community College
BSE - SUNY Cortland
MS - SUNY Brockport

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BS - Towson University
MFA - Rochester Institute of Technology

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AOS - SUNY College of Technology at Alfred

DONALD BROWN (2005) - Instructional Support Assistant, Building Trades

MILTON BROWN (1996) - Associate Professor, Mechanical & Electrical Engineering Technology
AS - SUNY College of Technology at Alfred
BS - Rochester Institute of Technology
MS - Pittsburgh State University

DENISE BROWNELL (1991) - Assistant to Dining Director, Central Dining Hall, Auxiliary Campus Enterprises and Services
AS - SUNY College of Technology at Alfred

GLENN BRUBAKER (2004) - Director of Facilities Services
AOS - SUNY College of Technology at Alfred
BPS - Empire State College
Certified OSHA Outreach Trainer

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BS - Lockhaven State University
MBA - St. Bonaventure University

JOHN D. BUCKWALTER (1982) - SUNY Distinguished Teaching Professor, Physical and Health Sciences
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MS, PhD - University of Oklahoma

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MICHAEL CABA (2002) - Senior Staff Assistant, Athletics
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KAREN CANNE (1982) - Director of Dining Services, Auxiliary Campus Enterprises and Services
BS - SUNY at Oneonta

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BA, MA - Alfred University

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ASE Master Certification, Auto

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LPN

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BA - St. Bonaventure University
MS - University of Scranton
PhD - Syracuse University

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Registered Professional Engineer - Ohio
Certified Manufacturing Engineer

DAVID CHILSON (1972) - Instructional Support Assistant, Building Trades

DEBORAH CLAIRE (1989) - Senior Programmer/Analyst, Technology Services
BA - SUNY Geneseo
"SUNY Chancellor's Award for Excellence in Professional Service, 2009-10"

GLEN CLINE (2004) - Director, Procurement and Payment Services
AS, BS - SUNY Empire State College

MICHAEL COBB (1979) - Lecturer & Chair, Social and Behavioral Sciences
AA - Northern Virginia Community College
BA - George Mason University
MA - Penn State University

BRENT COBIN (1998) - Staff Assistant, Document Center

TIMOTHY COCHRAN (1999) - Assistant Professor, Mechanical & Electrical Engineering Technology
MS - University of Wisconsin - Madison

CINDY COLEMAN (2008) - Assistant Professor, Nursing
AS - SUNY College of Technology at Alfred
BSN - SUNY Brockport
MS - SUNY Buffalo

MICHAEL A. COLOMAIO (2002) - Lecturer, Social and Behavioral Sciences
BA - SUNY Geneseo
MS - Alfred University

DENNIS E. CONRAD (2006) - Instructor, Automotive Trades
AOS - SUNY College of Technology at Alfred

ANIKO V. CONSTANTINE (1974) - SUNY Distinguished Teaching Professor, English and Humanities
BA - Hartwick College
MA, PhD - University of Illinois
"SUNY Chancellor's Award for Excellence in Teaching, 1979-80"

GORDON COOK - Instructional Support Assistant, Dean's Office, School of Applied Technology

MARK CRAGG (2006) - Instructional Support Assistant, College Farm
AAS - SUNY College of Technology at Alfred

DOUGLAS CRUIKSHANK (1998) - Instructional Support Associate, Technology Services

JANET CURLEY (2007) - Associate Professor, Nursing
AAS - Phillips-Beth Israel School of Nursing
BSN - Pace University
MA, MEd - Teachers College

ROBERT CURRY (2004) - Associate Professor & Chair, English and Humanities
BA - San Francisco State University
MA - Chico State University
PhD - University of Connecticut

MARK D'ARCY (2004) - Assistant Professor, Mathematics and Physics
BA, MS Ed - Alfred University
MS - Clemson University

JOSEPH DAMRATH (2003) - Associate Professor, Business
BA - LeMoyne College
MA - Duquesne University
JD - University of Toledo

DANIEL DAVISON (2006) - Instructional Support Associate, Automotive Trades

WILLIAM DEAN (2000) - Professor and Chair, Computer Imaging and Architectural Engineering Technology
AAS - SUNY College of Technology at Alfred
BPS, MArch - University at Buffalo
Registered Architect - New York

BRIAN J. DECKER (2009) - Instructor, Culinary Arts
AOS - SUNY College of Technology at Alfred

REBECCA DENNIS (2002) - Senior Staff Assistant, Health Services
RN - St. James Hospital School of Nursing
FNP - Community General of Syracuse

LUANN DI PAGLIA (2011) - Instructional Support Assistant, Library
BFA - Alfred Universtiy

RHONDA DIPRONIO (2011) - University Police Officer I
AAS - Erie Community College

STEVE DICKERSON (1997) - Instructor, Computerized Design and Manufacturing

EUGENE DOORLEY (2003) - Senior Staff Assistant, Athletics, Fitness Center Manager/Volleyball Coach
AS - SUNY College of Technology at Alfred
BS - SUNY Cortland
NYS Teaching Certificate - St. Bonaventure University

WENDY DRESSER-RECKTENWALD (2000) - Senior Director, Center for Community Education & Training and Human Resources
BA - SUNY Geneseo
MS - St. John Fisher College

NANCY DRISCOLL (2000) - Assistant Director, Admissions
BA, MS - Buffalo State College

ROGER A. DRUMM (1984) - Associate Professor, Building Trades
AOS - SUNY College of Technology at Alfred

JOEL DUDLEY (2006) - Programmer/Analyst, Technology Services
AAS, BTech - SUNY College of Technology at Alfred

STEPHEN DUDLEY (2011) Programmer/Analyst, Technology Services
MBA - Canisius College

LAURIE L. DUNN (2009) - Assistant Professor, Nursing
MSN - Daemen College

JESSICA DUNSTER (2008) - Assistant Athletic Trainer
MS - Alfred University

KATHLEEN C. EBERT (1993) - Professor, Mathematics and Physics
AA - SUNY College of Technology at Alfred
BA - Alfred University
MA - SUNY Buffalo
PhD - University at Buffalo

NORMAN ELLIS (2002) - Associate Professor, Building Trades
AAS - SUNY College of Agriculture and Technology at Morrisville

CATHLEEN M. ENGLE (2008) - EOP Counselor
BS - SUNY Geneseo

EVAN ENKE (1998) - Assistant Professor, Computer and Information Technology
BS, MPS - Alfred University
"SUNY Chancellor's Award for Excellence in Teaching, 2002-03"

DOROTHEA FITZSIMMONS (2002) - Assistant Professor & Coordinator Animal Science, Agriculture and Veterinary Technology
BS, DVM - Cornell University
MS - University of Wisconsin

JAMES FLEISCHMAN (2002) - Assistant Professor, Automotive Trades
AOS - SUNY College of Technology at Alfred
Ford Master Certified
ATTP Certified
ASE Auto Certified

GERALD FONG (1993) - Professor, Physical and Health Sciences
BSc - University of California at Berkeley
MS, PhD - University of Michigan
"SUNY Research & Scholarship Award, 2005"
"SUNY Chancellor's Award for Excellence in Teaching, 2005-06"

MICHAEL J. FOSTER (1982) - Staff Assistant, Facilities Services

NICHOLE FRANCE (2011) - Staff Assistant, Technology Services
AAS- SUNY College of Technology at Alfred

MICHELLE FRANCISCO (1998) - Staff Associate, Business Affairs
AAS - SUNY College of Technology at Alfred
BA - St. Bonaventure University

RHEMA FULLER (2011) - Associate Professor, Sport Management
PhD - University of Connecticut

JOHN M. GARIPPA (1994) - Associate Professor, Automotive Trades
AOS - SUNY College of Technology at Alfred
ASE Master Certification, Auto
ASE Advance Level Certification
ASE Alternative Fuels Certification

KENNETH GEER (1996) - Associate Professor, Building Trades
AOS - SUNY College of Technology at Alfred

KANDI GEIBEL (1995) - Associate Director, Admissions
AA - SUNY College of Technology at Alfred
BA, MS - Alfred University
"SUNY Chancellor's Award for Excellence in Professional Service, 2006-07"

JAMES GERBEC (1999) - Assistant Professor, Automotive Trades
AOS - SUNY College of Technology at Alfred
ASE Certification Auto Body

SANDRA S. GERLING-YELLE (1977) - Professor, Business
AAS - SUNY College of Technology at Alfred
BS - Nazareth College
MS - University at Buffalo
"SUNY Chancellor's Award for Excellence in Teaching, 2004-05"

LAURA GIGLIO (1987) - Director of Tutoring Services, The Learning Center
AAS - SUNY College of Technology at Alfred
BS, MPS-CSA - Alfred University

JASON GILDNER (2006) - Instructional Support Assistant , Instructional Technologies
AAS - SUNY College of Technology at Alfred

JANE GILLILAND (2008) - Senior Director, Student Records and Financial Services
BS - Alfred University

RAY GLEASON (2003) - Instructional Support Associate, Mechanical & Electrical Engineering Technology
AAS - SUNY College of Technology at Alfred

MARY GOLDEN (2008) - Lecturer, Computer Imaging & Architectural Engineering Technology
BA, MFA - University at Buffalo

DEBORAH J. GOODRICH (1978) - Associate Vice President for Enrollment Management
AAS - Erie Community College
BS - University at Buffalo
MS - Buffalo State College
"New York State/United University Professions Excellence Award, 1991"
"SUNY Chancellor's Award for Excellence in Professional Service, 1993-94"

JEFFREY G. GOODRICH (1982) - Senior Programmer/Analyst, Technology Services
BA - SUNY Potsdam

JAMES L. GRAHAM (1994) - Instructional Support Associate, Computerized Design and Manufacturing
AOS - SUNY College of Technology at Alfred

GARTH M. GRANTIER (1993) - Academic Adviser, The Learning Center
BS, MS - Alfred University

MICHELLE A. GREEN (1984) - SUNY Distinguished Teaching Professor, Physical and Health Sciences
AAS - SUNY College of Technology at Alfred
BS - Daemen College
MPS - Alfred University
RHIA, CMA, CPC
"SUNY Chancellor's Award for Excellence in Teaching, 1999-00"

JOSEPH GREENTHAL (2010) - Payment Services Assistant, Procurement
BBA - SUNY College of Technology at Alfred

BARBARA J. GREIL (1977) - Librarian, Hinkle Memorial Library
BA - Carnegie-Mellon University
MLS - Rutgers University
"SUNY Chancellor's Award for Excellence in Librarianship, 1998-99"

JAMES J. GRILLO (1972) - SUNY Distinguished Teaching Professor, Business
BS, MS - Alfred University
"SUNY Chancellor's Award for Excellence in Professional Service, 1979-80"

CASEY GROSS (2000) - Associate Dean for Judicial Affairs
BA - SUNY Fredonia

BENJAMIN GROVER (2011) - Lecturer, Electrical Trades
AOS - SUNY College od Technology at Alfred

SEAN M. HAGGERTY (2010) - Instructor, Automotive Trades
AOS - SUNY College of Technology at Alfred

DAVID G. HAGGSTROM (1979) - Librarian, Director of Libraries
BA - Hobart College
MLS - University at Buffalo

ROBERT HALEY (2004) - Staff Associate, Facilities Services
AAS - SUNY College of Technology at Alfred

HOLLIE M. HALL (2007) - Interim Senior Director of Health and Wellness Services
MA - Alfred University

ROBERTA G. HANSEN (1996) - Senior Staff Assistant, Document Center

ROBIN HARRINGTON (1990) - Senior Financial Aid Adviser, Student Records and Financial Services
BA - St. Bonaventure University

MATTHEW HELLER (1996) - University Police Officer II
AAS - Finger Lakes Community College
BS - Houghton College

JEFFREY B. HELLWIG (1998) - Associate Professor, Computerized Design and Manufacturing
Diploma in Machine Tool Technology - Rochester Institute of Technology

PETER HENDRICKSON (2010) - Residence Hall Director, Residential Life
BS - SUNY College of Technology at Alfred

TRICIA HERRITT (1999) - Interim Coordinator of International Student Programs
BS - Toccoa Falls College
MPS - Alliance Theological Seminary

KATHLEEN HOBSON (2011) - Residence Hall Director, Residential Life
MA - University of Akron

CHARLES HOLMES (2005) - Laptop Technician, Technology Services
AOS - SUNY College of Technology at Alfred

ANNE HOLMOK (2007) - Staff Assistant, Athletics
BA - Alfred University

STEPHANIE M. HOYER (2006) - Senior Staff Assistant, Office of Communications
AA - SUNY College of Technology at Alfred
BA - Alfred University

DAVID HUNT (1997) - Associate Professor, Mechanical & Electrical Engineering Technology
BS - SUNY College of Technology at Alfred
MS - Alfred University

WILLIAM HUVER (2003) - General Manager, Telecommunications Operations, Auxiliary Campus Enterprises and Services
AS - SUNY College of Technology at Alfred

SHAWN ISAACS - (2011) - Residence Hall Director, Residential Life
MS - University of New Haven

GERALD IVES (2007) - Assistant Professor, Automotive Trades

STEVEN JACOBI (2007) - Instructor, Automotive Trades

STEVEN R. JAKOBI (1993) - Associate Professor, Physical and Health Sciences
BS - University of Cincinnati
MA - West Chester University
PhD - West Virginia University
HTL (ASCP) - University of Pennsylvania

JAMES JERLA (1985) - Associate Professor & Chair, Electrical Trades

CAROL JOHN (1998) - Assistant to the Vice President for Academic Affairs

KENT JOHNSON (1993) - Associate Professor & Chair, Automotive Trades
ASE Master Certification, Auto
ASE Truck Certification

JEFFREY F. JOHNSTON (1991) - Assistant Professor, Computer Imaging & Architectural Engineering Technology
BArch - University of Notre Dame
Licensed Architect, New York
"SUNY Chancellor's Award for Excellence in Faculty Service, 2004-05"

YOGENDRA B. JONCHHE (1982) - Professor, Mechanical & Electrical Engineering Technology
IntSc - Amrit Science College (Nepal)
MSME - Friendship University (USSR)
MSME - Syracuse University
"SUNY Chancellor's Award for Excellence in Teaching, 1993-94"

ROBERT JONES (2010) - Instructor, Building Trades
BA - Mansfield University

JERRY JUSIANIEC (1999) - Senior Staff Assistant, Athletics; Men's Basketball Coach/Facilities and Equipment Manager
BS - Elmira College

MARK KANELLIS (2009) - Staff Assistant, Athletics
MS - SUNY Cortland

ASHLEY KEHOE (2010) - Director of Civic Engagement and Student Leadership Programs
MEd - Loyola University, Chicago

BRENT KELLEY (1998) - Assistant Professor, Culinary Arts
BSS - Buffalo State College

KAREN KELLY (2008) - Lecturer, Math & Physics
MA - Cornell University

DAVID KENDALL (2004) - Associate Professor, Mathematics and Physics
BS - Lamar University
MS - Rice University
PhD - University of Massachusetts

EDWARD KENNEY (2007) - University Police Officer I
AS - Monroe Community College

THOMAS KENNEY (1995) - Senior Staff Assistant, Athletics; Baseball Coach
BS, MS - SUNY Brockport

DEBRA KERR (2004) - Help Desk Coordinator, Technology Services
AAS - SUNY College of Technology at Alfred

NAWAZ M. KHAN (2001) - Professor, Mechanical & Electrical Engineering Technology
BSc - Punjab University (Pakistan)
BSEE - University of Engineering (Pakistan)
BS - Baluchistan University (Pakistan)
MSEE - Michigan State University

STEPHEN KIELAR (2007) - Instructor, Electrical Trades

DANA KRUSER (2003) - Assistant Professor & Internship Coordinator, Computer and Information Technology
BA, MA, PhD - George Mason University

WILLIAM A. LAUBERT (1990) - Associate Professor, English and Humanities
AA - East Central College
BS - Southwest Baptist University
MA - Central Missouri State University

DAVID LAW (1989) - Associate Professor, Computer and Information Technology
AAS - Community College of the Air Force
BS - SUNY Plattsburgh
MS - Canisius College

MATTHEW LAWRENCE (2007) - Assistant Professor,Mechanical & Electrical Engineering Technology
PhD - Penn State University

LEO LEJEUNE (1978) - Manager, Transportation and Maintenance, Auxiliary Campus Enterprises and Services
AS - SUNY College of Technology at Alfred

JAMES LINDSAY (2008) - Staff Assistant, Technology Services
BS - Rochester Institute of Technology

DAWN M. LINKE (1980) - Instructional Support Specialist, Manager, Instructional Technologies
BA - SUNY College at Fredonia

TRACY LOCKE (2006) - Associate Professor, Physical and Health Sciences
AAS - Monroe Community College
BPS - SUNY Institute of Technology at Utica/Rome
MS - New School University

RHIA CHRISTINA LOPER (1991) - Manager, Cash Operations, Auxiliary Campus Enterprises and Services
AOS - SUNY College of Technology at Alfred

GARY LOUNSBERRY (2005) - Professor, Social and Behavioral Sciences
BA - University of Rochester
MSW - University of Michigan
MPH, PhD - University of Pittsburgh

CYNTHIE LUEHMAN (1985) - Professor, Nursing
BS - Alfred University
MS - University at Buffalo
RN
"SUNY Chancellor's Award for Excellence in Teaching, 1994-95"

KERA A. MARIOTTI (2008) - Lecturer, Civil Engineering Technology
BS - SUNY College of Technology at Alfred

KATHRYN A. MARKEL (1990) - Associate Director, Admissions
AAS - SUNY College of Technology at Alfred
BS - Nazareth College
MS - SUNY College at Fredonia
"SUNY Chancellor's Award for Excellence in Professional Service, 2002-03"

JEFFREY K. MARSHALL (1998) - Associate Professor & Chair, Civil Engineering Technology
AAS - SUNY College of Technology at Alfred
BSCE - University at Buffalo
MBA - Rochester Institute of Technology
PE - New York

TRACEY MARTIN (2003) - Instructional Support Technician, Agriculture and Veterinary Technology
AAS, LVT - NYS - SUNY Delhi
BS - SUNY Empire State College

STEVEN J. MARTINELLI (1991) - Professor, Computerized Design & Manufacturing
AOS - SUNY College of Technology at Alfred
BS - SUNY Empire State College
"SUNY Chancellor's Award for Excellence in Teaching, 2005-06"

MARYLOU MASSARA (1993) - Nurse I (part time), Health Services
AAS - SUNY College of Technology at Alfred
RN

ERICA MATTESON (2009) - Instructional Support Assistant, Physical & Health Sciences
BA - SUNY Utica/Rome

DEBRA A. MAYES (2000) - Computer Specialist, Technology Services
AAS - Northern Virginia Community College
Comptia A+ Certified Technician

CALISTA A. MCBRIDE (2002) - Associate Professor, English and Humanities
BA, MA - Kansas State University
"SUNY Chancellor's Award for Excellence in Teaching, 2006-07"

PETER MCCLAIN (2005) - Administrative Coordinator, Business Affairs
BA - Alfred University

LISA MCCOOL (2011) - Assistant Professor, Business
PhD - Oakland City University

LAURA MCDERMOTT (2010) - Assistant Professor, Nursing
BS, MS, PhD - SUNY Binghamton

SEAN MCDONOUGH (1993) - General Manager, Campus Stores, Auxiliary Campus Enterprises and Services
AS - SUNY College of Technology at Alfred
BS - University at Buffalo

MARTHA MCGEE (2007) - Bursar, Student Records and Financial Services
AAS - SUNY College of Technology at Alfred
BS - Alfred University

LUKE MCINTOSH (2011) - Instructor, Automotive Trades
AOS - SUNY College of Technology at Alfred

CLIFFORD MCPEAK (2008) - Associate Professor, Business
BS, MEd - Miami University
PhD - Ohio State University

GEORGE J. MERRY (2009) - Instructor, Computerized Design and Manufacturing

MATTHEW R. METZGAR (2008) - Assistant Professor, Business
PhD - University of Tennessee

JASON MILLER (2011) - Instructor, Building Trades
AOS - SUNY College of Technology at Alfred

RICHARD A. MITCHELL (1985) - Professor, English and Humanities
AA - Broome Community College
BA, MA - SUNY Oswego
PhD - University of Nevada, Reno

GARY E. MOORE (1978) - Staff Associate, Athletics; Track/Cross Country Coach, Coordinator of Intramurals
AAS - SUNY College of Technology at Alfred
BS - SUNY at Brockport
MS - University of Southern Mississippi
"SUNY Chancellor's Award for Excellence in Professional Service, 2008-09"

TERRENCE MORGAN (1980) - Professor, English and Humanities; Honors Program Coordinator
BA - St. Bonaventure University
MA - Gannon University
MPS - Alfred University

YVONNE MORRIS (2011) - Assistant Professor, Nursing
MS - Roberts Wesleyan College

ELAINE MORSMAN (2002) - Director of Career Development
BA, MA - St. Bonaventure University

THOMAS G. MURPHY (1998) - Instructor, Building Trades
Master Trainer, National Center for Construction Educational Research
OSHA Outreach Safety Instructor
Carpentry Instructor, National Center for Construction Education and Research

MICHAEL T. MURRAY (1990) - Manager, Friendly's & Taco Bell, Auxiliary Campus Enterprises and Services
AS - SUNY College of Technology at Alfred

JONATHAN MYERS (2004) - Network Technician, Technology Services
AS - SUNY College of Technology at Alfred

CHARLES V. NEAL (1977) - Associate Vice President for Academic Affairs
AAS - SUNY College of Technology at Alfred
BS - University of Buffalo
MBA - St. Bonaventure University
“SUNY Chancellor’s Award for Excellence in Teaching, 2001-02”

ANDREW NELSON (2000) - Instructional Support Assistant, Instructional Technologies
AS - Massachusetts Communications College

LAWRENCE NEUBERGER (2002) - Associate Professor, Computer Imaging & Architectural Engineering Technology
BFA - Kutztown University
MFA - Rochester Institute of Technology

RONALD S. NICHOLS (1981) - Professor, Civil Engineering Technology
BSCE, MSCE - University of New Hampshire
PE - Kentucky

BRON NORESTHEPORN (2000) - Manager, Special Events Operation, Auxiliary Campus Enterprises and Services
BS - Alfred University

DANIEL B. NOYES (1987) - Associate Professor, Electrical Trades
AAS - Jamestown Community College
AS - Community College of Air Force
Certified National VUE Test Administrator; International Certified Electronic Technician
“SUNY Chancellor’s Award for Excellence in Teaching, 1998-99”

CALVIN H. O’DELL (1996) - Instructional Support Assistant, Outside Project Supervisor, Electrical Trades
AOS, AOS - SUNY College of Technology at Alfred

KIMBERLY OGORZALEK (2003) - Computer Specialist, Technology Services
AAS - SUNY College of Technology at Alfred
BS - Rochester Institute of Technology

REX OLSON (2001) - Director of Counseling Services
BA - University of California
MA, M. Phil, PhD - Syracuse University
MA, PhD - Duquesne University

EARL PACKARD (2003) - Assistant Professor & Chair, Mathematics and Physics
BS - Mansfield State College
BSE - Mansfield University
PhD - Tulane University

JAIME L. PALMATIER (2007) - Staff Assistant, Health Services
AAS - SUNY College of Technology at Alfred

TERRY PALMITER (1999) - Assistant Professor, Computer Imaging & Architectural Engineering Technology
BArch - Virginia Polytechnic University
MArch - University of Colorado

LINDA PANTER (1993) - Professor, Nursing
AAS - SUNY College of Technology at Alfred
BS - SUNY Brockport
MS - FNP - Binghamton University
RN

JEFFREY G. PATRONEK (2008) - Instructor, Building Trades

CYNTHIA PAXHIA (2010) - Assistant Professor, Nursing
MS - Roberts Wesleyan College

MARK PAYNE (2007) - Assistant Professor, Building Trades

SPENCER PEAVEY (2006) - Director of Student Activities and Orientation
BA - University of Massachusetts at Lowell
MSEd - St. Bonaventure University

CONSTANCE PENNISI (2000) - Instructor, Computer Imaging & Architectural Engineering Technology
BFA - NYS College of Ceramics at Alfred University
MSEd - Alfred University
"SUNY Chancellor's Award for Excellence in Scholarship and Creative Activities, 2006-07"

JONATHAN PERKINS (2011) - Lecturer, Electrical Trades
BA - Buffalo State

JOSEPH PETRICK (2000) - Librarian, Hinkle Memorial Library
BA - Hobart College
MLS - Clarion University
"SUNY Chancellor's Award for Excellence in Librarianship, 2006-07"

DOUGLAS J. PIERSON (2009) - Assistant Professor, Agriculture and Veterinary Technology
DVM - University of Pennsylvania

TIMOTHY J. PIOTROWSKI (2008) - Assistant Professor, Civil Engineering Technology
MS - SUNY at Buffalo

REGINA POLLARD (1997) - Professor, Social and Behavioral Sciences
BS - Juniata College
MS - Drake University
"SUNY Chancellor's Award for Excellence in Teaching, 2000-01"

LISA M. PORTER (1989) - Controller, Business Affairs
BA - St. Bonaventure University

PAUL POSENER (2007) - Director, Residential Life
BA - SUNY Fredonia
MS - University at Buffalo

NICHOLE PRESTON (2006) - Instructional Support Assistant, Physical and Health Sciences
AAS - SUNY College of Technology at Alfred

MICHAEL J. PUTNAM (1998) - Professor, Physical and Health Sciences
AAS - SUNY College of Technology at Alfred
BS, MS - University at Buffalo
"SUNY Chancellor's Award for Excellence in Teaching, 2003-04"

STEVEN J. QUAGLIATO (1993) - Associate Professor, Mathematics and Physics
BS - University of Massachusetts
MS - University of Rhode Island

JULIO QUIJADA-REINA (2003) - Lead Programmer/Analyst, Technology Services
AAS - Instituto Technologico Centroamericano
AAS, BTech - SUNY College of Technology at Alfred

BRIAN QUINN (2011) - Assistant Professor, English & Humanities
PhD - St. Johns University

CARL H. RAHR Jr. (1998) - Assistant Director, Senior Programmer/Analyst, Technology Services
AAS - SUNY College of Technology at Alfred
BA - SUNY Geneseo
"SUNY Chancellor's Award for Excellence in Professional Service, 2004-05"

ALLEN RAISH (2004) - Lecturer, Mathematics and Physics
BA - Alfred University
MAT - Binghamton University

ELIZABETH RATERMAN (2011) - Director, Multicultural Affairs
MS - Ohio State University

TIMOTHY L. RAY (2009) - Instructional Support Assistant, Athletics

TIMOTHY J. REAGAN (2007) - Staff Assistant, Technology Services
AAS - SUNY College of Technology at Alfred

ROBERT E. REES (1986) - SUNY Distinguished Service Professor, Mechanical & Electrical Engineering Technology
AS - Community College of Allegheny County
BSEE, MSEE - University of Pittsburgh
PE - Pennsylvania, Vermont
"SUNY Chancellor's Award for Excellence in Teaching, 1991-92"

STEVEN A. REYNOLDS (2000) - Associate Professor, Business
AS - Corning CC
BS - SUNY Fredonia
MS - Elmira College
MBA - Syracuse University

RON RHOADES (2011) - Assistant Professor, Business
PhD - University of Florida College Law

STEPHEN B. RICHARD (2004) - Associate Professor, Building Trades
BS - Cheyney University

RICK R. RICHARDS (1994) - Distance Learning Technician, Instructional Technologies; Technical Assistant, Student Senate

GEORGE RICHARDSON (1980) - Professor & Chair, Building Trades

PATRICK ROBSON (1999) - Instructional Support Assistant, Document Center

ERICA L. RODRIGUEZ (2007) - Residence Hall Director, Residential Life
BS - Mercy College

MICHAEL E. RONAN (1985) - Professor, Automotive Trades
BA - SUNY College at Fredonia
ASE Auto Certification
ATRA Testing Proctor
"SUNY Chancellor's Award for Excellence in Teaching, 1995-96"
"SUNY Chancellor's Award for Excellence in Faculty Service, 2003-04"

SAMANTHA R. ROOSA (2009) - Coordinator of Internal and External Education and Training, Human Resources
BA - SUNY Empire State College

JEANINE S. ROSE (2008) - Counselor, Counseling Services
MSE - St. Bonaventure University

MELINDA ROUNDS (2003) - University Police Officer I
AAS - Jamestown Community College

MATTHEW RYAN (2002) - Director of Student Affairs, Wellsville
BA - SUNY Cortland

MELANIE RYAN (2002) - Coordinator of Student Disability Services, The Learning Center
BS, MS - SUNY Cortland

GREG SAMMONS (1996) - University Police Chief
AAS - Finger Lakes Community College
BS - Houghton College
MJA - Norwich University

CYNTHIA S. SANTORA (1993) - Director, Public Relations
BA, MAT - Niagara University
"SUNY Chancellor's Award for Excellence in Professional Service, 2007-08"

JOHN M. SANTORA (1979) - Associate Professor & Chair, Culinary Arts
AOS - SUNY College of Technology at Alfred
"SUNY Chancellor's Award for Excellence in Scholarship and Creative Activities, 2004-05"

STEPHEN SCHNORR (2010) - Executive Director, Auxiliary Campus Enterprises and Services

PHILIP SCHROEDER (2010) - Associate Professor & Chair, Agriculture & Veterinary Technology
PhD - University of Georgia

WILLIAM H. SCHULTZE (1997) - Instructional Support Associate, Instructional Technologies
BS - Alfred University

KATHLEEN SELLERS (2011) - Professor & Chair, Nursing
PhD - Adelphi University

DAVID SENGSTOCK (1980) - Associate Director, Auxiliary Campus Enterprises and Services
BS - Niagara University

MARK SHAW (2004) - Assistant Professor, Computerized Design and Manufacturing
AWS-certified Welding Inspector
AWS-certified Welding Educator

NANCY B. SHEARER (1977) - Director of Institutional Research
BS - Elmira College
MS - Alfred University
"SUNY Chancellor's Award for Excellence in Professional Service, 1995-96"

MAUREEN SIBBLE (2002) - Staff Assistant, Career Development
BS - SUNY Brockport
MSEd - Alfred University

REX SIMPSON (1984) - Professor, Computer Imaging & Architectural Engineering Technology
BPS Arch, MArch - University at Buffalo
Registered Architect - New York
"SUNY Chancellor's Award for Excellence in Faculty Service, 2006-07"

JASON R. SMEENK (2006) - Senior Staff Assistant, Athletics, Head Athletic Trainer
BS - Roanoke College
MS - Salisbury University
ATC

ANDREW J. SMILINICH (2008) - Director, Capital Projects, Facilities Services
BTech - SUNY College of Technology at Alfred

MICHAEL SMITH (2009) - Staff Assistant, Technology Services
BA - SUNY College of Technology at Alfred

PATRICK SMITH (2011) - Residence Hall Director, Residential Life
BA - SUNY College of Technology at Alfred

RACHEL SMITH (2011) - Instructional Support Assistant, College Farm
AAS - SUNY College of Technology at Alfred

DAVID SNYDER (2006) - Assistant Professor, Computer Imaging & Architectural Engineering Technology
BA - Trinity College
MArch - University of Pennsylvania

CHRISTOPHER M. STABA (1997) - Associate Professor, Automotive Trades
AOS - SUNY College of Technology at Alfred
VTE - Buffalo State College

FRANCINE D. STABA (1994) - Associate Professor & Chair, Business
BS - Bloomsburg University
MBA - Alfred University

MARIA VANESSA STACHOWSKI (1990) - Nurse II, Health Services
AAS - SUNY College of Technology at Alfred
RNC - Certification in College Health Nursing

JANICE L. STAFFORD (2002) - Lecturer, English and Humanities
MA - Ohio State University

FLORENCE STEPHENS (2005) - Admissions Assistant
BA - SUNY Geneseo

JEFFREY L. STEPHENS (1991) - Manager, Vending, Auxiliary Campus Enterprises and Services
BS - Alfred University

JEFFREY S. STEVENS (2002) - Associate Professor, Electrical Trades
AOS, AOS - SUNY College of Technology at Alfred

CAROL W. STEWART (1991) - Assistant Professor, Mathematics and Physics
BS - Clarkson College of Technology
MS - Canisius College

MARY E. STOKE (2009) - Assistant Professor, English and Humanities
MA - Wheaton College

THOMAS E. STOLBERG (1988) - Associate Professor, Business
AAS - SUNY College of Technology at Alfred
BBA, MBA - St. Bonaventure University, CPA

CRAIG STURDEVANT (2000) - Telecommunications Manager, Auxiliary Campus Enterprises and Services
AOS - SUNY College of Technology at Alfred

JAYNE E. SWANSON (2009) - Associate Vice President, Academic Affairs
PhD - University at Buffalo

THOMAS C. TABER (1993) - Instructor, Automotive Trades
AOS - SUNY College of Technology at Alfred
VTE - SUNY Oswego
ASE Auto Certification

TAKAO TAKEUCHI (1983) - Professor, Mathematics and Physics
BS - Nagoya University (Japan)
MS - Kanazawa University
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AAS - SUNY College of Technology at Alfred
BS - Daemen College
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"SUNY Chancellor's Award for Excellence in Teaching, 1996-97"

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"SUNY Chancellor's Award for Excellence in Teaching, 2008-09"

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AAS - Community College of the Air Force
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AS - Finger Lakes Community College
BS - Empire State College
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AOS - SUNY College of Technology at Alfred

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AA - SUNY College of Technology at Alfred
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BS - SUNY College of Technology at Alfred

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