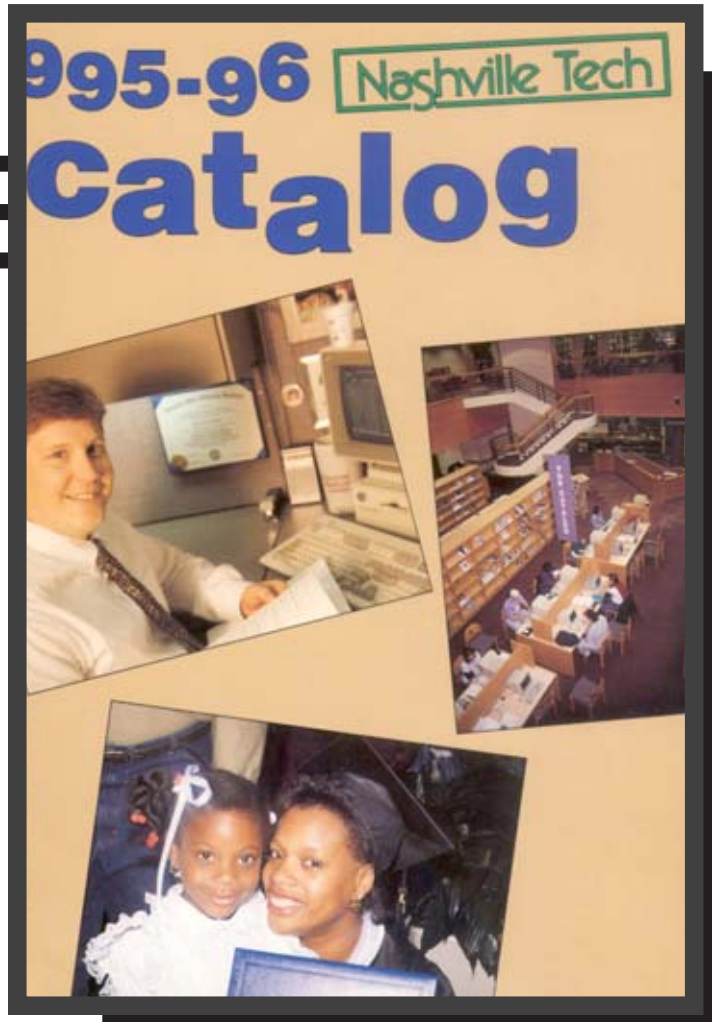

Nashville State Technical Institute

1995-1996 Catalog

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1995-96 Catalog

Nashville State Technical Institute

Proudly Serving the Community Since 1970

120 White Bridge Road
Nashville, Tennessee 37209-4515
(615) 353-3333

Volume Twenty-three

A MESSAGE FROM THE PRESIDENT

Nashville State Technical Institute publishes this catalog to introduce you to the numerous programs and services available at the college. The catalog should be studied by prospective students to determine if their educational goals can be satisfied at Nashville Tech.

For some students, the goal is to earn an Associate's degree and begin a career in high technology. For others, the goal is to earn college credits at Nashville Tech that can be transferred to a four-year university and applied toward a Bachelor's degree. And for many, the goal is to learn additional skills that can be applied to current jobs.

Whatever your own educational goals, we are glad you chose to consider Nashville Tech. It is a good choice. Here, you will find teachers with real-world experience who are willing to take the time to help you in and out of class. You will find well-equipped labs with sufficient work stations to give you hands-on experience. You will find counselors to help you plan your course of study and a Placement Office that will assist you in finding a job. The list goes on: tutors for subjects in which you need extra help; a fully-computerized Library that is second to none in technical research; a Financial Aid office to assist in financing your education: a Student Government Association to represent your special concerns.

We want to work with you to make the time you spend at Nashville Tech as enriching as possible. In reviewing this catalog, you have taken the first step in becoming familiar with the institution. The next step is to meet with an admissions counselor for more information and to give us the opportunity to meet you.

George H. Van Allen
President

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Policy Statement of Nondiscrimination

Nashville Tech does not discriminate in any form against students, employees, or applicants on the basis of race, sex, national origin, religion, age or disability. This discriminatory policy and practice extends to cover ail educational programs and activities conducted by Nashville State Technical Institute. Procedures for filing grievances can be obtained from the college's Affirmative Action Officer.

ACADEMIC PROGRAMS

Major	Concentrations Within Major	Length of Program	
		Two-Year	One-Year
Architectural Engineering Technology		A.A.S	
Automation-Robotics Technology		A.A.S.	
Automotive Service Technology		A.A.S.	
Business Management	Financial Services Management Small Business Administration	A.A.S.	
Civil & Construction Engineering Technology		A.A.S.	
Communications Technology		A.A.S.	
Computer Accounting Technology	Accounting Information Systems Microcomputer Applications	A.A.S.	
Computer Information Systems	Mainframe Microcomputer	A.A.S.	
Computer Technology		A.A.S.	
Electrical Engineering Technology		A.A.S.	
Electrical Maintenance			Technical Certificate
Electronic Engineering Technology		A.A.S.	
General Technology	Business Technical	A.A.S.	
Industrial Engineering Technology		A.A.S.	
Mechanical Engineering Technology		A.A.S.	
Occupational Therapy Assistant Technology		A.A.S.	
Office Administration	Administrative Legal	A.A.S	
Photography			Technical Certificate
Police Science Technology	Police Administration Corrections Management	A.A.S	
Surgical Technology			Technical Certificate
Visual Communications	Graphic Design Photography	A.A.S.	

ACADEMIC CALENDAR 1995-96

Fall 1995

Registration Day	August 21
Classes Begin	August 23
Last Day to Late Register	August 28
Holiday - Labor Day	September 4
Last Day to Change Incomplete Grade Received Previous Term	September 20
Last Day to Drop or Withdraw	November 2
Continuous Registration for Spring 1996	
by Appointment through the Student Development Office	November 13-December 15
Holiday - Thanksgiving	November 22-25
Weekend Classes End	December 9
Regular Classes End	December 12
Final Exams for Regular Classes	December 13-15
Final Exams for Weekend Classes	December 16
Holiday - Christmas and New Year	December 25-January 1

Spring 1996

Registration Day	January 8
Classes Begin	January 10
Last Day to Register	January 12
Holiday - Martin Luther King Day	January 15
Last Day to Change Incomplete Grade Received Previous Term	February 7
Spring Break	March 11-16
Last Day to Drop or Withdraw	March 27
Holiday - Good Friday	April 5
Continuous Registration for Summer 1996	
by Appointment through the Student Development Office	April 15-May 7
Continuous Registration for Fall 1996	
by Appointment through the Student Development Office	April 15-August 5
Regular Classes End	May 2
Weekend Classes End	May 4
Final Exams for Regular Classes	May 3, 6-7
Final Exams for Weekend Classes	May 4

Summer 1996 (Regular Session)

Registration Day	June 6
Classes Begin	June 10
Last Day to Late Register	June 11
Holiday - Independence Day	July 4
Last Day to Change Incomplete Grade Received Previous Term	July 8
Last Day to Drop or Withdraw	July 17
Classes End	August 5
Final Exams	August 6-7

Summer 1996 (1st Four-Week Session)

Registration Day	June 6
Classes Begin	June 10
Last Day to Late Register	June 11
Last Day to Drop or Withdraw	June 26
Holiday - Independence Day	July 4
Classes End	July 8
Final Exams	July 9

Summer 1996 (2nd Four-Week Session)

Registration Day	June 6-July 9
Last Day to Register	July 10
Classes Begin	July 10
Last Day to Drop or Withdraw	July 26
Classes End	August 6
Final Exams	August 7

Fall 1996

Registration Day	August 19
Classes Begin	August 21
Last Day to Late Register	August 26
Holiday - Labor Day	September 2
Last Day to Change Incomplete Grade Received Previous Term	September 18
Last Day to Drop or Withdraw	October 30
Continuous Registration for Spring 1997 by Appointment through the Student Development Office.....	November 4-December 11
Holiday - Thanksgiving	November 28-30
Regular Classes End	December 6
Weekend Classes End	December 7
Final Exams for Weekend Classes	December 7
Final Exams for Regular Classes	December 9-11
Holiday - Christmas and New Year	December 25-January 1

Intent to Graduate Forms are Due the Fall Term Prior to Graduation.

This calendar is subject to change at any time prior to or during an academic term due to emergencies or causes beyond the reasonable control of the institution, including severe weather, loss of utility services, or orders by federal or state agencies.

STATEMENT OF MISSION

Nashville State Technical Institute offers associate's degree and certificate programs, along with an extensive series of courses for business and industry. The college provides technical career education programs that prepare first-time and returning adult students for employment; courses, workshops, and seminars for lifelong learning; classes and support services for underprepared students. The college also maintains articulation agreements with public and private universities for students who may decide to pursue a bachelor's degree.

The public two-year college serves a diverse geographic area comprised of metropolitan Davidson County as well as Cheatham, Dickson, Houston, Humphreys, Montgomery, and Stewart counties. Nashville Tech is a member of the State University and Community College System of Tennessee, which is governed by the Tennessee Board of Regents. It serves as the lead institution for the Tennessee Technology Centers in Nashville and Dickson.

Nashville Tech serves a student body that is equally diverse in age, race, and educational goals by providing a high-quality, low-cost education. It offers a convenient schedule of day and evening classes, both on and off campus. Its instructional programs emphasize the skills and applications needed for job performance as well as a strong general education component. The college offers the associate's degree in a broad range of business, computer, and engineering technology fields. As a technical college, it is committed especially to providing the most comprehensive and state-of-the-art technology programs.

Nashville Tech takes pride in its positive and supportive collegiate environment, providing student services which include tutoring, testing, counseling, academic advising, financial assistance, assistance for persons with disabilities, cooperative education, employment placement, automated library, print and electronic information services, campus security, and student activities and organizations.

ACCREDITATION AND MEMBERSHIPS

Nashville Tech is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools.

The following engineering technology programs have been accredited by the Technology Accreditation Commission of the Accreditation Board for Engineering and Technology:

- Architectural Engineering Technology
- Automation-Robotics Technology
- Civil and Construction Engineering Technology
- Computer Technology
- Electrical Engineering Technology
- Electronic Engineering Technology
- Industrial Engineering Technology
- Mechanical Engineering Technology

The Occupational Therapy Assistant Technology program is accredited by the Committee on Allied Health Education and Accreditation.

Nashville Tech holds membership in additional professional organizations, including:

- American Association of Collegiate Registrars and Admissions Officers
- American Association of Community Colleges
- American Society for Engineering Education
- American Technical Education Association
- Association of College and University Auditors
- Association of Collegiate Business Schools and Programs
- Nashville Area Chamber of Commerce
- National Association of College and University Business Officers
- National Association of Student Financial Aid Administrators
- National Commission for Cooperative Education
- Servicemembers Opportunities Colleges
- Tennessee College Association
- The College Board

HISTORY OF NASHVILLE TECH

In 1963, the Tennessee General Assembly passed House Bill No. 633 authorizing the statewide system of regional technical institutes and area vocational-technical schools.

Nashville Tech opened in 1970 with an enrollment of 398 students. By the Fall of 1994, that number had grown to 6,539. Nashville Tech's initial offering of five associate's degree programs has grown to 18 degree programs and three certificate programs. In addition, Nashville Tech offers continuing education courses ranging from technical skills to management training and programs providing training in such areas as computer-aided drafting and office technology.

Nashville Tech is authorized to offer the Associate of Applied Science degree, as well as technical and academic certificates. Since 1984, Nashville Tech has been governed by the Tennessee Board of Regents of the State University and Community College System.

Nashville Tech shares a 109 acre campus with the Tennessee Technology Center at Nashville. The Nashville Tech facilities include 239,000 square feet of space for classrooms, labs, offices, student services, and a library.

ADMISSION TO THE COLLEGE

Nashville Tech provides opportunities for collegiate education to all qualified applicants without regard to their race, color, sex, religion, national origin, age, or disability. Information concerning admission is available from:

Admissions Office
Nashville Tech
120 White Bridge Road
Nashville, TN 37209
Phone: (615) 353-3215

All applications must be accompanied by a $5 nonrefundable application fee. This fee is payable one time only, regardless of the program of study the student intends to follow. The applicant should have the admissions application and other required forms on file early enough to allow ample time for processing and for information to be forwarded to the applicant concerning registration. All admission credentials become the property of the college and cannot be forwarded or returned. The Vice President of Academic Affairs may, upon appeal, waive or modify conditions of admission for individual applicants.

Male students who are required to register for the Selective Service (those between the ages of 18 and 26 years of age) must be registered with the Selective Service System before enrolling for a class at Nashville Tech. Men who have previously served in the military must also meet this requirement. If the student has not registered for the Selective Service System, the student must complete a Selective Service Registration Form in the Admissions Office.

Upon receipt of applications, the Admissions Office will notify applicants concerning the American College Testing (ACT) Program, placement assessment, and registration dates prior to their first semester of attendance. High school graduates under 21 years of age and classified as degree-seeking or academic certificate students are required to take the ACT. Information about the ACT may be obtained from the high school counselor, the Admissions Office at Nashville Tech, or by writing to American College Testing, Inc., P.O. Box 168, Iowa City, Iowa 52243. **Nashville Tech's ACT code is 3983.** This number should be used when requesting that test scores be sent to Nashville Tech. Degree-seeking applicants under 21 years of age who have not taken the ACT will be required to take the ACT through the college's Testing Center. AAPP assessment for course placement may be required for applicants under 21 years of age based upon ACT test results. Degree-seeking applicants 21 years of age or older will be required to take the AAPP for course placement.

Students who consider themselves inadequately prepared to pursue a college-level course may request assessment to determine whether they need remedial/developmental (R/D) English, mathematics, or reading courses. They must complete the appropriate AAPP pretest and, if scores indicate the need, can be placed in an R/D course. After completing the final developmental studies course, they must take the AAPP post-test.

Placement decisions in R/D courses are the responsibility of the Academic Skills program director. Study skills placement is required for either (1) students who are placed in at least two subject areas at the remedial level or (2) students who are placed in three subject areas of either remedial or developmental levels. Beyond this mandatory placement, students with two deficiencies, either both developmental or one developmental and the other remedial, have the option to elect placement in Study Skills.

The Occupational Therapy Assistant Technology, Surgical Technology, and Automotive Service Technology programs are subject to special admission requirements. Applicants to these programs should become familiar with these requirements.

RESIDENCY REQUIREMENTS

The following are rules for determination of "in-state" or "out-of-state" status for fees and tuition purposes as defined by the Tennessee Board of Regents:

1. Every person having his or her domicile in Tennessee shall be classified "in-state" for fees, tuition and admission purposes.
2. Every person not having his or her domicile in Tennessee shall be classified "out-of-state" for said purposes.
3. The domicile of an "unemancipated person" is that of his or her parent. "Emancipated person" shall mean a person who has attained the age of eighteen years and whose parents have entirely surrendered the right to the care, custody, and earnings of such person and who no longer are under any legal obligation to support or maintain such deemed "emancipated person." Unemancipated students of divorced parents shall be classified "in-state" when one parent, regardless of custodial status, is domiciled in Tennessee.
4. The spouse of a student classified "in-state" shall also be classified "in-state."
5. Persons who live in another state but are employed full-time in the state of Tennessee may be classified full-time employee/part-time student and pay in-state fees if they are enrolled for less than 12 credit hours. The full-time employment must be documented each semester.
6. Unless the contrary appears from clear and convincing evidence, it shall be presumed that an emancipated person does not acquire domicile in this state while enrolled as a full-time student at any **public or private** higher educational institution in this state, as such status is defined by such institution.

Persons who assert that they have established domicile in Tennessee bear the burden of proving that they have done so. International students and H and J visa students are classified out-of-state for fee payment purposes.

VETERANS' BENEFITS

Veterans and eligible dependents of veterans who wish to apply for educational benefits from the Veterans Administration (VA) should contact the Records Office to complete the necessary forms to receive Veterans Administration (VA) benefits.

CERTIFICATION. Certification will not be sent to the VA until the veteran has a complete file in the Admissions Office. This includes transcripts from all previous colleges attended or high school transcript if no postsecondary schools were attended.

VETERANS ADMINISTRATION POLICY. VA regulations do not allow a veteran to:

1. Claim courses that have been previously passed with a D or above.
2. Claim courses that have been transferred in from other schools.
3. Claim courses that are not in the veteran's specific curriculum as stated in the school catalog.

Nashville Tech has been designated as an institutional member of Servicemembers Opportunities Colleges (SOC), a group of colleges and universities providing postsecondary education to members of the military. As an SOC member, Nashville Tech recognizes the unique nature of the military lifestyle and is committed to easing the transfer of relevant course credits, providing flexible academic residency requirements, and crediting learning from appropriate military training and experiences. SOC has been developed jointly by educational representatives of each of the Armed Services, the Office of the Secretary of Defense and a consortium of thirteen leading national higher education associations. It is sponsored by the American Association of State Colleges and Universities and the American Association of Community Colleges.

ADMISSIONS REQUIREMENTS FOR DEGREE-SEEKING STUDENTS

TECHNICAL CERTIFICATE STUDENTS

Students admitted to technical certificate programs must be high school graduates or its equivalent (GED). Documents showing proof of graduation or GED must be submitted to the Admissions Office. Technical certificate programs emphasize skills needed by business and industry

located in Nashville and surrounding counties. Technical Certificate programs are offered in Electrical Maintenance, Photography, and Surgical Technology (special admission requirements).

FIRST-TIME STUDENTS: DEGREE-SEEKING

An applicant with no previous college enrollment who seeks admission to Nashville Tech for an associate's degree program must have earned a high school diploma or its equivalent (GED). Applicants must do the following:

1. Submit a completed application for admission.
2. Submit a $5 nonrefundable application fee with the application.
3. Submit an official transcript of credits showing graduation from an approved or accredited high school. Students who graduated from a Tennessee public high school in 1983 and after must submit an official transcript verifying:
   a. Graduation with a regular high school diploma.
   b. Passing score on the State proficiency exams.

   High school graduates from a school not accredited by the appropriate regional accrediting agency or the State Department of Education may be admitted by taking the General Educational Development (GED) Test. The GED score must be a minimum average standard score of 45 with no subscore less than 35. This GED requirement is waived for graduates from high schools not regionally accredited or state approved if they submit an official high school transcript and earn a minimum Enhanced ACT composite score of 19.
4. Report ACT (or SAT) scores. High school graduates under 21 years of age who are seeking a degree will not be admitted unless they have taken the ACT (or SAT) and reported their scores to the Admissions Office. If ACT (or SAT) scores are more than three (3) years old the test must be taken again. Applicants who have not taken the ACT may do so at Nashville Tech.
5. Complete all necessary assessment for the purpose of course placement:
   a. Students under 21 years of age and whose ACT composite score is 18 or lower must complete the AAPP reading comprehension test.
   b. Students under 21 years of age and whose ACT mathematics sub-score is 18 or lower must take the appropriate AAPP mathematics tests as determined by level of high schools preparation in mathematics.
   c. Students under 21 years of age and whose ACT English sub-score is 18 or lower must complete the AAPP writing sample.
   d. Students 21 years of age or older are required to complete the entire AAPP test. Students 21 years of age or older are not required to present ACT scores, but may do so provided the test was completed within three years prior to the first day of the first term of enrollment. Students with valid ACT scores will then be screened for AAPP assessment according to the regulations applied to students under 21 years of age. The institution may require students who have earned the GED to take the AAPP regardless of ACT (or SAT) scores.

Degree-seeking applicants who have academic deficiencies based on assessment may be limited in the number of courses they are allowed to take. These applicants must remove deficiencies through the Academic Skills Department prior to enrolling in college-level courses. Educational records, academic and career goals, and personal interviews, in addition to ACT and assessment scores, are considered when placing students in appropriate courses.

High school students who are planning to pursue a college degree can best prepare themselves for college-level courses by completing two units of algebra, one unit of geometry, and four units of English. At the high school level, successful completion of these classes may eliminate the need for remediation. It is recommended that students planning to major in a **Business Technologies**

program also complete one unit of bookkeeping or accounting at the high school level. **Engineering Technologies** majors will need a strong background in mathematics and science.

INTERNATIONAL STUDENTS

Nashville Tech is authorized under federal law to enroll non-immigrant, alien students on **F-1** student visas in the associate's degree programs. Applicants should have the following credentials on file in the Admissions Office one month prior to the beginning of the semester in which they wish to enroll:

1. A completed application for admission.
2. A $5 nonrefundable application fee submitted with the application.
3. Official copies of academic records of attendance from secondary schools, colleges, or universities accompanied by a notarized or certified English translation of these documents.
4. Official scores of the Test of English as a Foreign Language (TOEFL). A minimum score of 500 is required for admission. Course work completed at another United States institution may be used in lieu of standardized examination scores. Additional institutional placement assessment is required of ail international students. Any academic skill deficiencies must be removed through enrollment in the Academic Skills Department.
5. Satisfactory evidence of the financial capability to meet the expense involved while studying at Nashville Tech. Applicants on F-1 status must complete the form, provided by the college, showing financial capability. Completion of this form includes the student's intent to attend the college full time (12 or more credit hours per semester) and states that no employment will be required to meet expenses. International students will pay out-of-state fees.
6. A certificate from a licensed physician or other medical authority verifying freedom from tuberculosis. This certificate must be submitted to the Admissions Office 30 days from the first day of classes in order to continue enrollment. If the student either has tuberculosis or has potential tuberculosis requiring medical treatment, continued enrollment depends upon the decision of a licensed physician that enrollment is not a risk to others, and upon the student's compliance with any prescribed medical treatment.

READMISSION OF FORMER STUDENTS

A student who has previously attended Nashville Tech, but has not been enrolled for two semesters (excluding summer), and seeks admission to an associate's degree program must apply for readmission and meet the following requirements:

1. Submit a completed application for admission.
2. Submit an official transcript from each college or university attended since leaving Nashville Tech.
3. Be eligible for readmission under the college's retention policies.
4. Be assessed if they do not meet one of the following requirements: Enhanced ACT math, English scores and composite scores of 19 or above or previously earned college credit for the first-term math and English courses. Those who are identified as not meeting these requirements will be assessed and placed in appropriate course work.

STUDENTS TRANSFERRING TO NASHVILLE TECH

An applicant who has attended another college or university and is applying for admission to an associate's degree program must meet the following requirements:

1. Submit a completed application for admission.
2. Submit a $5 nonrefundable application fee with the application.
3. Submit official transcripts from all previously attended colleges, regardless of credits earned and regardless of whether transfer credit is desired. GED scores are required for

those who have earned the GED. **These transcripts must be sent directly to the Admissions Office and cannot be accepted from the applicant.** Students whose academic records do not meet the academic retention standards of Nashville Tech may be admitted conditionally based on satisfactory academic performance during their first semester of attendance.

4. Be assessed if they do not meet one of the following requirements: Scores less than three years old of Enhanced ACT math, English and composite scores of 19 or above, or previously earned college credit for first-term math and English courses. Those who are identified as not meeting these requirements will be assessed and placed in appropriate course work.
5. Submit ACT/SAT scores and AAPP scores taken at another institution.

Credit may be awarded to transfer students when the following standards are met:

1. All previous college or university records are on file in the Admissions Office.
2. The course(s) to be transferred was (were) taken at a regionally accredited institution, with a grade of C or above. Students who have completed course work at institutions not accredited by regional accrediting associations may petition that credit be accepted. Credit will be granted after approval of the appropriate academic department head.
3. Credits earned more than six years prior to enrollment at Nashville Tech are reviewed and evaluated by the appropriate department head and transfer credit/graduation analyst.
4. Courses are judged to be equivalent to those offered at Nashville Tech and are required for the student's declared major.

If a student has earned credit for a course at a prior institution with fewer than the number of hours required for the equivalent course at Nashville Tech, credit may be given for that course if the material covered is sufficiently equivalent to the Nashville Tech course. In all cases a student must have earned a minimum of 60 semester hours to meet the graduation requirements for the Associate of Applied Science degree. Grades earned at another institution are not used to compute a student's grade point average at Nashville Tech.

STUDENTS TRANSFERRING TO OTHER COLLEGES AND UNIVERSITIES

Many students enroll at Nashville Tech for the purpose of transferring to a four-year college or university. Most four -year degree programs are designed so that students complete general education requirements during the first two-years of study. Nashville Tech provides general education courses in humanities, social sciences, natural sciences and mathematics, speech and English that will transfer to four-year colleges or universities.

Nashville Tech has articulation agreements with Austin Peay State University, East Tennessee State University, Middle Tennessee State University, Tennessee State University, Tennessee Tech, Western Kentucky University, University of Memphis, University of Tennessee-Knoxville and Belmont University. Other colleges and universities also work with Nashville Tech on a course by course evaluation of credits.

Students who are interested in completing general education requirements at Nashville Tech should speak with an advisor in the Student Development Center to develop a program of study.

Degree-seeking students who are pursuing an Associate of Applied Science degree may transfer many of their major courses to a four-year college or university. After completing the Associate of Applied Science degree, these students should work with the department head of the receiving institution about transferability of the coursework.

ADMISSIONS REQUIREMENTS FOR NON-DEGREE-SEEKING STUDENTS

ACADEMICALLY TALENTED STUDENTS

Academically talented or gifted students enrolled in grades 9, 10, 11, or 12 in state-approved high schools in Tennessee may, with the recommendation and approval of the high school prin-

cipal and appropriate higher education institutional personnel, enroll in and receive regular college degree credit from a Tennessee postsecondary institution if such a student has a grade point average equivalent to 3.2 on a 4.0 maximum basis and if such placement is a part of the student's planned Individual Education Program (IEP) as established by the multidisciplinary team process.

An applicant who wishes to be admitted under this classification must complete a special form available from the Admissions Office and submit the following:

1. A completed application for admission.
2. A $5 nonrefundable application fee.
3. Official verification from the high school of a minimum cumulative grade point average of 3.2 on a 4.0 scale.
4. Recommendation and approval from the high school principal.

COLLEGE/HIGH SCHOOL CONCURRENT ENROLLMENT

An outstanding high school student who is at least 16 years old and has completed the tenth grade may register for one college course per semester provided this course is conducted at a time other than the regular high school day. It is not the intent that a Nashville Tech course substitute for any required course or elective pursuant to graduation from high school. The enrollment of such students in subsequent terms is contingent upon their performance. Credits earned may be applied to a certificate or degree when regular admissions requirements are met.

An applicant who wishes to be admitted for concurrent enrollment must meet the following requirements:

1. Submit a completed application for admission.
2. Submit a $5 nonrefundable application fee with the application.
3. Provide written permission from the parents or the high school principal.

SPECIAL STUDENTS

A special student is one who is not enrolled in a degree or academic certificate program. Students in this classification desire to take one or more courses in order to gain employment skills, professional growth, or personal enrichment. In order to apply, special students should:

1. Submit a completed application for admission.
2. Submit a $5 nonrefundable application fee with the application.
3. Students under 21 years of age must be high school graduates or have the GED equivalent. Documents showing graduation or GED must be submitted to the Admissions Office. One exception to this requirement is that students 18 years of age or older who have not earned a high school diploma, are not enrolled in high school, and are seeking admission only to pursue study in GED preparatory courses will not be high school graduates.

There is no limit on the number of hours a special student can pursue. Although special students are not required to complete normal assessment procedures, they should realize that the content of college-level courses assumes mastery of fundamental knowledge, skills, and aptitudes required for the course. Special students may not enroll in a college-level English or mathematics course, or in a course that has an English or mathematics prerequisite, until they have provided evidence of adequate preparation for these courses. This evidence may consist of college transcripts or AAPP assessment.

If a special student decides to pursue an associate's degree, the student must meet all admission requirements for the degree-seeking student. Credit hours accumulated as a special student are not applicable to the final 24 semester hours required for an associate's degree.

ACADEMIC STANDARDS AND PROCEDURES

ASSOCIATE'S DEGREE OR CERTIFICATE REQUIREMENTS

The student is responsible for seeing that all requirements for graduation are met. Students completing requirements for an associate's degree or certificate must satisfy the general and specific requirements as outlined below. No student will be issued a degree or certificate until all debts or obligations to the college have been satisfied. Completion of the curriculum in the major subject is required. Students who believe they are entitled to exception to Nashville Tech's academic regulations may appeal to the Vice President of Academic Affairs.

ASSESSMENT FOR PROGRAM EVALUATION. Students are required, as a prerequisite for graduation, to take one or more tests to assess the effectiveness of Nashville Tech's programs. All graduates must complete the ACT-COMP test, which measures achievement in general education. Graduates in Automation-Robotics Technology, Computer Technology, or Architectural, Civil and Construction, Electrical, Electronic, Industrial and Mechanical Engineering Technologies are also required to take the NICET test. Students in other degree majors are tested at least once every five years. **In order to comply fully with this requirement, students must complete all required tests and must authorize the release of their scores to the institution.** Unless otherwise required for licensure or certification, or for an individual major, no minimum score or level of achievement is required for graduation. Students will receive their scores.

CATALOG OPTION. A student must meet the requirements of (a) the current catalog or (b) the catalog effective at the time he or she entered a curriculum, provided graduation is within six years from the entrance date and the student has been continuously enrolled. Continuous enrollment is defined as completing a minimum of one term during any academic year. Credit which was earned earlier than six years prior to graduation will be subject to review and evaluation by the appropriate academic department.

CREDIT HOURS. All candidates for the associate's degree must complete a minimum of 60 semester hours to be eligible for the associate's degree. The credits received by transferring courses from another institution may be counted to meet this requirement of 60 semester hours. Credit hours earned in remedial or developmental courses cannot be used to satisfy the minimum 60 semester credit hours requirement.

GRADUATION. Nashville Tech graduation exercises are held in the spring of each year. All students who fulfill the requirements for an associate's degree or certificate are required to participate in graduation exercises unless excused by special permission of the Assistant to Academic Affairs Vice President. Each prospective candidate is required to apply for a degree or certificate by submitting the **Intent to Graduate Form** to the Records Office one semester prior to the semester of graduation. Students are responsible for notifying the Records Office of any change in their graduation date. A student who fails to apply for a degree must wait until the next degree-conferring period to be awarded the degree. Before receiving a degree or certificate, each candidate for graduation must pay a $25 graduation fee. All candidates must have approval of the faculty before they are awarded a degree or certificate.

MINIMUM RESIDENCE. For an associate's degree, the last 20 credit hours preceding graduation must be completed at Nashville Tech. For the academic certificate, the last nine credit hours preceding graduation must be completed at Nashville Tech.

GRADE POINT AVERAGE. A cumulative grade point average of at least 2.0 in the student's curriculum is required to earn the associate's degree or certificate. Remedial and developmental coursework is not calculated in the requirements for the asssociate's degree or certificate.

SECOND MAJOR. Students may wish to complete requirements of a second major in order to broaden their employment opportunities. In order to earn the second major, students must complete all requirements for the second major which have not already been fulfilled. The student's permanent record will note all majors and concentrations. The second major can be earned as part of the Nashville Tech A.A.S. degree program. In addition, students may return to school after earning a Nashville Tech degree to complete a second major. These students must submit

a form of Intention to **Complete a Second Major** to the Records Office. A certificate of completion will be awarded to students completing a major after the A.A.S. degree has been awarded.

GENERAL EDUCATION OUTCOMES

Students at Nashville Tech take general education courses for a variety of reasons: to satisfy English, humanities, social sciences, and mathematics/natural sciences requirements: for transfer to other colleges and universities: and for personal growth. General education plays a vital role in the individual's preparation for the workplace, family life and community involvement. Adequate preparation for a career encompasses more than technical expertise in the major field: Nashville Tech supports the rationale that general education focuses on application of knowledge and skills with particular emphasis on equipping adults for productive, satisfying and challenging careers.

The intent of the general education curriculum is that students:

- Develop critical thinking skills and be able to apply these skills to problem solving in all aspects of life.
- Learn to communicate effectively through reading, writing, speaking and listening.
- Understand the major concepts and principles in the areas of social sciences, mathematics and natural sciences, the humanities and computer technology.
- Develop an understanding of their own culture and be familiar with the characteristics of other ethnic and racial groups and be able to establish positive relationships with individuals who have different ethnic and racial identities.
- Analyze and be able to use changing technology and understand its impact on the individual, society and natural environment.

General education courses stress the importance of problem solving, critical thinking, interpersonal abilities, flexibility and adaptability, and workplace values and habits. Both the general education and technical courses incorporate outcomes and activities which reinforce general education knowledge and skills, stressing their applications to career settings.

GRADING STANDARDS AND RECORDS

Grades reflect student progress in course content. Nashville Tech grades on a four-point system as follows:

Credit Grade		Quality Points Per Semester Credit Hour
A	Superior	4
B	Excellent	3
C	Average	2
D	Passing, but below average	1
F	Failure	0

OTHER MARKS

W	Withdrawal	Withdrawal from course initiated by the student.
I	Incomplete	The I indicates that the student has not completed all of the course work due to such extenuating circumstances as personal illness, death in the family or other justifiable reasons. The I must be removed within four weeks from the published date of registration of the following semester or a grade of F is entered on the permanent record.
X	Continuation	The X indicates the student attempted a course, but progress was not sufficient to warrant a grade. It carries no connotation of failure. It indicates the student, upon the advice of the instructor, should register for the same course and take more time to earn

a grade. The X grade is restricted to use in remedial and developmental courses. An overall maximum of 15 semester hours of X is allowed. Veterans who are receiving benefits cannot be awarded an X grade in any course.

AU Audit

Grades of W, I, X, and N have no grade point value and are not used in computing grade point average. Final grades of A, B, C, or F only are given in remedial and developmental studies.

APPEAL OF A GRADE

A student who believes that an error has been made in the grade assigned for a given course has **six months after the end of the semester in which the grade was earned to request a review and, if justified, to process the grade change.**

Grade appeals are allowed only when the instructor has not used stated criteria, applied criteria unfairly, or made alleged errors in the calculation or recording of a grade. A student shall first confer with the instructor. If the problem cannot be resolved, the student may initiate the appeal procedure. Information is available from the Vice President of Academic Affairs' office.

PROBATION AND SUSPENSION

Academic probation and suspension will be based on the cumulative grade point average as follows:

Associate's Degree Programs:

Total **Hours** Attempted	Minimum Required GPA
0 - 14	No Minimum
14.1 - 26	1.0
26.1 - 40	1.4
40.1 - 48	1.7
48.1 - 56	1.9
56.1 - and above	2.0

Certificate Programs:

Total Hours Attempted	Minimum Required GPA
0-8	No Minimum
9-16	1.50
17-24	1.75
25 and above	2.0

A student whose cumulative grade point average falls below the minimum acceptable level in any semester will be placed on academic probation for the subsequent semester of enrollment. During the probationary semester, the student must attain the minimum acceptable cumulative grade point average, or a 2.0 average for that semester, or be placed on **suspension** for one semester. If suspension occurs at the end of a spring semester, the next permissible term for attendance will be spring semester of the following year. A student who believes that there were extenuating circumstances or an unusual hardship affecting grade point average may contact the Records Office within seven calendar days of the suspension and request, in writing, a review of the suspension by the Academic Review Committee. The committee will review the appeal.

Students who have enrolled in an Academic Skills course for a second time will be suspended for a semester if the grade on the second attempt is not an A, B, or C. Students appealing a remedial/developmental suspension must be approved by the Academic Skills Department Review Committee for readmission.

GRADE POINT AVERAGE

The following grade point system is used in determining the grade point average (GPA):

For each credit hour of A: ..... 4 points
For each credit hour of B: ..... 3 points
For each credit hour of C: ..... 2 points
For each credit hour of D: ..... 1 point
For each credit hour of F: ..... 0 points

The scholastic standing of a student is expressed in terms of grade point average, which is calculated by dividing the total number of quality points by the total number of quality hours attempted. Following is an example:

Course	Credit Hours	Value of Grade/Hour	Quality Points
ENG 1111	3	C(2)	6
ACT 1160	5	B(3)	15
MAT 1140	5	B(3)	15
SOC 1111	3	A(4)	12
	16		48

GPA = 3.0

To get the quality points listed in the last column, multiply the number of credit hours for each course (column 2) by the point value of the grade earned (column 3). Then divide the point total (48) by the credit hour total (16) for a GPA of 3.0.

The section on Repeated Courses explains the computation of the GPA for students who repeat courses. The minimum cumulative grade point average required to achieve the associate's degree or certificate is 2.0.

TRANSCRIPT OF SCHOLASTIC RECORD

Permanent records of each student's grades remain on file in the Records Office for the purpose of supplying information to legitimate sources. All transcript requests must be in writing; they will not be taken by telephone. In all cases, obligations to the college must be fulfilled before a transcript will be issued.

Normally, transcripts will be sent within twenty-four (24) hours after receiving a written request from a student. Students may obtain up to five copies of their transcripts at one time without paying a fee. Additional transcripts will cost $3 each. Students may obtain an unofficial (student) copy by request in person at the Records Office. Proper identification will be required when requesting transcripts in person.

OPTIONS FOR EARNING ADVANCED STANDING

Students at Nashville Tech may meet some course requirements for graduation through course waivers and substitutions; college transfer credit; credit by examination; the college-level examination program; advanced placement: prior work experience: high school, career, and vocational education experience: and US. Military School experience. Documentation of any of these alternate methods of meeting requirements must be filed in the Records Office prior to the beginning of the semester in which the student will graduate. If this documentation is not on file, the student's graduation date will be delayed.

Articulation Credit

Nashville Tech has articulation agreements with many area high schools and also the Tennessee Technology Centers at Nashville and Dickson. Graduates of these schools who have successfully completed certain courses or programs may be eligible to receive credit toward several degree or certificate programs at Nashville Tech.

Students interested in articulation credit should check with the principal, director, or counselor at their school. An approved Application for Articulation Credit must be submitted to Nashville Tech along with the student's transcript.

Tech Prep

Tech Prep is part of a national effort to bridge the move from high school to a two-year college. Nashville Tech and high schools in Cheatham, Davidson, Dickson, Humphreys, and Montgomery counties have agreements that help students begin preparing for rewarding technical careers while still in high school. Articulation Advanced Placement credit at Nashville Tech is a part of this program. High school students should see their principal or counselor concerning enrollment in Tech Prep.

Advanced Placement Examination

Students who complete the Advanced Placement Examination of the College Board with a grade of 3.0 or higher may receive credit for the required or elective courses in their program of study. Students take the Advanced Placement exams at their high schools. No fees are charged for awarding this credit. Inquiries concerning Advanced Placement should be forwarded to the Records Office.

College-Level Examination Program (CLEP)

CLEP is a program of credit by examination which offers the student an opportunity to earn college credit without enrolling in a college course. College level competence may have been acquired through personal reading, formal study, job experience, correspondence courses, military training, or advanced high school courses.

A student interested in participating in the College-Level Examination Program should contact the Student Development Center at Nashville Tech or write to College Board Publications, Dept. N98, Box 886, New York, NY 10101-0886. Final determination of acceptable credits will be made by the appropriate department head with approval by the academic administrator for the division and submitted in writing to the Records Office. There is a fee for CLEP examinations.

Course Waiver and Substitution

An advisor may recommend that a student request a course waiver if the student has had training or experience in the area. A course waiver is appropriate if the material has been mastered through means other than formal academic course work or in a course closely related to the course in question. A course substitution is appropriate only if material has been mastered through a similar course within the college, or if co-op credit has been earned as defined in the college catalog. There is no fee for course waivers and substitutions. Course waivers may reduce the total credit hours or number of courses required for the degree or certificate, but in no case can the number of credit hours required for the Associate of Applied Science degree be fewer than sixty-four (64).

To process a course waiver or substitution, students should ask that their advisor initiate the appropriate form. The department head and division head in the academic area in which the course is offered must approve the waiver or substitution.

Credit by Examination

Any student enrolled at Nashville Tech, upon demonstration of adequate mastery of the theoretical and practical content of a course, may take a comprehensive examination in the course and receive credit if the examination is passed satisfactorily based on departmental criteria. To qualify, a student must be currently enrolled in classes and have a declared major. Credit by examination is designed to assess the knowledge of a student enrolled in a Nashville Tech program, not to serve as transfer credit.

A student may not pursue credit by examination in a course where credit in an equivalent or more advanced course has been earned, a course previously audited, or a course successfully completed. A student must meet any prerequisite requirement. Credit for the examination is recorded on the student's transcript by "Pass, Credit by Examination" and does not affect the student's GPA. Credit by examination is limited to a maximum of twenty (20) hours.

In order to pursue credit by examination, a student must obtain and complete the necessary application form from his or her advisor. The student submits the form to the department and division heads and to the Vice President of Academic Affairs for approval and pays a fee prior to

taking the examination. If the student is not enrolled in the course, the fee is 50 percent of the full course fee. If enrolled in the course, the credit by examination fee is $15 per credit hour. If the student passes the exam, the instructor giving the exam submits the appropriate form to the Records Office for processing. If the student is currently enrolled in the course, a drop form must then be processed. If the student does not pass the exam, the department head notifies the student by mail.

Credit for Prior Work Experience

If students pursuing a degree or certificate have work experiences that have provided a background similar to that of a course in their major curriculum, they may request that the department responsible for the course evaluate the work experience for credit purposes. Students should provide the department with evidence of work performed, e.g., copies of drawings, reports, or other documents which would verify the type of work performed and/or a letter from the employer verifying the time that they were employed and did perform the work. A maximum of 10 hours of credit can be obtained for prior documented work experience. If the work experience is adequate for credit, the department head will submit the necessary form for approval through the academic division administrator.

High School and Vocational Education Experience

A student who has high school, vocational, or other credit which may relate to the program of study being pursued at Nashville Tech may be eligible for advanced placement. Nashville Tech has formal articulation agreements with many high schools which outline the possibilities for credit for work at the high school level.

The student must request review by the department head responsible for the course which relates to the previous educational experience. This educational experience will be evaluated by the department head to determine if the experience provides mastery of 80 percent of the competencies contained in the course required in the student's major, A maximum of 21 semester credit hours may be earned through these experiences. The student must provide proper documentation, such as articulation application, high school transcript and/or documentation of the type of work performed in the course. Credit may also be granted for appropriate educational experience listed in The *National Guide to Credit Recommendations for Non-Collegiate Courses* of the American Council on Education.

If the educational experience is adequate for credit, the department head will submit the necessary form for approval through the academic division administrator.

U.S. Military Schools

Nashville Tech recognizes and awards credit for any military service school which the student has satisfactorily completed and for which Nashville Tech has an equivalent course. The Registrar will evaluate the service school using the American Council on Education's Guide to the *Evaluation of Educational Experiences in the Armed Services.* Other recognized publications may be consulted, if necessary, in the evaluation of armed services schools. No more than 50 percent of the credit hours required to obtain the associate's degree or certificate may be earned through military service schools.

A student who has completed military service school(s) in an area similar to the chosen program of study at Nashville Tech must provide the Registrar with proper documentation from the school(s) attended.

REGULATIONS AND PROCEDURES

ACADEMIC ADVISING POLICY

Students must personally assume the responsibility for completing all requirements established by the college for their degree or certificate. A student's advisor may not assume these responsibilities. Any substitution, waiver or exemption from any established requirement or academic standard may be accomplished only with appropriate approval.

All entering degree-seeking students work with a faculty advisor in their major after completion of two semesters. First-year students are advised in the Student Development Center unless otherwise specified.

ABSENCE FROM CLASS

A student is expected to attend all scheduled classes and laboratories. Each faculty member will formulate an attendance policy and provide it on the course syllabus. Absences are counted from the first scheduled meeting of the class, and it is the responsibility of each student to know the attendance policy of each instructor. Absences and tardiness in a course may affect a student's final grade. The student is responsible for all material covered and assigned in the course regardless of absences.

Prior to any absence, the student should, if possible, inform the instructor. Students who fail to meet the attendance policy prior to the published last day to drop a course or withdraw from the institute will be administratively withdrawn from the course by the instructor and given a grade of 'WA.' After the last day to drop a course or withdraw, a failing grade will be assigned unless mitigating circumstances are involved.

ACADEMIC FRESH START

Any person who has not enrolled in a college or university for a period of four years or more and who, upon re-enrolling at Nashville Tech, maintains a 2.0 GPA and completes 15 semester hours of course work at Nashville Tech may petition to have grades on all prior course work disregarded in calculating the cumulative grade point average. Removal of grades means removal of all credits. Upon the completion of 15 semester hours at Nashville Tech with a 2.0 cumulative GPA, the student should send a written request to the Records Office to be submitted for approval to the Vice President of Academic Affairs. If the request is granted, the earlier course work will not count toward requirements for graduation, but will appear on the student's transcript. Academic Fresh Start may be granted only once.

The date of the fresh start will coincide with the date of re-entry, and the permanent record will note that a fresh start was made and the date of the fresh start. The records will also cany the notation that GPA and credit totals are based only on work beginning with that date.

A student who plans to transfer to another institution should contact that institution to determine the impact of Academic Fresh Start prior to implementing the program at Nashville Tech. If assistance is needed, a student should contact the Records Office.

ADDING OR DROPPING COURSES

A student desiring to add or drop a course must secure the required signatures of approval as indicated on the **Student Change Form (Add/Drop).** Specific deadlines for adding or dropping a course are listed in the front of this catalog in the calendar for each semester. **A student has not officially added or dropped a course until the student submits the required form to the Records Office for processing.** Courses dropped through the fourteenth calendar day of each semester will not be entered on the student's permanent record. Courses dropped after this period will be entered on the permanent record and assigned a grade of W. **Students may not withdraw from a remedial or developmental course except for extraordinary reasons and with special permission from the department head of the Academic Skills Department or the department head's representative.** If a student stops attending class without officially dropping the class, the student will receive a failing grade. Add/drop forms are available in the Student Services Center.

A $5 fee is charged for processing an add/drop form unless the change is initiated by the college. Changes initiated by the college include changes resulting from cancelled classes, section splits, balancing enrollment in sections of the same courses, and any computer entry error that is deemed beyond the student's control.

AUDITS

An audit student may enroll in classes on the first day to add classes if space is available. No changes are permitted after this time. No add fee or late registration fee is assessed. If stu-

dents are officially registered in a class for credit, they cannot change that class to audit. The auditor is expected to attend class but does not receive a grade or credit. Audit hours are counted in determining a student's maximum load. Academic Skills courses cannot be audited. **The auditor must submit a completed audit course form, available in the Records Office, when registering for classes.** State employees may not use a fee waiver to audit courses.

CLASSIFICATION OF STUDENTS

A student who has completed fewer than 32 credit hours shall be classified as a freshman. A sophomore must have completed 32 or more hours of course work at Nashville Tech, or a combination of course work at Nashville Tech and transfer credit.

CREDIT HOURS

The unit of credit at Nashville Tech is the student credit hour (SCH). A minimum of 750 minutes of classroom instruction (excluding registration and final exams) is required per SCH. For one SCH of credit, the average student will complete three hours of work each week throughout a semester of approximately fifteen weeks. This includes class time and out-of-class work.

Non-credit instruction is recorded in continuing education units (CEUs). One CEU requires ten contact hours of participation in an organized continuing education experience under responsible sponsorship, capable direction, and qualified instruction.

FINAL EXAMS

Final exams are customarily held in ail subjects at the end of each semester. Dates for the final exam period are listed in the front of this catalog. A schedule for the final examination period is published during each semester. Absence from an examination without permission from the instructor may result in a failing grade for the course.

HONORS

DEAN'S LIST: Degree-seeking students who achieve a GPA of at least 3.5 during any semester in which they enroll for at least six semester hours will be listed on the Dean's List.

GRADUATION HONORS: Candidates for the associate's degree or certificate who attain a final 3.5-3.74 cumulative grade point average will be graduated **with honors;** candidates who attain a final 3.75-4.0 cumulative grade point average will be graduated **with highest honors.**

REPEATING COURSES

For the purpose of raising a grade point average, a student may only repeat a course in which the previous grade earned is C or lower. Any exception to this must be approved by the Vice President of Academic Affairs before the student registers to repeat the course. When a course is attempted one or two times, only the last grade earned is used in the calculation of the student's grade point average. If a student attempts a course more than twice, the grade earned in the third and future attempts will be averaged along with the grade earned in the second attempt. The credit hours earned by repeating a course will be counted only one time in the cumulative total hours earned.

In all instances, the last grade earned is used to determine whether the student meets graduation requirements. **Students repeating a course taken prior to fall semester 1988 should submit a completed repeat course form when registering for classes.**

STUDENT COURSE LOAD

A part-time student carries an academic load of fewer than 12 hours. Twelve or more hours is considered full time for certification purposes for veterans benefits, vocational rehabilitation and other similar benefit programs.

If a student has low academic achievement when entering the college, or is placed on probation while attending the college, the student will be advised to carry a maximum of 14 semester credit hours.

Students employed full or part-time should reduce their course loads accordingly to assure satisfactory academic performance.

The maximum load for a student is 21 credit hours. When a student wishes to register for more than 21 credit hours, the approval of the advisor or academic department head is required. The overload approval form must be submitted when registering for classes.

WAIVER OF PREREQUISITES

Under special circumstances a student may be permitted to waive a prerequisite and take a course out of sequence. Approval to waive a prerequisite shall be the responsibility of the academic advisor. Waiver, as used here, simply means a change in the order in which the courses will be taken. The student must complete all courses required in the curriculum.

WITHDRAWING FROM THE COLLEGE

A student desiring to withdraw from the college (reduce the total hours carried to 0) must secure the required signatures of approval as indicated on the **Student Change Form (Add/Drop).** This form may be obtained from the Student Services Center. All students who withdraw from the college must complete an exit information interview through the Student Development Center. The last day to withdraw from the college is listed in the front of this catalog in the calendar for each semester. Normally, this is the fiftieth day that classes meet. Students enrolled in Continuing Education special interest courses that are not in sequence with the academic term will be informed of the established withdrawal date during the first class meeting. A student withdrawing after the official published withdrawal date will receive an F in the course unless there is documented evidence of extreme personal hardship or such mitigating circumstances as the following:

1. Injury or illness as verified by the student's personal physician.
2. Death in the family or other severe personal hardships as verified by the student's parents, minister, physician, etc.
3. Change in employment status (work schedule) as verified by the student's employer, if no other class is available.
4. Job relocation as verified by the student's employer.

Such exceptions to the withdrawal policy must be approved by the Assistant to Academic Affairs Vice President or the Vice President of Academic Affairs.

A student has not officially withdrawn until the student submits the required form to the Records Office. If for any reason a student stops attending class and does not officially withdraw from the college, he or she will receive a grade of F in the course.

Veterans Administration regulations allow veterans to withdraw from class or the college until the last day of unrestricted change (last day to add classes). Withdrawals beyond this date may result in overpayment with the veteran being responsible for repayment to the V.A.

STUDENT RIGHTS AND RESPONSIBILITIES

CATALOG SCOPE AND LIMITS

The course offerings and requirements of the college are continually under examination and revision. This catalog presents the offerings and requirements in effect at the time of publication but there is no guarantee they will not be changed or revoked. However, adequate and reasonable notice will be given to students affected by any changes. This catalog is not intended to state contractual terms and does not constitute a contract between the student and the college.

The college reserves the right to make changes as required in course offerings, curricula, academic policies and other rules and regulations affecting students, to be effective whenever determined by the college. These changes will govern current and formerly enrolled students. Enrollment of all students is subject to these conditions.

Current information may be obtained from the following sources:

Admission Requirements ..... Admissions Office
Course Offerings ..... Department or Division Offering Course
Degree Requirements .....Vice President of Academic Affairs
Fees and Tuition ..... Business Office

Nashville Tech provides the opportunity for students to increase their knowledge by providing programs of instruction in the various disciplines through faculty who, in the opinion of Nashville Tech, are qualified for teaching at the college level. The acquisition and retention of knowledge by any student is, however, contingent upon the student's desire and ability to learn and upon application of appropriate study techniques to any course or program. Thus, Nashville Tech must necessarily limit representation of student preparedness in any field of study to that competency demonstrated at that specific point in time at which appropriate academic measurements were taken to certify course or program completion.

COLLEGE LIABILITY

Nashville Tech is not responsible for bodily harm and/or death to participants in any voluntary organizations or activities, including activities in which risk is incurred. Nashville Tech, as an agency of the State of Tennessee, is not liable for claims resulting from injury and/or death incurred in such participation.

Members of college faculty and staff may not be held liable unless personal negligence occurs.

CONFIDENTIALITY OF STUDENT RECORDS

It is the policy of Nashville Tech to comply with the Family Educational Rights and Privacy Act (Buckley Amendment) and, in so doing, to protect the confidentiality of personally identifiable educational records of students and former students. Students have the right to inspect and review information contained in their educational records, to challenge the contents of their educational records, to have a hearing if the outcome of the challenge is unsatisfactory, and to submit explanatory statements for inclusion in their files if the decision of the hearing panel is unacceptable. Except as provided by the policy, Nashville Tech may disclose directory information to any person requesting it without the consent of the student. Directory information includes the student's name, address, telephone number, date and place of birth, major field of study, recognized activities, dates of attendance, degrees and awards received, and the most recent previous educational agency or institution attended by the student. Nashville Tech provides each student the opportunity to refuse to allow disclosure of any designated directory information. The student is given this opportunity at the beginning of each academic term.

Students are informed of their rights through the Nashville Tech Student Handbook. A complete copy of the policy is in the Student Services Center.

RIGHTS AND RESPONSIBILITIES OF NASHVILLE TECH

The college shall have such rights and responsibilities as are necessary and desirable for the college to achieve its purposes. The Tennessee Board of Regents specifically confirms the following rights to the college:

1. To establish regulations concerning the use and abuse of college property and to assess students with claims of damage of such abuse.
2. To withhold grades and transcripts of credit until all claims have been paid.
3. To dismiss, in the absence of specific regulations, any student, at any time, for cause deemed by the college to be in the best interest of the student's emotional or physical safety or the well-being of the college community.
4. To establish standards of conduct and manners on the campus within range of convention of good taste.
5. To establish traffic regulations on campus, provide for registration of all vehicles using the campus, and enforce such regulations as established.
6. To supervise the scheduling of meetings and activities of student organizations.

This list is not all-inclusive and in no way limits the rights, responsibilities, and authority the college now has. It simply describes some of the rights, responsibilities, and authority which have been vested in it.

SECURITY PROCEDURES

Nashville Tech makes available to all students information relative to the institution's security policies and procedures. Upon request, crime statistics and policies may be obtained by contacting the Chief of Security.

STUDENT APPEALS OR GRIEVANCES

There is a procedure to handle bona fide student grievances and appeals. Normally, grievances and appeals are appropriate when a student has experienced discrimination, violation of constitutional rights, or violation of policy. Information about the procedure is available in the Nashville Tech Student Handbook or from the Student Services Center.

STUDENT CODE OF CONDUCT

Nashville Tech students are citizens of the community and are expected to maintain acceptable standards of conduct. Admission to Nashville Tech carries with it privileges and responsibilities. The Tennessee Board of Regents has authorized institutions under its jurisdiction to take action as may be necessary to maintain campus conditions and preserve the integrity of the institution and its educational environment.

In an effort to provide a secure and stimulating atmosphere, Nashville Tech has developed a Student Code of Conduct which is contained in the Nashville Tech Student Handbook. The Student Code of Conduct is intended to govern student conduct on the campus of Nashville Tech.

Additionally, students are subject to all local, state, and national laws and ordinances. Should a student violate such laws or ordinances in a manner which adversely affects the institution's pursuit of its educational objectives, the college may enforce its own regulations regardless of any proceedings instituted by other authorities. Conversely, violation of any section of the Code of Conduct may subject a student to disciplinary measures by the institution whether or not such conduct is simultaneously a violation of local, state, or national laws.

Generally, through appropriate due process procedures, institutional disciplinary measures shall be imposed for conduct which adversely affects the institution's pursuit of educational objectives, which violates or exhibits a disregard for the rights of other members of the academic community, or which endangers property or persons on college or college-controlled property.

When students are unable to pursue their academic work effectively, when their behavior is disruptive to the educational process of the college or detrimental to themselves or others, they may voluntarily withdraw, be involuntarily withdrawn, or be temporarily suspended from the college. Disruptive or detrimental behavior may, for example, be due to drug and/or alcohol abuse, apparent physical disturbance, and/or psychological disturbance.

STUDENT SERVICES

CAMPUS VISITATION

The Admissions Office is responsible for conducting tours of the campus as well as providing information to prospective students. Campus visits may be scheduled by contacting the Admissions Office.

CLASS ORGANIZATIONS

Each year, freshman and sophomore classes organize through the election of class officers. Class organizations are under the sponsorship of the Student Government Association and the election of class officers occurs after the first four weeks of the fall semester.

FINANCIAL AID

A variety of federal, state, and local financial aid programs are available to qualified students who might otherwise find it difficult or impossible to attend Nashville Tech. Fair and equal consideration is given to applicants without regard to race, color, sex, national origin, religion, age or disability. Students are encouraged to obtain a free copy of *The Student Guide* from the Financial Aid Office. This federal publication provides an excellent overview of federal programs and eligibility requirements. Students may also inquire at the Financial Aid Office regarding individual circumstances that need to be considered when packaging financial aid. Please note that the following information is subject to change and is based on federal regulations and institutional policies and procedures at the time of writing.

FEDERAL/STATE ASSISTANCE

There are several federal and state programs available to students at Nashville Tech. These Title IV Programs include the Federal Pell Grant, Federal Supplemental Educational Opportunity Grant (FSEOG), Federal Work-Study (FWS), Federal Subsidized and Unsubsidized Stafford Loan, Federal Parent Loan for Undergraduate Students (FPLUS), and Tennessee Student Assistance Award (TSAA). These programs have a wide range of eligibility requirements. Even so, there are a number of **general eligibility requirements** common to each of these programs:

1. Students must have "financial need" which is determined by subtracting the "expected family contribution" as determined by federal methodology from the "cost of attendance." Though the Federal Unsubsidized Stafford Loan and FPLUS are non-need-based loans, eligibility for need-based programs must first be determined before students can make application for these programs.
2. Students must be U.S. citizens or eligible non-citizens. Students in the U.S. on an F1 or F2 student visa, J1 or J2 exchange visitor visa, or a G series visa are not eligible for Title IV Programs.
3. Students must have a valid Social Security number.
4. Students must be enrolled as regular students in an eligible program of study.
5. Students must maintain satisfactory academic progress as measured by the Financial Aid Office. A copy of the "Standards of Satisfactory Academic Progress" is available at the Financial Aid Office.
6. Students must be registered with Selective Service.
7. Students must have a high school diploma or GED.
8. Students cannot receive Title IV funds for more than the first 30 credit hours attempted of remedial and developmental classes.
9. Students cannot be in default on a student loan or owe a federal/state grant refund.

APPLICATION PROCESS FOR FEDERAL/STATE PROGRAMS:

Students must complete the Free Application for Federal Student Aid (FAFSA) or a Renewal Application mailed from the U.S. Department of Education. The FAFSA can be obtained at the

Financial Aid Office. The FAFSA or Renewal Application must be completed each year by students who wish to be considered for federal/state financial aid assistance for the subsequent academic year.

Students are encouraged to file tax returns prior to completing the FAFSA or Renewal Application. Nashville Tech uses a priority filing date of May 1 when awarding FSEOG and FWS funds. Students will receive a Student Aid Report approximately four weeks after mailing a completed FAFSA or Renewal Application. The Student Aid Report should be submitted to the Financial Aid Office. Some students may be selected for a process called verification. In such cases, a verifcation worksheet and applicable tax returns must also be provided. If corrections are needed to the Student Aid Report, the Financial Aid Office will make them electronically.

Students must obtain financial aid transcripts from all post-secondary schools previously attended, whether or not financial aid was received and whether or not they plan to transfer academic credit. Hand-delivered financial aid transcripts are not accepted.

Students must also complete the Nashville Tech Financial Aid application and provide other information as requested by the Financial Aid Office. Failure to submit requested information in a timely manner may delay receipt of financial aid funds and/or preclude students from being considered for some financial aid programs.

A Financial Aid Award Notification will be sent to students after their financial aid file is complete. The awarding process generally does not begin until approximately mid-June prior to each award year.

It is the **student's responsibility** to notify the Financial Aid Office of any changes to the FAFSA or Renewal Application information.

SOURCES OF FEDERAL/STATE ASSISTANCE

FEDERAL PELL GRANT: A need-based non-repayable grant for undergraduate students. Eligibility is based on the student's "expected family contribution," cost of attendance, enrollment status, and whether or not the student attends a full academic year. The maximum yearly grant is $2,340 for a full-time student. Eligible students may receive this grant if enrolled in one or more credit hours.

FEDERAL SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANT (FSEOG): A non-repayable grant to students with exceptional financial need. Priority is given to Federal Pell Grant recipients with the lowest "expected family contribution." Priority is also given to students who make application prior to May 1 preceding an award year. Average awards are $200 per semester and funding is limited. Eligible students must be enrolled in one or more credit hours.

TENNESSEE STUDENT ASSISTANCE AWARD: A non-repayable grant to Tennessee residents who are eligible to receive a Federal Pell Grant. Students must be enrolled in at least six credit hours. Priority is given to students who complete the FAFSA by May 1 prior to the award year. The maximum yearly award covers up to 50 percent of the cost of registration fees. For example, the maximum yearly award for 1994-95 was $474.

FEDERAL WORK-STUDY: This program provides jobs for students who have financial need. Priority is given to students who make application prior to May 1 preceding an award year and who have the lowest "expected family contribution." Students work an average of 15 hours per week at a pay rate of $5.50 per hour. An average yearly award is $2,640, and funding is limited. Though most jobs are on campus, some jobs are available off campus in community service positions. A higher rate of pay is provided to assist with transportation expenses.

FEDERAL SUBSIDIZED STAFFORD LOAN: A need-based low-interest loan for eligible students enrolled in at least six credit hours. Loan applications may be obtained from the Financial Aid Office or from a bank, credit union, or savings and loan association. Students must attend a pre-loan workshop for each loan application submitted, except in cases when a supplemental loan application is being submitted for the same payment period. Eligibility for a Federal Pell Grant must first be established. Maximum awards are based on financial need and whether or not a student is classified as a freshman or sophomore. Students are also subject to annual and aggregate limits. Interest does not accrue while the student is in school. Repayment begins (as well as interest) six months after the student drops below half-time status. There are a number

of deferment and forbearance options available to students. Refer to *The Student Guide* available in the Financial Aid Office. Students must attend an exit-loan workshop prior to graduation or at which point they otherwise plan to drop below half-time status.

FEDERAL UNSUBSIDIZED STAFFORD LOAN: A non-need-based low-interest loan for eligible students enrolled in at least six credit hours. Loan applications may be obtained from the Financial Aid Office or from a bank, credit union, or savings and loan association. Students must attend a pre-loan workshop for each loan application submitted, except in cases when a supplemental loan application is being submitted for the same payment period. Eligibility for a Federal Pell Grant and Subsidized Stafford Loan must first be established. Maximum awards are based on whether or not a student is classified as a freshman or sophomore. Students are also subject to annual and aggregate limits. Interest accrues while students are in school. Students have the option to make payments on the interest or to allow it to capitalize. Repayment begins six months after students drop below half-time enrollment status. There are a number of deferment and forbearance options available to students. Refer to *The Student Guide* available in the Financial Aid Office. Students must attend an exit-loan workshop prior to graduation or at which point they otherwise plan to drop below half-time status.

FEDERAL PARENT LOAN FOR UNDERGRADUATE STUDENTS: This loan is for parents of dependent students. Eligibility for the Federal Pell Grant and Federal Subsidized and Unsubsidized Stafford Loan must first be established. Maximum awards cannot exceed a student's cost of attendance less other financial aid received. Loan applications may be obtained from the Financial Aid Office or from a bank, credit union, or savings and loan association.

UNDERSTANDING THE NASHVILLE TECH FINANCIAL AID NOTIFICATION

Students will receive a Financial Aid Notification after their financial aid file is complete. The awarding process generally does not begin until approximately mid-June prior to each award year. Since FSEOG and FWS funds are limited, awards will be made based on files completed at the time the awarding process begins. FSEOG and FWS awards are further based on the date the federal processor received the FAFSA (with priority given to those received prior to May 1) and based on the student "expected family contribution" as determined by the Student Aid Report (with priority given to students with the lowest "expected family contribution").

The Financial Aid Notification will include an assessment of "need" for financial aid. The following example illustrates such an assessment for a dependent student living with parent(s) or relative(s) during the 1994-95 academic year. It should be noted that the cost of registration fees during the 1994-95 academic year (total for two semesters) for a full-time, in-state student was $974 including the student activity fee. The average allowance for books and supplies for the same period was $550.

* Cost of Attendance	$4,986
(less) Expected Family Contribution	200
Need for Financial Aid	$4,786

The cost of attendance includes an allowance for registration fees, books and supplies, transportation, room and board, and other personal and miscellaneous expenses.

Based on the example, the student might have received the following type of financial assistance:

Federal Pell Grant	$2,150
Federal Supplemental Education Grant	400
Tennessee Student Assistance Award..	450
Total Award	$3,000

(It should be noted that in this example, the student received an amount of financial assistance which exceeded the amount needed for the direct educational cost of registration fees and books and supplies. The balance could be used for other education related expenses. Based on the student's unmet need of $1,786 ($4,786 "need" less $3,000 total award), the student could receive additional assistance via student loans, scholarships, Federal Work-Study (based on awarding procedures noted above), etc.

A letter of explanation will be sent with the Financial Aid Notification which contains further details regarding awards.

PAYMENT OF REGISTRATION FEES AND BOOKS/SUPPLIES

Students are allowed to defer payment of registration fees at the point of registration and are allowed to charge books and supplies at the Nashville Tech Bookstore during the first week of class **if** their financial aid files are complete and if their Federal Pell Grant and/or FSEOG awards are sufficient to cover these costs. If students are only eligible to receive a student loan and if they have attended a pre-loan workshop, they may be granted a "special deferment" of payment of registration fees pending receipt of student loan proceeds. In such cases, students should still be prepared to purchase books and supplies. Students must contact the Financial Aid Office to obtain a "special deferment." Otherwise, unless they have another third-party source of financial assistance such as scholarships, Job Training Partnership Act Program, vocational Rehabilitation, Single Parents/Displaced Homemakers Program, etc., they should be prepared to pay their registration fees at the point they register.

DISBURSEMENT OF FEDERAL/STATE FUNDS

If students' Federal Pell Grant or FSEOG awards exceed the amount owed for registration fees and/or books and supplies, they will receive a residual check approximately four weeks into the semester at our Business Office. Enrollment status at the point payment is authorized by the Financial Aid Office will determine the amount of the award. Example: If a student is enrolled in twelve credit hours on the first day of class but subsequently drops to nine credit hours prior to authorization for payment, the Financial Aid Office will authorize payment based on nine credit hours. If a student totally withdraws from classes prior to picking up the residual check, it will be canceled and refunded back to the appropriate Title IV account(s).

Tennessee Student Assistance Awards are normally not disbursed until around mid-term. Student loan proceeds will be disbursed on or after the first day of class each semester. As an exception, federal law specifies that first-year, first-time borrowers cannot receive their first disbursement until after 30 days into the payment period. All loan proceeds are disbursed in at least two payments. Students must be enrolled in at least six credit hours at the time they receive their Tennessee Student Assistance Award or student loan proceeds. Students who are employed in the Federal Work-Study Program are paid every two weeks.

OVERPAYMENTS

Overpayments occur for several reasons. In some cases, students receive financial aid assistance in an amount that exceeds their "need" for financial aid. In other cases, students are inadvertently overpaid Federal Pell Grant funds. No matter what the reason, overpayments must be resolved. In most cases, Nashville Tech is able to resolve overpayments by reducing awards for subsequent semesters during the same academic year. In some cases, the Financial Aid Office will notify the student of an amount that must be repaid to a specific program. If the overpayment cannot be resolved by reducing subsequent awards during the same year, students will be required to make immediate repayment or may enter into a written agreement to repay the amount owed within six months. If the overpayment is due to student error, and if the student fails to repay the overpayment, the student will be ineligible for future financial aid assistance at all post-secondary schools. If the error is a result of fraud, it will be reported to the Department of Education. If the overpayment is a result of institutional error and if the student has not made repayment by the close of the award year, Nashville Tech will be responsible for making the repayment. In such cases, Nashville Tech will then bill the student and will place a "hold" on future registration.

REFUNDS/REPAYMENTS

Title IV recipients who partially withdraw from classes on or after the first day of class may be eligible for a tuition refund based on the Nashville Tech refund policy. Students are allowed to receive such refunds except in cases when they totally withdraw. If a financial aid recipient totally withdraws and if there is an institutional refund due, it will be refunded to federal or state programs according to specified policy and procedure. A copy of the refund/repayment policy may be obtained at the Financial Aid Office. First-time students who are receiving financial aid who total-

ly withdraw on or before 60 percent of the semester are given a pro-rata refund. In such cases, the refund is distributed to federal or state programs according to specified policy and procedure.

Using the cost of maintenance fees for a full-time student enrolled during the Spring Semester of 1995 as an example, the following represents a scenario of a first-time student who drops during the third week of class: The regular institutional refund would be 25 percent of $483 which would equal $120.75. However, a pro-rata refund would be 80 percent of $483 which would equal $386.40. Since the pro-rata refund would yield the highest refund, it must be used when determining the amount which should be refunded back to Title IV. The particular distribution back to Title IV programs is specified by law.

SCHOLARSHIPS

The information regarding scholarships is presented in a brief manner and is subject to change. Students are encouraged to contact the Financial Aid Office for complete guidelines and applications. The number of awards in each category is contingent upon funding.

ACADEMIC SERVICE SCHOLARSHIP: This scholarship is awarded to Tennessee residents who are classified as full-time students. First-year students must graduate in the upper one-fourth of their senior class with at least a 2.9 high school grade point average. The priority date to make application is May 1, 1995. Further priority will be made in the following sequence: (a) renewal applications and 1995 high school graduates, and (b) currently enrolled or transfer students not presently receiving this scholarship at Nashville Tech. After May 1, all eligible applicants will be considered based on the date of application. The amount of the scholarship will be equal to required registration fees (maintenance fee and student activity fee). Recipients are required to work 75 hours per semester on campus.

BENNE R. JONES MEMORIAL SCHOLARSHIP: This is a need-based scholarship in the amount of $500 to be awarded to a deserving student from Warren County, Tennessee.

EDWARD L. WELD SCHOLARSHIP: An award of $350 will be made to a first-time, full-time student enrolling in an associate degree program at Nashville Tech. Applicants must have maintained a 3.5 GPA or above during their four years of high school.

FACULTY AND STAFF SCHOLARSHIP: Awards in the amount of $400 will be awarded to degree-seeking students who have completed at least one semester at Nashville Tech with a minimum of six credit hours earned in college-level courses. Applicants must have a minimum cumulative GPA of 2.5. Education and career goals will also be taken into consideration.

HELEN MEADOR MEMORIAL SCHOLARSHIP: **An** award of $1,000 will be made to a student enrolled as a Visual Communications major. The applicant must have expressed financial need and have a minimum cumulative GPA of 2.5 in previous educational experience. The applicant must express definite career plans.

MIDDLE TENNESSEE INDUSTRIAL DISTRIBUTOR'S ASSOCIATION, INC. SCHOLARSHIP: Four $1,000 scholarships are awarded each year to selected applicants who have completed at least one year as full-time students at Nashville Tech with a minimum cumulative grade point average of 3.0 each semester and continue to be enrolled as full-time students in Automation-Robotics Technology, Electrical Engineering Technology, Industrial Engineering Technology, or Mechanical Engineering Technology. Financial need and education/career goals are also considered in the selection process.

MINORITY SCHOLARSHIP: This scholarship is awarded to African-American students. The priority application date is April 1 preceding each award year. Students are required to complete the Free Application for Federal Student Aid. Since funds are limited, preference is given to students who do not quale for the Federal Pell Grant. Awards will cover required registration fees (maintenance fee and student activity fee) based on the student's enrollment status at the rate of in-state assessment.

OTHER SCHOLARSHIPS: As additional scholarships become available, they are posted in the student newsletter *Take One.* Students may also inquire at the Financial Aid Office. Students are also encouraged to check with local organizations in reference to potential scholarships as well as with their employers.

OTHER ASSISTANCE

JOB TRAINING PARTNERSHIP ACT (JTPA): The Job Training Partnership Act is designed to provide economically disadvantaged individuals the training they need to hold good jobs in the private sector. Business, government, labor groups and schools work together to provide vocational skills to those who are out of work or who earn low incomes. Nashville Tech participates with eligible students in this program.

Students who wish to certify their eligibility for JTPA should contact the Student Development Office for the name of their local certifying agency. The grant applies to associate degree programs and technical certificates.

SINGLE PARENTS/DISPLACED HOMEMAKERS PROGRAM: The Carl Perkins Vocational Act provides federal funds to assist the single parent and displaced homemaker with some of the costs related to attending school. Students who are eligible to participate in this program are reimbursed for a portion of their travel and/or child care. A limited amount is available for tuition and/or books. This grant applies to associate degree programs and technical certificates.

A single parent is a person who has never been married. A displaced homemaker is divorced or widowed with the custody of one or more minor children and is the head of the household. A displaced homemaker with or without children may also be a person who has not worked in the labor force for a substantial number of years while providing unpaid services for family members in the home: who has been dependent on public assistance or on the income of another family member, but is no longer supported by that income: or who is unemployed or underemployed and is experiencing difficulties in obtaining or upgrading employment.

Further, in determining eligibility, annual family income and additional financial aid will be considered. Students wishing to apply for this program should contact the Single Parents/Displaced Homemakers Program in the Student Development Office.

VETERANS' BENEFITS: Veterans and eligible dependents of veterans who wish to apply for educational benefits from the Veterans Administration (VA) should contact the Records Office at Nashville Tech to complete the necessary forms to receive VA benefits.

HOUSING

Nashville Tech does not have residence halls. Therefore, it is recommended that the student begin efforts to obtain housing at an early date. Any student needing assistance in securing housing may receive information from the Student Development Center.

LIBRARY

The Nashville Tech Library enhances and facilitates learning. The Library is fully automated, with an on-line catalog and CD-ROM reference materials. It has an extensive collection of technical books and periodicals as well as recreational reading materials. The collection contains newspapers, video tapes, audio tapes, films, slide-tape sets, microcomputer software, and microfiche. Equipment is available for using these materials in the classroom or in the Library.

Faculty, staff, and students share in selection of library materials; student suggestions are especially welcome. Technical materials not available in the Library can be borrowed from other libraries.

Housed in the Library, the Testing Center coordinates student tutoring sessions, offers make-up testing, assesses Nashville Tech students for course placement, and serves as an ACT test site.

Nashville Tech's Library is open to anyone in the community. Hours are: Monday through Thursday from 7:45 a.m. to 8:00 p.m., Friday from 7:45 a.m. to 4:30 p.m., and Saturday from 9:00 a.m. to 2:00 p.m. during the academic year. Trained personnel provide willing assistance to Library users in a comfortable and pleasant setting. The Library has facilities for both group and individual study.

ORIENTATION

Prior to each academic term, new students attend one of several orientation programs. These programs orient students to campus life and to the many services provided by Nashville Tech.

Students have an opportunity to meet and talk with advisors, discuss registration procedures, meet each other, learn about campus clubs and organizations, and participate in campus tours. Information regarding Student Orientation is available from the Student Development Center. All incoming degree-seeking students are strongly encouraged to attend.

SECURITY

In the event any student should require the services of security personnel, officers are on duty 24 hours a day to ensure the safety and security of both students and campus facilities. The Security Office is located in A-70A, adjacent to the campus bookstore.

Information about on-campus crime rates is available on request from the Security Office.

STUDENT ACTIVITIES

The college encourages extracurricular activities which develop individual initiative, group leadership and cooperation. Student activities are faculty sanctioned and supervised. The organization and administration of student activities is a function of the Student Development Center. Each semester a fee is assessed to provide funding for student activities and events. Activities include cultural, social, recreational and educational events. A Student Activities Board recommends and selects all extracurricular activities for the college.

STUDENT DEVELOPMENT CENTER

Professional counselors and trained advisors are active participants in the academic, career, and life-planning services of the college. A developmental academic advising approach includes exploring life goals, identifying career and educational objectives, choosing appropriate academic programs, and selecting and scheduling of proper courses, and assisting students in making sound educational and career decisions.

All degree-seeking students are assigned to an advisor in the Student Development Center during their freshman year. In the freshman year experience, the student and the advisor work closely in designing a timely plan to meet the educational goals of the student.

Certified counselors are also available to assist students on an individual basis with problems and challenges which may arise while they are enrolled at the college.

Information about graduation rates of Nashville Tech students is available from the Assistant to the Vice President of Academic Affairs, whose office is in the Student Development Center. The college complies with the Student-Right-to-Know legislation.

STUDENT GOVERNMENT ASSOCIATION

The purpose of the Student Government Association is to promote and expand interest in student activities and to serve as an advisory group to both the administration and student body. All members of the Student Government Association are elected or appointed during the first four weeks of the fall semester and serve a one-year term. The faculty advisor is appointed by the president of Nashville Tech. Information related to the Student Government Association can be found in the Nashville Tech Student Handbook.

STUDENT IDENTIFICATION CARD

All students must have a Nashville Tech Student ID card in their possession while on campus. This card enables students to check out library materials, use campus facilities, and participate in college activities.

ID cards are free of charge for all new students and are issued during the first week of classes upon presentation of a paid maintenance fee receipt in the Nashville Tech Library. However, a $3 replacement fee is charged for lost ID cards. ID cards must be validated at the beginning of each academic term.

STUDENT ORGANIZATIONS

Honor, social, and professional clubs are available to Nashville Tech students. Each fall and spring term, the college has a Rush Week when students are encouraged and given an opportunity to join clubs and organizations. Information related to the various organizations can be obtained from the Student Development Center.

STUDENT SUPPORT SERVICES PROGRAM

For students who qualify, Student Support Services is a federally-funded program which provides three important services needed by every student at some time during his or her academic program: advising, tutoring and career planning.

The major goals of the program are to increase the students' probability of academic success and program completion and to assist students who plan to pursue baccalaureate and graduate degrees. Students receive tutorial and study skills services, scheduled advising services, career planning sessions, and long-term academic follow-up with Student Support Services staff.

EXPENSES AND BUSINESS REGULATIONS

Nashville Tech is a state-supported college and, therefore, maintains modest matriculation and incidental fees. Expenses are charged and payable by the semester, since each semester is a separate unit of operation. Registration is not complete until all required fees have been paid (which means all checks have cleared the bank), and students who have not met their financial obligations will not be admitted to classes. All payments are to be made by cash, check, Visa or MasterCard to the Business Office.

MAINTENANCE AND TUITION FEES

Current in-state **and** out-of-state fee amounts:

Maintenance Fee/In-State Students (subject to change) - $43 per credit hour, maximum of $483 per semester

Tuition/Out-of-State Students (subject to change) - $165 per credit hour ($43 fee plus $122 tuition), maximum of $1,876 per semester ($483 fee plus $1,393 tuition)

Age 65 and over or totally disabled - Residents of Tennessee (for credit enrollment):

Part time	$21.50 per credit hour
Maximum	$45.00 per semester

Enrollment without payment of the full maintenance fee will be subject to the availability of space in the class being requested.

CEU	refer to Special Interest Courses Brochure
Credit by Examination	$15.00 per credit hour

For more information, call 353-3310.

The above fees are subject to changes by policy of the Tennessee Board of Regents. Fee schedules are published as changes occur.

OTHER FEES

Application Fee, non-refundable	$5.00
Change of Registration Fee (drop-add), per form, non-refundable	$5.00
Graduation Fee, per graduation ceremony, non-refundable	$25.00
Late Registration Fee, non-refundable	$10.00
Library Fee for Reserved Books, $0.50 per hour up to a maximum of	$5.00
Locker Fee, non-refundable	$2.00
Motor Vehicle Registration Fee, campus parking, non-refundable annual fee per vehicle	$5.00
Returned Check Fee	$15.00
Traffic Violation Fees:	
Violation, disabled parking	$100.00
All other violations	$5.00 per violation
Student Activity Fee (non-refundable):	
1 - 3 credit hours	$1.00
4 - 6 credit hours	$2.00
7 - 9 credit hours	$3.00
10 or more credit hours	$4.00

For additional information, call 353-3310.

The above fees are subject to change by policy of the Tennessee Board of Regents. Fee schedules are published as changes occur.

Registration, maintenance and tuition fees for the summer term will be the same as for the other two semesters. Fees for auditing a course will be the same as the fees paid if taking the course for credit.

Students are classified as residents or non-residents for the purpose of assessing maintenance and tuition charges. The definition of residency as determined by the Tennessee Board of

Regents will apply. Information about residence classification may be obtained from the Admissions or Records offices.

SENIOR CITIZENS AND STUDENTS WITH DISABILITIES

For audit courses, no fee is required for persons who are totally disabled or who are 60 years of age or older. Enrollment will be subject to the availability of space in the class requested.

Persons 65 years of age or older who live in Tennessee or totally disabled persons may enroll for credit as special students for a fee equal to 50 percent of the semester hour rate, not to exceed a maximum of $45.00 per semester. Enrollment will be subject to the availability of space in the class requested.

Students in these categories may register for classes on the first day of late registration. An applicant who wishes to be admitted in one of these categories must submit the following:

1. A completed application for admission.
2. A five-dollar ($5.00) non-refundable application fee.
3. Proof of age or disability.

NOTE: Fees for Continuing Education Units (CEU's) are not waived or reduced.

STATE EMPLOYEE FEE WAIVERS

Title 8, Chapter 50, Part 1 in Public Chapter 1047 of the 1990 Publics Acts enables full-time employees of the State of Tennessee to be eligible for enrollment in one course per term at any state supported college or university without the payment of tuition charges, maintenance fees, debt service fees, student activity fees or registration fees.

The following are rules that govern the use of this fee waiver type:

1. Fees are not waived for non-credit or correspondence courses, application fees, or parking permits.
2. Enrollment is subject to space availability in the class selected. Registration is permitted only during the late registration process.
3. At the time of enrollment, the employee must have a completed state employee fee waiver form signed by his or her employer certifying that the applicant is a full-time employee with at least six months of continuous service.

REFUNDS

Two changes in a student's status which may require a refund are: (1) changes in a full-time student's schedule which result in reclassification to part-time student status; and (2) a change in a part-time student's schedule which results in a class load of fewer hours. Other situations which may require a refund are dropping a course or courses, withdrawing from school, cancellation of a class by the college, or death of the student.

The following procedures will be followed in regard to refund of maintenance fees:

If Withdrawal Is:	**Refund Will Be:**
After pre-registration but **before** the published first day of class	100%*
For courses cancelled by the college	100%*
On the first day of class through the 14th calendar day from the published first day of classes	75%
On the 15th calendar day from the published first day of classes through 25% of the semester calendar days (see school calendar)	25%
After 25% period	0%

Ail refund periods will be rounded up or down to the nearest whole day if necessary.

- A 100% refund will be provided on behalf of a student whose death occurs during the semester.
- A 100% refund will be provided to students who are compelled by the college to withdraw.
- A 100% refund will be provided, upon submission of required forms, to students absent from the college in excess of thirty (30) days while on active military duty.

A refund date will be established for each semester.

Summer term refunds will be based on the above procedures with concentrated terms being prorated as a percentage of a regular term.

No refunds will be made for Continuing Education Units (CEUs) unless the class is cancelled.

RETURNED CHECKS

There is a $15.00 charge for any check accepted by the college that is returned. Returned checks received for the payment of registration fees, if not redeemed within ten (10) calendar days from the postmark date of the college's letter of notification, shall result in the administrative dismissal of the student. A late fee of $10.00 will also be assessed for any returned check for registration fees, unless the student registered late initially.

Failure to redeem the check after formal notice shall result in the matter being referred to a law enforcement agency for collection and the initiation of college disciplinary action.

No student may re-enroll, graduate, receive grades, or receive a transcript until all accounts are settled. The term "account" includes any indebtedness to the college.

Cash payment will be required of any student who has written multiple returned checks.

The above policy on returned checks is in accordance with recommended and approved policies of the Tennessee Board of Regents.

VEHICLE REGISTRATION AND PARKING

All privately owned and/or operated vehicles used on campus by students and staff must be registered in the Security Office (Room A-70A) and must bear an official registration decal for which there is an annual charge of $5.00. The vehicle registration decal may be displayed on a vehicle by the owner or driver is such a manner that it will be clearly visible from the rear of the vehicle. Vehicles so registered must be parked as directed. Students should park in the designated lot and park each vehicle so that it is headed into the parking place with the decal exposed to the traffic lanes. No vehicles are to be parked in the road or on the shoulders of the road. Any vehicle improperly parked may be towed away at the owner's expense. The speed limit on campus is 15 m.p.h. Pedestrians are entitled to the right of way but should exercise caution and courtesy so as not to impede the orderly flow of traffic.

Special parking areas are provided for students with disabilities. Disabled parking is governed by the laws of the State of Tennessee.

Parking for students enrolled in special courses will be regulated as specified in the course announcement.

APPEALS PROCESS

1. Traffic fines:
   a. Traffic fines may be appealed to the Traffic Committee.
   b. Appeal forms may be obtained from Security in Room A-70A.
   c. For detailed information, refer to the Traffic & Parking Regulations brochure.
2. Other fees, charges, refunds:
   a. Appeals must be in written form and addressed to the Vice President of Finance and Administrative Services.
   b. Forms are available in the Vice President's office, room W-35.
   c. The Vice President of Finance and Administrative Services will prepare a written response to the appeal. If the response is negative, the reason will be so stated.

NASHVILLE TECH BOOKSTORE

The Nashville Tech Bookstore is located in A-47 and is operated under the auspices of the college for the convenience of the students. The Bookstore carries all required textbooks and an assortment of student supplies, health and beauty aids, clothing, general reading materials, and emblematic items.

Textbooks are selected and approved by the teaching staff. Since the cost of books and supplies varies from one program of study to another and from semester to semester, only the average costs can be included in this catalog. The average cost of books and supplies is approximately $300-$450 per year, depending upon the program of study. The majority of book and supply costs will be incurred during the fall semester. In courses requiring special equipment and supplies, additional costs must be added.

The Bookstore accepts cash, personal checks, or company checks (accompanied by a letter of introduction on company letterhead) made payable to **Nashville Tech Bookstore,** American Express, VISA, MasterCard and Discover. There is a $25.00 charge for any check accepted by the Bookstore that is returned, in addition to the face value of the check. Students with returned checks will not be permitted to make additional purchases until the checks are redeemed.

If a class is cancelled, the full new purchase price of a book is refundable through the first two weeks of classes provided: (1) no markings have been made in the book; and (2) the cancel slip and sales receipt are presented when the refund is requested. (For further information, see "Return Policy.")

The Bookstore's normal hours of operation are:

Monday - Thursday:	7:30 a.m. - 6:30 p.m.
Friday:	7:30 a.m. - Noon

When students are not present, the hours are:

Monday - Friday:	7:30 a.m. - 4:30 p.m.

Changes in Bookstore hours will be posted on the entrance door.

BOOKSTORE RETURN POLICY

The Bookstore's policy on returns includes the following:

1. Only clean, unmarked and unread books in new condition may be returned for the full price. The Bookstore Manager is the final judge on the condition of a book.
2. Books may be returned for any reason during the first 10 days of class upon presentation of the Bookstore cash register receipt. After the first 10 days of classes, all books returned to the Bookstore will be purchased at the Missouri Book Service's catalog price. The Bookstore Manager will be the final judge on any special cases. Refunds are made in cash for returned items originally purchased in cash or by check after ten (10) days. Items purchased by credit card are credited to the credit card account. Items NOT accompanied by a Bookstore cash register receipt are not eligible for cash refunds.
3. Books that have markings in them, or which show signs of wear or damage, are classified as USED books and will be purchased according to the "Textbook Buy-Back" policy below.
4. Defective textbooks and supplies may be returned for REPLACEMENT upon presentation of the defective item and the cash register receipt.

TEXTBOOK BUY-BACK POLICY

During final examination week of each semester, the Bookstore conducts a textbook buy-back. The Bookstore will pay 50 percent of the retail price of a book if it has been adopted for the following semester and the Bookstore **is not over-stocked** on the title. If the book is NOT scheduled for use the following semester, the purchase price will be limited to the wholesale value of the book as listed in the "Used Book Wholesaler's Buying Guide" from the Missouri Book Service (MBS). Books are bought back throughout the year, but at a price considerably lower than the semester's end price cited above, as set by the MBS "Used Book Wholesaler's Buying Guide."

ACADEMIC PROGRAM DESCRIPTIONS

All academic programs of study, both two-year degree programs and one-year certificate programs, are listed alphabetically in this section. Each listing includes a brief description of the program and a suggested schedule of courses.

The **Business and Industry Training Division** offers approximately 150 Special Interest courses to develop employees' skills in particular areas. A sample of these courses is listed on page 101.

General Education courses to support technical programs and serve transfer students are described on page 105.

The **Academic Skills Department** offers courses to strengthen academic skills and corn-petencies, as described on page 105. Students cannot enroll in certain college-level courses until they have completed required Academic Skills courses or met the criteria of qualification.

ARCHITECTURAL ENGINEERING TECHNOLOGY

Associate of Applied Science

The technical content of this program supplies a broad background in the many different areas of applied architecture and construction. The program places a strong emphasis on drafting by both traditional and computer-aided methods. Students also take courses in specifications, estimating, construction methods, structures, surveying, and plumbing, mechanical, and electrical systems. This wide selection of courses acquaints the student with an entire construction project, from design through completed construction.

Typical positions available to graduates include: **drafters** - prepare the architectural design drawings by hand; **computer-aided drafters** - develop design drawings using computers; **estimators** - prepare quantity and cost estimates for contractors and material suppliers; **detailers** - prepare shop drawings; **assistant superintendents** - assist in checking shop drawings, ordering materials and laying out the structure; and **inspectors** - visit the site to determine if the work is carried out according to plans and specifications.

With additional job experience, the graduates assume more responsibility and can become superintendents and project managers.

ARCHITECTURAL ENGINEERING TECHNOLOGY
COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
ENG 2112	Report Writing	3	0	3
SPE 1111	Speech	3	0	3
Humanities Elective				
	Humanities Elective	3	0	3
Mathematics				
MAT 1140	Technical Mathematics	5	0	5
MAT 1150	Basic Calculus	3	0	3
Physics				
PHY 1110	College Physics I	3	0	3
PHY 1111	Physics Laboratory I	0	2	1
PHY 1120	College Physics II	3	0	3
PHY 1121	Physics Laboratory II	0	2	1
Social Science Elective				
	Social Science Elective	3	0	3
Civil Engineering Technology				
CIT 1112	Board Drafting Basics	0	6	2
CIT 1220	Materials and Methods of Construction	3	0	3
CIT 2110	Structural Mechanics	3	0	3
CIT 2130	Surveying I	2	3	3
CIT 2400	Structural Design	3	0	3
Architectural Engineering Technology				
ACT 1161	Residential Drafting and Construction	2	6	4
ACT 1341	Commercial Drafting and Codes	1	6	3
ACT 1391	History of Architecture	3	0	3
ACT 1432	Computer-Aided Drafting I	1	4	3
ACT 1530	Computer-Aided Drafting II	0	6	3
ACT 2160	Building Utilities	3	0	3
ACT 2241	Advanced Architectural Drafting	1	5	3
ACT 2440	Specifications and Estimating	2	2	3
ACT 2460	Advanced Architectural CAD	0	9	3
General Education Elective				
	*General Elective	3	0	3
	Total Required - Associate's Degree			76

*The General Elective may be any regular credit course. Continuing Education courses or other non-credit courses do not qualify.

ARCHITECTURAC ENGINEERING TECHNOLOGY

FIRST YEAR

Fall Semester		Cr.
ENG 1111	Composition I	3
MAT 1140	Technical Mathematics	5
ACT 1161	Residential Drafting and Construction	4
ACT 1432	Computer-Aided Drafting I	3
CIT 1112	Board Drafting Basics	2.
Spring Semester		
MAT 1150	Basic Calculus	3
ACT 1341	Commercial Drafting and Codes	3
ACT 1391	History of Architecture	3
ACT 1530	Computer-Aided Drafting II	3
CIT 1220	Materials and Methods of Construction	3
	Social Science Elective	3
	General Elective	3

SECOND YEAR

Fall Semester		Cr.
ENG 2112	Report Writing	3
PHY 1110	College Physics I	3
PHY 1111	Physics Laboratory I	1
ACT 2160	Building Utilities	3
ACT 2241	Advanced Architectural Drafting	3
CIT 2110	Structural Mechanics	3
CIT 2130	Surveying I	3
Spring Semester		
SPE 1111	Speech	3
PHY 1120	College Physics II	3
PHY 1121	Physics Laboratory II	1
ACT 2440	Specifications and Estimating	3
ACT 2460	Advanced Architectural CAD	3
CIT 2400	Structural Design	3
	Humanities Elective	3

ARCHITECTURAL ENGINEERING TECHNOLOGY
RECOMMENDED PART-TIME EVENING SCHEDULE

FIRST YEAR

Fall Semester		Cr.
ENG 1111	Composition I	3
MAT 1140	Technical Mathematics	5
Spring Semester		
ACT 1161	Residential Drafting and Construction	4
CIT 1112	Board Drafting Basics	2
Summer Semester		
ACT 1432	Computer-Aided Drafting I	3
	General Elective	3

THIRD YEAR

Fall Semester		Cr.
PHY 1110	College Physics I	3
PHY 1111	Physics Laboratory I	1
ACT 2160	Building Utilities	3
Spring Semester		
ACT 2241	Advanced Architectural Drafting	3
CIT 2110	Structural Mechanics	3
Summer Semester		
ENG 2112	Report Writing	3
CIT 2130	Surveying I	3

SECOND YEAR

Fall Semester		Cr.
ACT 1341	Commercial Drafting and Codes	3
CIT 1220	Materials and Methods of Construction	3
Spring Semester		
MAT 1150	Basic Calculus	3
	Social Science Elective	3
Summer Semester		
ACT 1391	History of Architecture	3
ACT 1530	Computer-Aided Drafting II	3

FOURTH YEAR

Fall Semester		Cr.
ACT 2460	Advanced Architectural CAD	3
CIT 2400	Structural Design	3
Spring Semester		
PHY 1120	College Physics II	3
PHY 1121	Physics Laboratory II	1
ACT 2440	Specifications and Estimating	3
Summer Semester		
SPE 1111	Speech	3
	Humanities Elective	3

Cooperative Education work experience in Architectural Engineering Technology can be an important addition to a student's formal classroom work. Co-op courses, if appropriate, may substitute for technical courses up to 5 credit hours with the prior approval of the department head. All Co-op work must have department head approval. The Co-op office will provide the correct course numbers. Students participating in Cooperative Education are encouraged to work a minimum of two terms. See page 103 for more information.

AUTOMATION-ROBOTICS TECHNOLOGY

Associate of Applied Science

A wide variety of businesses and industries now utilize, or will be adding, automated systems to their operation. The Automation-Robotics Technology curriculum provides students with a broad range of technical skills in the electrical, electronic, digital and mechanical areas. Students will become knowledgeable in many phases of automation techniques, from design and application to maintenance of automatic control of manufacturing or other complex systems.

Digital techniques, microprocessors, hydraulic and pneumatic systems, instrumentation, transducers, motors, programmable controllers and mechanical equipment are emphasized. These individual topics are then combined in courses dealing with troubleshooting and with maintenance and repair of automated manufacturing systems including industrial robots. Students receive extensive hands-on experience and marketable job skills throughout the program.

Typical jobs for graduates are: maintenance technician - responsible for repair and maintenance of automated manufacturing systems and robots: installation technician - responsible for the installation and start-up of automated manufacturing systems and robots: and technical project coordinator - responsible for coordination between design and production of automated systems.

AUTOMATION-ROBOTICS TECHNOLOGY
COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
SPE 1111	Speech	3	0	3
Humanities Elective				
	Humanities Elective	3	0	3
Mathematics				
MAT 1140	Technical Mathematics	5	0	5
MAT 1150	Basic Calculus	3	0	3
Physics				
PHY 1110	College Physics I	3	0	3
PHY 1111	Physics Laboratory I	0	2	1
PHY 1120	College Physics II	3	0	3
PHY 1121	Physics Laboratory II	0	2	1
Social Science Elective				
	Social Science Elective	3	0	3
Computer Information Systems				
CIS 2215	BASIC Programming for Engineering Technologies	1	2	2
Automation-Robotics Technology				
ART 2510	Instrumentation and Automation Control Devices	3	2	4
ART 2710	Introduction to Automated Systems and Robots	3	3	4
ART 2810	Integrating and Troubleshooting Automated Systems	3	3	4
Computer Technology				
CPT 1400	Digital Circuits	2	2	3
CPT 2310	Microprocessor Principles	4	3	5
Electronic Engineering Technology				
EET 1110	Electric Circuits	4	2	5
EET 1210	Electronic Circuits	4	2	5
EET 2600	Automatic Control Systems	3	2	4
Mechanical Engineering Technology				
MET 1013	Technical Drawing	1	2	2
MET 2010	Hydraulics and Pneumatics	2	2	3
General Education Elective				
	*General Elective	3	0	3
	Total Required - Associate's Degree			72

*The General Elective may be any regular credit course. Continuing Education courses or other non-credit courses do not quale

AUTOMATION-ROBOTICS TECHNOLOGY

FIRST YEAR

Fall Semester		Cr.
ENG 1111	Composition I	3
MAT 1140	Technical Mathematics	5
CIS 2215	BASIC Programming for Engineering Technologies	2
EET 1110	Electric Circuits	5
	General Elective	3
Spring Semester		
MAT 1150	Basic Calculus	3
PHY 1110	College Physics I	3
PHY 1111	Physics Laboratory I	1
EET 1210	Electronic Circuits	5
CPT 1400	Digital Circuits	3
	Humanities Elective	3

SECOND YEAR

Fall Semester		Cr.
SPE 1111	Speech	3
PHY 1120	College Physics II	3
PHY 1121	Physics Laboratory II	1
ART 2510	Instrumentation and Automation Control Devices	4
MET 2010	Hydraulics and Pneumatics	3
ART 2710	Introduction to Automated Systems and Robots	4
Spring Semester		
CPT 2310	Microprocessor Principles	5
MET 1013	Technical Drawing	2
EET 2600	Automatic Control Systems	4
ART 2810	Integrating and Troubleshooting Automated Systems	4
	Social Science Elective	3

AUTOMATION-ROBOTICS TECHNOLOGY
RECOMMENDED PART-TIME EVENING SCHEDULE

FIRST YEAR

Fall Semester		Cr.
MAT 1140	Technical Mathematics	5
	General Elective	3
Spring Semester		
CIS 2215	BASIC Programming for Engineering Technologies	2
EET 1110	Electric Circuits	5
Summer Semester		
ENG 1111	Composition I	3
PHY 1110	College Physics I	3
PHY 1111	Physics Laboratory I	1

SECOND YEAR

Fall Semester		Cr.
EET 1210	Electronic Circuits	5
CPT 1400	Digital Circuits	3
Spring Semester		
MAT 1150	Basic Calculus	3
CPT 2310	Microprocessor Principles	5
Summer Semester		
PHY 1120	College Physics II	3
PHY 1121	Physics Laboratory II	1

THIRD YEAR

Fall Semester		Cr.
ART 25 10	Instrumentation and Automation Control Devices	4
ART 2710	Introduction to Automated Systems and Robots	4
Spring Semester		
EET 2600	Automatic Control Systems	4
MET 2010	Hydraulics and Pneumatics	3
Summer Semester		
	Humanities Elective	3
	Social Science Elective	3

FOURTH YEAR

Fall Semester		Cr.
SPE 1111	Speech	3
MET 1013	Technical Drawing	2
Spring Semester		
ART 2810	Integrating and Troubleshooting Automated Systems	4

Cooperative Education work experience in Automation Robotics Technology can be an important addition to a student's formal classroom work. Co-op courses, if appropriate, may substitute for technical courses up to 9 credit hours with the prior approval of the department head. All Co-op work must have department head approval. The Co-op office will provide the correct course numbers. Students participating in Cooperative Education are encouraged to work a minimum of two terms. See page 103 for more information.

AUTOMOTIVE SERVICE TECHNOLOGY

Associate of Applied Science

The Automotive Service Technology program prepares students to work in area automotive dealerships or repair shops.

There are three different groups of directed electives for the program, depending on the sponsoring dealership or repair shop:

1. Automotive Service Educational Program (ASEP) in cooperation with General Motors;
2. Automotive Student Service Educational Training Program (ASSET) in cooperation with Ford Motor Company; and
3. Automotive Training Educational Program (ATEP) in cooperation with Toyota Motors of America and selected other local dealerships.

This program alternates periods of formal training with periods of on-the-job experience at participating dealerships. These periods in the dealership are designed to provide practical experience as reinforcement of concepts taught during the school terms. Students must maintain sponsorship with participating dealerships during the entire training period. Nashville Tech assists students in obtaining sponsorship.

This program is conducted in response to local training needs and, therefore, may not necessarily begin each year. For further information, please contact Bill Maxwell (353-3457) or Gene Crook (353-3460).

AUTOMOTIVE SERVICE TECHNOLOGY
COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
SPE 1111	Speech	3	0	3
Humanities Elective				
	Humanities Elective	3	0	3
Mathematics				
MAT 1140	Technical Mathematics	5	0	5
Physics				
PHY 1010	UTC Physics I	3	0	3
PHY 1011	UTC Physics Laboratory I	0	2	1
PHY 1020	UTC Physics II	3	0	3
PHY 1021	UTC Physics Laboratory II	0	2	1
Social Science Elective				
	Social Science Elective	3	0	3
Core Courses				
Automotive Service Technology				
AMT 1110	Automotive Service	1	3	2
AMT 1122	Standard Transmissions / Drive Lines / Differentials	2	3	3
AMT 1124	Automotive Brakes	2	2	3
AMT 1126	Suspension and Steering	2	2	3
AMT 1310	Automotive Engines I	3	4	5
AMT 1320	GM Automotive Engines	2	3	3
AMT 2120	Automatic Transmissions I	2	3	3
AMT 2210	Automatic Transmissions II	2	3	3
AMT 2215	Ford Automatic Transmissions II	1	3	2
AMT 2310	Fuel and Emissions	2	3	3
AMT 2315	Ford Fuel and Emissions	1	3	2
AMT 2320	Automotive Update	1	0	1
AMT 2330	Climate Control	3	2	4

Directed Electives

ASEP

EET 1190	GM Automotive Electricity I	3	3	4
EET 1290	GM Automotive Electricity II	2	3	3
EET 2190	GM Advanced Electronics	2	2	3
EET 2290	GM Automotive Computer Systems I	2	3	3
EET 2295	GM Automotive Computer Systems II	2	3	3

ASSET

AMT 1220	Ford Electrical Systems	3	2	4
AMT 2110	Ford Electronic Systems/Computers	3	2	4
AMT 2220	Ford Engines II	1	2	2
AMT 2250	Diesel Engine Operations	1	2	2
AMT 2340	Ford Engine Analysis and Tune-up	3	2	4
AMT 2360	Ford Automotive Project	2	0	2

ATEP

AMT 2225	Automotive Engines II	1	2	2
AMT 2345	Engine Performance and Testing	0	2	1
AMT 2350	Developmental Project	2	0	2
EET 1192	Automotive Electricity	3	2	4
EET 2192	Automotive Electronics	3	2	4
EET 2292	Automotive Computer Systems	2	2	3

General Education Elective

	*General Elective	3	0	3
	Total Required - Associate's Degree			**71**

The General Elective may be any regular credit course. Continuing Education courses or other non-credit courses do not apply.

ASEP

FIRST YEAR

Fall Semester		**Cr.**
ENG 1111	Composition I	3
MAT 1140	Technical Mathematics	5
AMT 1110	Automotive Service	2
EET 1190	GM Automotive Electricity I	4
	Co-op	1
Spring Semester		
SPE 1111	Speech	3
AMT 1124	Automotive Brakes	3
AMT 1126	Suspension and Steering	3
	Humanities Elective	3
	Co-op	1
Summer Semester		
AMT 1122	Standard Transmissions/ Drive Lines/Differentials	3
AMT 2330	Climate Control	4
EET 1290	GM Automotive Electricity II	3
	Social Science Elective	3
	Co-op	1

SECONDYEAR

Fall Semester		**Cr.**
PHY 1010	UTC Physics I	3
PHY 1011	UTC Physics Laboratory I	1
AMT 2120	Automatic Transmissions I	3
	Co-op	1
Spring Semester		
PHY 1020	UTC Physics II	3
PHY 1021	UTC Physics Laboratory II	1
AMT 1320	GM Automotive Engines I	3
	General Elective	3
	Co-op	1
Summer Semester		
EET 2290	GM Automotive Computer Systems I	3
AMT 2210	Automatic Transmissions II	3
AMT 2310	Fuel and Emissions.	3
AMT 2320	Automotive Update	1

ASSET

FIRST YEAR

Fall Semester		Cr.
ENG 1111	Composition I	3
MAT 1140	Technical Mathematics	5
AMT 1110	Automotive Service	2
AMT 1220	Ford Electrical Systems	4
Spring Semester		
SPE 1111	Speech	3
AMT 1310	Automotive Engines I	5
AMT 2110	Ford Electronic Systems/ Computers	4
	Humanities Elective	3
Summer Semester		
AMT 1124	Automotive Brakes	3
AMT 2330	Climate Control	4
	Social Science Elective	3

SECONDYEAR

Fall Semester		Cr.
PHY 1010	UTC Physics I	3
PHY 1011	UTC Physics Laboratory I	1
AMT 1126	Suspension and Steering	3
AMT 2220	Ford Engines II	2
Spring Semester		
PHY 1020	UTC Physics II	3
PHY 1021	UTC Physics Laboratory II	1
AMT 1122	Standard Transmissions/ Drive Lines/Differentials	3
AMT 2120	Automatic Transmission I	3
Summer Semester		
AMT 2215	Ford Automatic Transmissions II	2
AMT 2315	Ford Fuel and Emissions	2
AMT 2340	Engine Performance	4
AMT 2250	Diesel Engine Operations	2
	General Elective	3

ATEP

FIRST YEAR

Fall Semester		Cr.
ENG 1111	Composition I	3
MAT 1140	Technical Mathematics	5
AMT 1110	Automotive Service	2
EET 1192	Automotive Electricity	4
Spring Semester		
SPE 1111	Speech	3
AMT 1124	Automotive Brakes	3
AMT 1126	Suspension and Steering	3
	Humanities Elective	3
Summer Semester		
AMT 1122	Standard Transmissions/ Drive Lines/Differentials	3
AMT 2330	Climate Control	4
	Social Science Elective	3

SECONDYEAR

Fall Semester		Cr.
PHY 1010	UTC Physics I	3
PHY 1011	UTC Physics Laboratory I	1
AMT 2120	Automatic Transmissions I	3
EET 2192	Automotive Electronics	4
Spring Semester		
PHY 1020	UTC Physics II	3
PHY 1021	UTC Physics Laboratory II	1
AMT 1310	Automotive Engines I	5
EET 2292	Automotive Computer Systems	3
Summer Semester		
AMT 2215	Ford Automatic Transmissions II	2
AMT 2225	Automotive Engines II	2
AMT 2315	Ford Fuel and Emissions	2
AMT 2320	Automotive Update	1
AMT 2345	Engine Performance and Testing	1
AMT 2350	Developmental Project	1
	General Elective	3

BUSINESS MANAGEMENT

Associate of Applied Science

The goal of the Business Management Associate's degree program is to teach business technicians at the two-year college level to enter the business field possessing the managerial and technical skills necessary to perform in entry-level management positions in large and small companies. It is the intent of the Business Management program that graduates:

1. Understand how to develop and maintain an organization's management program that effectively and efficiently maximizes organizational resources.
2. Possess basic business management skills in the areas of accounting, computers, economics, marketing, banking, management, team building, and business law.
3. Be able to apply basic business mathematics skills.
4. Communicate effectively in written form and orally.
5. Meet, if not exceed, exit exam scores made by business management graduates in two-year colleges in Tennessee.
6. Find employment in their major field of study with a minimum yearly placement rate of 75 percent.

Concepts taught in General Education courses will be reinforced in the Business Management curriculum and applied to class exercises and projects.

This program contains two concentrations: Financial Services Management and Small Business Administration.

Financial Services Management: Banking

Finance is a dynamic field in which dramatic economic and legal changes are challenging the traditions of all financial institutions. The Financial Services Management: Banking; program trains graduates to function in this changing environment.

The curriculum provides the student with firm foundations in accounting principles, the U.S. monetary system, and the credit granting process. English and social science courses provide a valuable broadening experience which prepares graduates to effectively communicate with peers and customers. Typical jobs available for graduates include **clerks, tellers, operations supervisors, bank bookkeepers, administrative assistants, and credit investigators.** Financial Services Management also offers degree programs in cooperation with the banking industry (AIB) and the insurance industry (CPCU). These evening programs are offered primarily at off-campus locations. AIB and CPCU catalogs are available upon request.

BUSINESS MANAGEMENT
(Financial Services Management: Banking Concentration)
COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
SPE 1111	Speech	3	0	3
Humanities Elective				
	Humanities Elective	3	0	3
Mathematics				
MAT 1110	Business Mathematics	3	0	3
Natural Science/Mathematics Elective				
	Natural Science or Math Elective	3	0	3
Social Science				
SOC 2111	Human Relations	3	0	3
Technical Core				
ECO 1111	Principles of Macroeconomics	3	0	3
ACC 1104	Principles of Accounting I	4	0	4
ACC 1105	Principles of Accounting II	4	0	4
AIS 1138	Microcomputer Software for Business	4	0	4
AIS 1180	Introduction to Microcomputing	2	2	3
BUS 2600	Business Law: Contracts	3	0	3
MKT 2220	Marketing	3	0	3
Technical Specialty				
BNK 1110	Principles of Banking	3	0	3
BNK 1210	Consumer Lending	3	0	3
BNK 1215	Commercial Bank Management	3	0	3
BNK 2110	Money and Banking	3	0	3
BNK 2115	Negotiable Instruments	3	0	3
BNK 2210	The Trust Business	3	0	3
BNK 2230	Investment Basics	3	0	3
Technical Elective				
	BUS, MKT, ECO Course	3	0	3
General Education Elective				
	*General Elective	3	0	3
	Total Required - Associate's Degree			**69**

*The General Elective may be any regular credit course. Continuing Education or other non-credit courses do not qualify.

BUSINESS MANAGEMENT
(Financial Services Management: Banking Concentration)

FIRST YEAR

Fall Semester		Cr.
ENG 1111	Composition I	3
MAT 1110	Business Mathematics	3
ACC 1104	Principles of Accounting I	4
BNK 1110	Principles of Banking	3
AIS 1180	Introduction to Microcomputing	3
Spring Semester		
ECO 1111	Principles of Macroeconomics	3
ACC 1105	Principles of Accounting II	4
AIS 1138	Microcomputer Software for Business	4
BNK 1210	Consumer Lending	3
BNK 1215	Commercial Bank Management	3

SECONDYEAR

Fall Semester		Cr.
SOC 2111	Human Relations	3
BUS 2600	Business Law: Contracts	3
BNK 2110	Money and Banking	3
BNK 2230	Investment Basics	3
	General Elective	3
	Natural Science Elective **or** Math Elective	3
Spring Semester		
SPE 1111	Speech	3
MKT 2220	Marketing	3
BNK 2115	Negotiable Instruments	3
BNK 2210	The Trust Business	3
	Humanities Elective	3
	Technical Elective	3

BUSINESS MANAGEMENT
(Financial Services Management: Banking Concentration)
RECOMMENDED PART-TIME EVENING SCHEDULE

FIRST YEAR

Fall Semester		Cr.
ENG 1111	Composition I	3
BNK 1110	Principles of Banking	3
Spring Semester		
BNK 1210	Consumer Lending	3
ECO 1111	Principles of Macroeconomics	3
Summer Semester		
MAT 1110	Business Mathematics	3

THIRD YEAR

Fall Semester		Cr.
BNK 2110	Money and Banking	3
	Natural Science Elective or Math Elective	3
Spring Semester		
BNK 2210	Trust Business	3
BUS 2600	Business Law: Contracts	3
Summer Semester		
AIS 1180	Introduction to Microcomputing	3
SOC 2111	Human Relations	3

SECOND YEAR

Fall Semester		Cr.
ACC 1104	Principles of Accounting I	4
	General Elective	3
Spring Semester		
ACC 1105	Principles of Accounting II	4
BNK 1215	Commercial Bank Management	3
Summer Semester		
SPE 1111	Speech	3
	Humanities Elective	3

FOURTH YEAR

Fall Semester		Cr.
AIS 1138	Microcomputer Software for Business	4
BNK 2230	Investment Basics	3
Spring Semester		
BNK 2115	Negotiable Instruments	3
MKT 2220	Marketing	3
Summer Semester		
	Technical Elective	3

Cooperative Education work experience in Business Management (Financial Services Management: Banking Concentration) can be an important addition to a student's formal classroom work. Co-op courses, if appropriate, may substitute for technical courses up to 9 credit hours with the prior approval of the department head. Ail Co-op work must have department head approval. The Co-op office will provide the correct course numbers. Students participating in Cooperative Education are encouraged to work a minimum of two terms. See page 103 for more information.

Small Business Administration

The Small Business Administration emphasis was designed for students who seek employment in either large or small organizations. Skills which are appropriate for small organizations can be used by employees in large organizations who wish to upgrade skills to use within the company for which they work. The program will be helpful to those people who wish to own and operate a business.

The Small Business Administration program provides knowledge and skills sufficient to allow a person to be employed in a wide variety of service, merchandising, and manufacturing organizations. The graduate will have an understanding of business law, accounting, microcomputer applications, payroll information, personnel policies, consumer credit policies, money and banking, insurance, and sales needed in diverse information environments. Marketing and management information and theory provide the ability to understand and use human relations skills.

Graduates will be prepared to seek employment in retail, wholesale and manufacturing offices which use microcomputers for producing financial statements and inventory control, and service industry organizations. Typical job titles include, but are not limited to, **store/office manager, customer service representative, management trainee, director of sales and marketing, project manager, distribution manager, assistant credit manager, purchasing agent, and assistant personnel manager.**

BUSINESS MANAGEMENT
(Small Business Administration Concentration)
COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
SPE 1111	Speech	3	0	3
Humanities Elective				
	Humanities Elective	3	0	3
Mathematics				
MAT 1110	Business Mathematics	3	0	3
Natural Science/Mathematics Elective				
	Natural Science or Math Elective	3	0	3
Social Science				
SOC 2111	Human Relations	3	0	3
Technical Core				
ECO 1111	Principles of Macroeconomics or			
ECO 1121	Principles of Microeconomics	3	0	3
ACC 1104	Principles of Accounting I	4	0	4
ACC 1105	Principles of Accounting II	4	0	4
AIS 1138	Microcomputer Software for Business	4	0	4
AIS 1180	Introduction to Microcomputing	2	2	3
BUS 2600	Business Law: Contracts	3	0	3
MKT 2220	Marketing	3	0	3
Technical Specialty Requirements				
Banking				
BNK 1210	Consumer Lending	3	0	3
BNK 2110	Money and Banking	3	0	3
Business Management				
BUS 1113	Introduction to Business	3	0	3
BUS 2250	Human Resource Management	3	0	3
BUS 2310	Business Ethics	3	0	3
BUS 2400	Principles of Management	3	0	3
MKT 1227	Sales Techniques	3	0	3

Business or Banking Technical Elective (select one course)

BNK	(any Banking course in addition to required courses)			
BUS 1262	Fundamentals of Business Insurance	3	0	3
BUS 1500	Entrepreneurship	3	0	3
BUS 2311	Leadership	3	0	3
BUS 2610	Business Law: Property and Commercial Organizations	3	0	3
ECO 1111	Principles of Macroeconomics	3	0	3
ECO 1121	Principles of Microeconomics	3	0	3
General Education Elective				
	*General Elective	3	0	3
	Total Required - Associate's Degree			**69**

*The General Elective may be any regular credit course. Continuing Education or other non-credit courses do not qualify.

BUSINESS MANAGEMENT
(Small Business Administration Concentration)

FIRST YEAR

Fall Semester		**Cr.**
ENG 1111	Composition I	3
MAT 1110	Business Mathematics	3
ACC 1104	Principles of Accounting I	4
BUS 1113	Introduction to Business	3
MKT 1227	Sales Techniques	3
Spring Semester		
SPE 1111	Speech	3
ACC 1105	Principles of Accounting II	4
BNK 1210	Consumer Lending	3
ECO 1111	Principles of Macroeconomics	
	or	
ECO 1121	Principles of Microeconomics	3
	Natural Science Elective	
	or	
	Math Elective	3
	General Elective	3

SECOND YEAR

Fall Semester		**Cr.**
SOC 2111	Human Relations	3
BNK 2110	Money and Banking	3
BUS 2250	Human Resource Management	3
BUS 2310	Business Ethics	3
BUS 2600	Business Law: Contracts	3
AIS 1180	Introduction to Microcomputing	3
Spring Semester		
AIS 1138	Microcomputer Software for Business	4
BUS 2400	Principles of Management	3
MKT 2220	Marketing	3
	Humanities Elective	3
	Technical Elective	3

BUSINESS MANAGEMENT
(Small Business Administration Concentration)
RECOMMENDED PART-TIME EVENING SCHEDULE

FIRST YEAR

Fall Semester		**Cr.**
SOC 2111	Human Relations	3
BUS 1113	Introduction to Business	3
Spring Semester		
BNK 1210	Consumer Lending	3
ECO 1111	Principles of Macroeconomics	
	or	
ECO 1121	Principles of Microeconomics	3
Summer Semester		
MAT 1110	Business Mathematics	3

SECOND YEAR

Fall Semester		**Cr.**
ACC 1104	Principles of Accounting I	4
MKT 1227	Sales Techniques	3
Spring Semester		
ENG 1111	Composition I	3
ACC 1105	Principles of Accounting II	4
Summer Semester		
SPE 1111	Speech	3
	Humanities Elective	3

THIRD YEAR

Fall Semester		**Cr.**
BNK 2110	Money and Banking	3
	Natural Science Elective	
	or	
	Math Elective	3
Spring Semester		
BUS 2310	Business Ethics	3
BUS 2600	Business Law: Contracts	3
Summer Semester		
AIS 1180	Introduction to Microcomputing	3
	General Elective	3

FOURTHYEAR

Fall Semester		**Cr.**
AIS 1138	Microcomputer Software for Business	4
BUS 2250	Human Resource Management	3
Spring Semester		
BUS 2400	Principles of Management	3
MKT 2220	Marketing	3
Summer Semester		
	Technical Elective	3

Cooperative Education work experience in Business Management (Small Business Administration Concentration) can be an important addition to a student's formal classroom work. Co-op courses, if appropriate, may substitute for technical courses up to 9 credit hours with the prior approval of the department head. All Co-op work must have department head approval. The Co-op office will provide the correct course numbers. Students participating in Cooperative Education are encouraged to work a minimum of two terms. See page 103 for more information.

CIVIL AND CONSTRUCTION ENGINEERING TECHNOLOGY

Associate of Applied Science

The courses in the program prepare the graduate for a variety of jobs in the office and on the site. Students receive practical instruction and hands-on experience with electronic surveying equipment, computers, and computer-aided drafting equipment, as well as traditional procedures. The student becomes knowledgeable of the design and building process.

Typical positions available to graduates include: drafters - who prepare maps and civil, structural, and environmental design drawings: computer-aided drafters - who develop maps and design drawings using computers: estimators - who prepare quantity and cost estimates for contractors and material suppliers: laboratory technicians - who test soil, rock, concrete, and other construction materials: surveyors - who perform boundary, topographic, and construction surveys: inspectors - who visit the site to test materials and determine if the work is carried out according to plans and specifications; assistant superintendents - who assist in checking shop drawings, ordering materials and laying out the structure: and detailers - who prepare shop drawings.

With additional experience graduates can assume more responsibility and become party chiefs, chief drafters, project managers, superintendents, and registered land surveyors.

CIVIL AND CONSTRUCTION ENGINEERING TECHNOLOGY COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
ENG 2112	Report Writing	3	0	3
SPE 1111	Speech	3	0	3
Humanities Elective				
	Humanities Elective	3	0	3
Mathematics				
MAT 1140	Technical Mathematics	5	0	5
MAT 1150	Basic Calculus	3	0	3
Physics				
PHY 1110	College Physics I	3	0	3
PHY 1111	Physics Laboratory I	0	2	1
PHY 1120	College Physics II	3	0	3
PHY 1121	Physics Laboratory II	0	2	1
Social Science Elective				
	Social Science Elective	3	0	3
Architectural Engineering Technology				
ACT 1432	Computer-Aided Drafting I	1	4	3
ACT 1530	Computer-Aided Drafting II	0	6	3
ACT 2440	Specifications and Estimating	2	2	3
industrial Engineering Technology				
IET 2120	Engineering Economy	3	0	3
Civil Engineering Technology				
CIT 1112	Board Drafting Basics	0	6	2
CIT 1150	Environmental Technology I	3	0	3
CIT 1220	Materials and Methods of Construction	3	0	3
CIT 1230	Testing of Materials	1	3	2
CIT 2110	Structural Mechanics	3	0	3
CIT 2130	Surveying I	2	3	3
CIT 2250	Environmental Technology II	2	2	3
CIT 2300	Site Design with CAD	1	6	3
CIT 2310	Surveying II	2	3	3
CIT 2400	Structural Design	3	0	3
General Education Elective				
	*General Elective	3	0	3
	Total Required - Associate's Degree			**74**

*The General Elective may be any regular credit course. Continuing Education courses or other non-credit courses do not qualify.

CML AND CONSTRUCTION ENGINEERING TECHNOLOGY

FIRST YEAR

Fall Semester		Cr.
ENG 1111	Composition I	3
MAT 1140	Technical Mathematics	5
CIT 1112	Board Drafting Basics	2
ACT 1432	Computer-Aided Drafting I	3
	Social Science Elective	3
	General Elective	3
Spring Semester		
ENG 2112	Report Writing	3
MAT 1150	Basic Calculus	3
CIT 1150	Environmental Technology I	3
CIT 1220	Materials and Methods of Construction	3
CIT 1230	Testing of Materials	2
ACT 1530	Computer-Aided Drafting II	3

SECOND YEAR

Fall Semester		Cr.
SPE 1111	Speech	3
PHY 1110	College Physics I	3
PHY 1111	Physics Laboratory I	1
CIT 2110	Structural Mechanics	3
CIT 2130	Surveying I	3
CIT 2250	Environmental Technology II	3
IET 2120	Engineering Economy	3
Spring Semester		
PHY 1120	College Physics II	3
PHY 1121	Physics Laboratory II	1
CIT 2300	Site Design with CAD	3
CIT 2310	Surveying II	3
CIT 2400	Structural Design	3
ACT 2440	Specifications and Estimating	3
	Humanities Elective	3

CIVIL AND CONSTRUCTION ENGINEERING TECHNOLOGY RECOMMENDED PART-TIME EVENING SCHEDULE

FIRST YEAR

Fall Semester		Cr.
ENG 1111	Composition I	3
CIT 1112	Board Drafting Basics	2
Spring Semester		
MAT 1140	Technical Mathematics	5
CIT 1230	Testing of Materials	2
Summer Semester		
ENG 2112	Report Writing	3
	Social Science Elective	3

THIRD YEAR

Fall Semester		Cr.
CIT 1220	Materials and Methods of Construction	3
CIT 2130	Surveying1	3
Spring Semester		
CIT 2110	Structural Mechanics	3
CIT 2310	Surveying II	3
Summer Semester		
SPE 1111	Speech	3
IET 2120	Engineering Economy	3

SECOND YEAR

Fall Semester		Cr.
MAT 1150	Basic Calculus	3
ACT 1432	Computer-Aided Drafting I	3
Spring Semester		
PHY 1110	College Physics I	3
PHY 1111	Physics Laboratory I	1
CIT 1150	Environmental Technology I	3
Summer Semester		
ACT 1530	Computer-Aided Drafting II	3
	Humanities Elective	3

FOURTH YEAR

Fall Semester		Cr.
CIT 2250	Environmental Technology II	3
CIT 2400	Structural Design	3
Spring Semester		
PHY 1120	College Physics II	3
PHY 1121	Physics Laboratory II	1
CIT 2300	Site Design with CAD	3
Summer Semester		
ACT 2440	Specifications and Estimating	3
	General Elective	3

Cooperative Education work experience in Civil and Construction Engineering Technology can be an important addition to a student's formal classroom work. Co-op courses, if appropriate, may substitute for technical courses up to 5 credit hours with the prior approval of the department head. All Co-op work must have department head approval. The Co-op office will provide the correct course numbers. Students participating in Cooperative Education are encouraged to work a minimum of two terms. See page 103 for more information.

COMMUNICATIONS TECHNOLOGY

Associate of Applied Science

The evolving trend in distributed electronic information processing (voice, data, video) over different computer platforms, integrating traditional systems with other types of hardware devices, has created a need for employees with training that bridges the boundaries between the traditionally separate fields of computer software specialists and computer hardware specialists. The primary goal of the Communications Technology Associate's degree program is to train individuals to function as entry-level technicians in an environment where data/telecommunications equipment exists (or plans exist to install such equipment) and is utilized as an integral part of the organization's information processing systems and procedures.

Graduates of this program will be employed in areas in which a broad knowledge of computer operating systems protocol is required, as well as techniques for establishing ,physical connections between various computer platforms. Graduates will possess knowledge applicable to small firms utilizing stand-alone local area networks and to large firms utilizing distributed workgroups that are linked directly over a shared medium and/or indirectly through a host computer. Students will receive training in interconnecting computers of different platforms. They will be exposed to the various media used to make the connection at the target computer and to the operating system protocol that the target computer utilizes in order to recognize and communicate with other computers.

In addition to the technical skills that graduates of this program will possess, they will also possess verbal and written communication skills and mathematics skills. Humanities and social science courses are included in the program in order to ensure graduates have a broad range of discipline areas and interpersonal skills.

Typical positions available to graduates of the program include: communications service technician - installs and maintains various types of communications equipment with service occasionally provided at the customer site: communication network technician - installs and does initial and follow-up operational checks of various networking installations with work typically provided at customer sites; and repair (maintenance) technician - provides customer service repair response.

COMMUNICATIONS TECHNOLOGY
COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
SPE 1111	Speech	3	0	3
Humanities Elective				
	Humanities Elective	3	0	3
Mathematics				
MAT 1140	Technical Mathematics	5	0	5
MAT 2110	Statistics	3	0	3
Social Science Elective				
	Social Science Elective	3	0	3
Computer Information Systems				
CIS 2216	C Language for Engineering Technologies	1	2	2
CIS 2250	Micro Operating Systems and Networking	3	0	3
Electronic Engineering Technology				
EET 1130	Introduction to Electronics	4	2	5
Computer Technology				
CPT 1400	Digital Circuits	2	2	3
CPT 2425	Operating Systems II	3	3	4
Communications Technology				
CMT 1010	Survey of Communications Technology	3	0	3
CMT 1020	Operating Systems Theory	3	2	4

CMT 1110	Communications Equipment and Transmission Media	2	2	3
CMT 2010	Protocols and Topologies	3	0	3
CMT 2020	Digital Communication and Network Extensions	3	2	4
CMT 2110	Communication Network Analysis	2	2	3
CMT 2120	Network Management	2	2	3
CMT 2130	Applied Networking	1	2	2
Technical Electives				
	Technical Electives	6	0	6
General Education Elective				
	*General Elective	3	0	3
	Total Required - Associate's Degree			71

*The General Elective may be any regular credit course. Continuing Education courses or other non-credit courses do not quale

COMMUNICATIONS TECHNOLOGY

FIRST YEAR

Fall Semester		**Cr.**
MAT 1140	Technical Mathematics	5
EET 1130	Introduction to Electronics	5
CMT 1010	Survey of Communications Technology	3
CMT 1020	Operating Systems Theory	4
Spring Semester		
ENG 1111	Composition I	3
MAT 2110	Statistics	3
CIS 2216	C Language for Engineering Technologies	2
CPT 1400	Digital Circuits	3
CPT 2425	Operating Systems II	4
CMT 1110	Communications Equipment and Transmission Media	3

SECOND YEAR

Fall Semester		Cr.
SPE 1111	Speech	3
CMT 2010	Protocols and Topologies	3
CMT 2020	Digital Communications and Network Extensions	4
CIS 2250	Micro Operating Systems and Networking	3
	Technical Elective	3
	Humanities Elective	3
Spring Semester		
CMT 2110	Communications Network Analysis	3
CMT 2120	Network Management	3
CMT 2130	Applied Networking	2
	Technical Elective	3
	Social Science Elective	3
	General Elective	3

COMMUNICATIONS TECHNOLOGY
RECOMMENDED PART-TIME EVENING SCHEDULE

FIRST YEAR

Fall Semester		**Cr.**
MAT 1140	Technical Mathematics	5
CMT 1010	Survey of Communications Technology	3
Spring Semester		
EET 1130	Introduction to Electronics	5
CMT 1020	Operating Systems Theory	4
Summer Semester		
ENG 1111	Composition I	3
CIS 2216	C Language for Engineering Technologies	2
CPT 1400	Digital Circuits	3

SECONDYEAR

Fall Semester		**Cr.**
MAT 2110	Statistics	3
CPT 2425	Operating Systems II	4
Spring Semester		
SPE 1111	Speech	3
CIS 2250	Micro Operating Systems and Networking	3
CMT 1110	Communications Equipment and Transmission Media	3
Summer Semester		
	Humanities Elective	3
	Social Science Elective	3

THIRD YEAR

Fall Semester		**Cr.**
CMT, 2010	Protocols and Topologies	3
CMT 2020	Digital Communications and Network Extensions	4
Spring Semester		
CMT 2110	Communications Network Analysis	3
	Technical Elective	3
Summer Semester		
	General Elective	3

FOURTH YEAR

Fall Semester		**Cr.**
CMT 2130	Applied Networking	2
	Technical Elective	3
Spring Semester		
CMT 2120	Network Management	3

Cooperative Education work experience in Communications Technology can be an important addition to a student's formal classroom work. Co-op courses, if appropriate, may substitute for technical courses up to 7 credit hours with the prior approval of the department head. All Co-op work must have department head approval. The Co-op office will provide the correct course numbers. Students participating in Cooperative Education are encouraged to work a minimum of two terms. See page 103 for more information.

COMPUTER ACCOUNTING TECHNOLOGY

Associate of Applied Science

The Computer Accounting Technology program provides students with a broad-based core of accounting skills as well as a significant working knowledge of all areas of microcomputing. The microcomputer has been integrated into almost every course taken under both options. As technology changes, courses are updated. The Computer Accounting Technology program offers concentrations in Microcomputer Applications and Accounting Information Systems.

It is the intent of the Computer Information and Accounting Department that graduates of the Computer Accounting Technology program be able to:

- Function competently in entry-level accounting and information systems positions.
- Think creatively in solving accounting and information systems, as well as general business problems, generating well considered logic.
- Work effectively as an individual and in a team environment.
- Adjust rapidly to a specific microcomputer hardware/software environment.
- Develop database applications using current state-of-the-art microcomputer software.
- Develop complete spreadsheet systems including the design and implementation of user interfaces.
- Apply problem-solving and task management techniques to the design and implementation of software solutions in a microcomputer environment.
- Use mathematics concepts in the solving of accounting and microcomputer problems.
- Communicate successfully in a variety of settings using oral and writing skills.
- Use concepts taught in general education courses through reinforcement in the Computer Accounting Technology curriculum and application to class exercises and projects.

Typical jobs available for graduates include: junior accountant - records and checks transactions relating to payrolls, accounts payable, accounts receivable, cash payments, cash receipts, and other business operations; **accounting technician and systems analyst** - assist in the design, implementation, and maintenance of information systems: staff accountant - prepares tax returns, **bookkeeping, auditing, and microcomputer accounting in public accounting firms; microcomputer specialist** - works in any area of the microcomputing field, utilizing an in-depth knowledge of the use of spreadsheets, file managers, data base and other software to solve business problems.

NOTE: if you plan to transfer to a four-year program upon leaving Nashville Tech, consult the department head for a specialized program of study. Failure to do **so** could result in a loss of credits in the transfer process.

Accounting Information Systems Concentration

The Accounting Information Systems Concentration provides a solid background in accounting skills. This program of study is ideal for persons who already hold other degrees and are seeking to broaden their skills.

COMPUTER ACCOUNTING TECHNOLOGY
(Accounting Information Systems Concentration)
COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
SPE 1111	Speech	3	0	3
Humanities Elective				
	Humanities Elective	3	0	3
Mathematics				
MAT 1120	College Algebra	3	0	3
MAT 2110	Statistics	3	0	3
Social Science Elective				
	Social Science Elective	3	0	3
Business Management				
BUS 2310	Business Ethics	3	0	3
Computer Information Systems				
CIS 1030	Program Logic and Design I	4	0	4
Computer Accounting and Accounting Information Systems				
ACC 1104	Principles of Accounting I	4	0	4
ACC 1105	Principles of Accounting II	4	0	4
ACC 2154	Intermediate Accounting I	4	0	4
ACC 2164	Intermediate Accounting II	4	0	4
ACC 2340	Cost and Managerial Accounting	4	0	4
ACC 2350	Taxation	3	0	3
ACC 2380	Microcomputer Accounting Applications	2	2	3
ACC 2740	Auditing	4	0	4
AIS 1138	Microcomputer Software for Business	4	0	4
AIS 1180	Introduction to Microcomputing	2	2	3
AIS 2600	Spreadsheet Problems	2	2	3
AIS 2840	Accounting Information Systems	4	0	4
General Education Elective				
	*General Elective	3	0	3
	Total Required - Associate's Degree			72

The General Elective may be any regular credit course. Continuing Education courses or other non-credit courses do not quale.

Cooperative Education work experience in Computer Accounting Technology (Accounting Information Systems Concentration) can be an important addition to a student's formai classroom work. Co-op courses, if appropriate, may substitute for technical courses up to 9 credit hours with the prior approval of the department head. AU Co-op work must have department head approval. The Co-op office will provide the correct course numbers. Students participating in Cooperative Education are encouraged to work a minimum of two terms. See page 103 for more information.

COMPUTER ACCOUNTING TECHNOLOGY
(Accounting Information Systems Concentration)

FIRST YEAR

Fall Semester			Cr.
ENG	1111	Composition **I**	3
MAT	1120	College Algebra	3
ACC	1104	Principles of Accounting I	4
AIS	1180	Introduction to Microcomputing	3
		Humanities Elective	3
		Social Science Elective	3
Spring Semester			
SPE	1111	Speech	3
MAT	2110	Statistics	3
CIS	1030	Program Logic and Design I	4
ACC	1105	Principles of Accounting II	4
AIS	1138	Microcomputer Software for Business	4

SECOND YEAR

Fall Semester			Cr.
ACC	2154	Intermediate Accounting I	4
ACC	2340	Cost and Managerial Accounting	4
ACC	2380	Microcomputer Accounting Applications	3
ACC	2740	Auditing	4
AIS	2600	Spreadsheet Problems	3
Spring Semester			
ACC	2164	Intermediate Accounting II	4
ACC	2350	Taxation	3
BUS	2310	Business Ethics	3
AIS	2840	Accounting Information Systems	4
		General Elective	3

IMPORTANT: Courses should be taken in the sequence indicated in order to ensure graduation on schedule.

COMPUTER ACCOUNTING TECHNOLOGY
(Accounting Information Systems Concentration)
RECOMMENDED PART-TIME EVENING SCHEDULE

FIRST YEAR

Fall Semester			Cr.
ENG	1111	Composition I	3
ACC	1104	Principles of Accounting I	4
AIS	1180	Introduction to Microcomputing	3
Spring Semester			
MAT	1120	College Algebra	3
ACC	1105	Principles of Accounting II	4
AIS	1138	Microcomputer Software for Business	4
Summer Semester			
ACC	2340	Cost and Managerial Accounting	4

SECOND YEAR

Fall Semester			Cr.
AIS	2600	Spreadsheet Problems	3
ACC	2154	Intermediate Accounting I	4
Spring Semester			
MAT	2110	Statistics	3
ACC	2164	Intermediate Accounting II	4
Summer Semester			
ACC	2740	Auditing	4

THIRD YEAR

Fall Semester			Cr.
SPE	1111	Speech	3
AIS	2840	Accounting Information Systems	4
Spring Semester			
ACC	2380	Microcomputer Accounting Applications	3
		Social Science Elective	3
Summer Semester			
		Humanities Elective	3

FOURTH YEAR

Fall Semester			Cr.
CIS	1030	Program Logic and Design I	4
ACC	2350	Taxation	3
Spring Semester			
BUS	2310	Business Ethics	3
		General Elective	3

Microcomputer Applications Concentration

The Microcomputer Applications Concentration has been designed using broad input from the Nashville business community. The skills included are those which are needed today and which will provide the basic skills to expand as the technologies grow and change tomorrow

COMPUTER ACCOUNTING TECHNOLOGY (Microcomputer Applications Concentration) COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
SPE 1111	Speech	3	0	3
Humanities Elective				
	Humanities Elective	3	0	3
Mathematics				
MAT 1120	College Algebra	3	0	3
MAT 2110	Statistics	3	0	3
Social Science Elective				
	Social Science Elective	3	0	3
Business Management				
BUS 2310	Business Ethics	3	0	3
Computer information Systems				
CIS 1030	Program Logic and Design I	4	0	4
CIS 2250	Micro Operating Systems and Networking	3	0	3
Computer Accounting and Accounting information Systems				
ACC 1104	Principles of Accounting I	4	0	4
ACC 1105	Principles of Accounting II	4	0	4
ACC 2340	Cost and Managerial Accounting	4	0	4
AIS 1180	Introduction to Microcomputing	2	2	3
AIS 1138	Microcomputer Software for Business	4	0	4
AIS 2600	Spreadsheet Problems	2	2	3
AIS 2680	Seminar in Current Microcomputer Topics	4	0	4
AIS 2700	Windows Software	4	0	4
AIS 2840	Accounting Information Systems	4	0	4
AIS 2850	Troubleshooting	4	0	4
AIS 2900	Visual Basic for Applications	3	0	3
General Education Elective				
	*General Elective	3	0	3
	Total Required - Associate's Degree			**72**

*The General Elective may be any regular credit course. Continuing Education courses or other non-credit courses do not qualify.

Cooperative Education work experience in Computer Accounting Technology (Microcomputer Applications Concentration) can be an important addition to a student's formal classroom work. Co-op courses, if appropriate, may substitute for technical courses up to 9 credit hours with the prior approval of the department head. All Co-op work must have department head approval. The Co-op office will provide the correct course numbers. Students participating in Cooperative Education are encouraged to work a minimum of two terms. See page 103 for more information.

COMPUTER ACCOUNTING TECHNOLOGY
(Microcomputer Applications Concentration)

FIRST YEAR

Fall Semester			Cr.
ENG	1111	Composition I	3
MAT	1120	College Algebra	3
ACC	1104	Principles of Accounting I	4
AIS	1180	Introduction to Microcomputing	3
		Social Science Elective	3
Spring Semester			
SPE	1111	Speech	3
MAT	2110	Statistics	3
CIS	1030	Program Logic and Design I	4
ACC	1105	Principles of Accounting II	4
AIS	1138	Microcomputer Software for Business	4

SECONDYEAR

Fall Semester			Cr.
CIS	2250	Micro Operating Systems and Networking	3
AIS	2700	Windows Software	4
ACC	2340	Cost and Managerial Accounting	4
AIS	2900	Visual Basic for Applications	3
		Humanities Elective	3
		General Elective	3
Spring Semester			
AIS	2600	Spreadsheet Problems	3
AIS	2680	Seminar in Current Microcomputer Topics	4
BUS	2310	Business Ethics	3
AIS	2840	Accounting Information Systems	4
AIS	2850	Troubleshooting	4

IMPORTANT: Courses should be taken in the sequence indicated in order to ensure graduation on schedule.

COMPUTER ACCOUNTING TECHNOLOGY
(Microcomputer Applications Concentration)
RECOMMENDED PART-TIME EVENING SCHEDULE

FIRST YEAR

Fall Semester			Cr.
ENG	1111	Composition I	3
ACC	1104	Principles of Accounting I	4
AIS	1180	Introduction to Microcomputing	3
Spring Semester			
MAT	1120	College Algebra	3
ACC	1105	Principles of Accounting II	4
		Social Science Elective	3
Summer Semester			
AIS	1138	Microcomputer Software for Business	4

THIRDYEAR

Fall Semester			Cr.
AIS	2900	Visual Basic for Applications	3
CIS	2250	Micro Operating Systems and Networking	3
Spring Semester			
BUS	2310	Business Ethics	3
MAT	2110	Statistics	3
Summer Semester			
		Humanities	3

SECOND YEAR

Fall Semester			Cr.
SPE	1111	Speech	3
AIS	2600	Spreadsheet Problems	3
Spring Semester			
CIS	1030	Program Logic and Design I	4
AIS	2700	Windows Software	4
Summer Semester			
ACC	2340	Cost and Managerial Accounting	4

FOURTH YEAR

Fall Semester			Cr.
AIS	2840	Accounting Information Systems	4
		General Elective	3
Spring Semester			
AIS	2680	Seminar inCurrent Microcomputer Topics	4
AIS	2850	Troubleshooting	4

COMPUTER INFORMATION SYSTEMS

Associate of Applied Science

Computer Information' Systems trains entry-level computer programmers and systems analysts. The solution to practical business problems is emphasized in the training. All courses are practical, not theoretical. Each graduate has written, tested, and debugged programs in all of the major programming languages. Each graduate has also developed a practical business system, studied communications systems and programming, and has knowledge of different operating systems and hardware.

It is the intent of the Computer Information and Accounting Department that graduates of the Computer Information Systems program be able to:

- Function competently in entry-level programmer/analyst positions.
- Think creatively in solving problems, generating well-considered logic.
- Work effectively as an individual and in a team environment.
- Adjust rapidly to a specific systems hardware/software environment.
- Develop database applications using current interfaces with procedural and object-onented languages.
- Apply problem-solving and task management techniques to solve organizational computer applications.
- Use mathematics concepts in research, design, programming, and debugging business-related applications.
- Communicate successfully in a variety of settings using oral and written skills.
- Use concepts taught in general education courses through reinforcement in the Computer Information Systems curriculum and application to class exercises and projects.

All students utilize both mainframe and microcomputers during the two-year program. However, a concentration in either microcomputers or mainframes is chosen after the first year. Students may complete both options if desired.

A communications link to the campus mainframe is available for students who have access to a personal computer at home or work.

COMPUTER INFORMATION SYSTEMS
(Mainframe Concentration)
COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
SPE 1111	Speech	3	0	3
Humanities				
PHI 1111	Introduction to Ethics	3	0	3
Mathematics				
MAT 1160	Finite Mathematics	3	0	3
MAT 2110	Statistics	3	0	3
Social Science Elective				
	Social Science Elective	3	0	3
Computer Accounting Technology				
ACC 1104	Principles of Accounting I	4	0	4
ACC 1105	Principles of Accounting II	4	0	4
Computer Information Systems				
CIS 1010	Introduction to Electronic Data Processing	3	0	3
CIS 1020	Computing Environments	3	0	3
CIS 1030	Program Logic and Design I	4	0	4
CIS 1120	Assembler Language Programming	4	0	4
CIS 2010	ANS COBOL Programming	4	0	4
CIS 2110	Systems Design and Development	3	0	3

CIS	2120	Operating Systems	3	0	3
CIS	2130	RPG Programming	3	0	3
CIS	2140	ANS COBOL Applications	5	0	5
CIS	2150	Introduction to CICS Programming	4	0	4
CIS	2160	Data Base Programming	4	0	4
		CIS Elective	3	0	3
General Education Elective					
		*General Elective	3	0	3
		Total Required - Associate's Degree			72

*The General Elective may be any regular credit course. Continuing Education courses or other non-credit courses do not qualify.

Cooperative Education work experience in Computer Information Systems (Mainframe Concentration) can be an important addition to a student's formal classroom work. Co-op courses, if appropriate, may substitute for technical courses up to 9 credit hours with the prior approval of the department head. All Co-op work must have department head approval. The Co-op office will provide the correct course numbers. Students participating in Cooperative Education are encouraged to work a minimum of two terms. See page 103 for more information.

COMPUTER INFORMATION SYSTEMS (Mainframe Concentration)

FIRST YEAR

Fall Semester			Cr.
ENG	1111	Composition I	3
MAT	1160	Finite Mathematics	3
ACC	1104	Principles of Accounting I	4
CIS	1010	Introduction to Electronic Data Processing	3
CIS	1020	Computing Environments	3
CIS	1030	Program Logic and Design I	4
Spring Semester			
PHI	1111	Introduction to Ethics	3
ACC	1105	Principles of Accounting II	4
CIS	1120	Assembler Language Programming	4
		CIS Elective	3
		Social Science Elective	3

SECOND YEAR

Fall Semester			**Cr.**
MAT	2110	Statistics	3
SPE	1111	Speech	3
CIS	2010	ANS COBOL Programming	4
CIS	2120	Operating Systems	3
CIS	2130	FPG Programming	3
Spring Semester			
CIS	2110	Systems Design and Development	3
CIS	2140	ANS COBOL Applications	5
CIS	2150	Introduction to CICS Programming	4
CIS	2160	Data Base Programming	4
		General Elective	3

COMPUTER INFORMATION SYSTEMS
(Mainframe Concentration)
RECOMMENDED PART-TIME EVENING SCHEDULE

FIRST YEAR

Fall Semester		Cr.
CIS 1010	Introduction to Electronic Data Processing	3
CIS 1020	Computing Environments	3
Spring Semester		
ACC 1104	Principles of Accounting I	4
CIS 1030	Program Logic and Design I	4
Summer Semester		
ENG 1111	Composition I	3
MAT 1160	Finite Mathematics	3

SECOND YEAR

Fall Semester		Cr.
ACC 1105	Principles Accounting II	4
CIS 1120	Assembler Language Programming	4
Spring Semester		
	CIS Elective	3
	Social Science Elective	3
Summer Semester		
PHI 1111	Introduction to Ethics	3
MAT 2110	Statistics	3

THIRDYEAR

Fall Semester		Cr.
CIS 2120	Operating Systems	3
CIS 2010	ANS COBOL Programming	4
Spring Semester		
CIS 2140	ANS COBOL Applications	5
SPE 1111	Speech	3
Summer Semester		
	General Elective	3

FOURTH YEAR

Fall Semester		Cr.
CIS 2150	Intro to CICS Programming	4
CIS 2160	Data Base Programming	4
Spring Semester		
CIS 2110	Systems Design and Development	3
CIS 2130	RPG Programming	3

COMPUTER INFORMATION SYSTEMS
(Microcomputer Concentration)
COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
SPE 1111	Speech	3	0	3
Humanities				
PHI 1111	Introduction to Ethics	3	0	3
Mathematics				
MAT 1160	Finite Mathematics	3	0	3
MAT 2110	Statistics	3	0	3
Social Science Elective				
	Social Science Elective	3	0	3
Computer Accounting Technology				
ACC 1104	Principles of Accounting I	4	0	4
ACC 1105	Principles of Accounting II	4	0	4
Computer Information Systems				
CIS 1010	Introduction to Electronic Data Processing	3	0	3
CIS 1020	Computing Environments	3	0	3
CIS 1030	Program Logic and Design I	4	0	4
CIS 1120	Assembler Language Programming	4	0	4
CIS 1130	PASCAL	3	0	3
CIS 2010	ANS COBOL Programming	4	0	4
CIS 2217	Visual BASIC	4	0	4
CIS 2220	C Language Programming	4	0	4
CIS 2221	C++ Programming	3	0	3
CIS 2230	dBase Programming	3	0	3
CIS 2240	Micro Systems Design Project	3	0	3
CIS 2250	Micro Operating Systems and Networking	3	0	3
CIS 2270	Advanced Micro Concepts	3	0	3
General Education Elective				
	*General Elective	3	0	3
	Total Required - Associate's Degree			**73**

The General Elective may be any regular credit course. Continuing Education courses or other non-credit courses do not qualify.

COMPUTER INFORMATION SYSTEMS
(Microcomputer Concentration)

FIRST YEAR

Fall Semester		**Cr.**
ENG 1111	Composition I	3
MAT 1160	Finite Mathematics	3
ACC 1104	Principles of Accounting I	4
CIS 1010	Introduction to Electronic Data Processing	3
CIS 1020	Computing Environments	3
CIS 1030	Program Logic and Design I	4
Spring Semester		
PHI 1111	Introduction to Ethics	3
ACC 1105	Principles Accounting II	4
CIS 1120	Assembler Language Programming	4
CIS 1130	PASCAL	3
	Social Science Elective	3

SECONDYEAR

Fall Semester		**Cr.**
MAT 2110	Statistics	3
CIS 2010	ANS COBOL Programming	4
CIS 2220	C Language Programming	4
CIS 2230	dBase Programming	3
CIS 2270	Advanced Micro Concepts	3
Spring Semester		
SPE 1111	Speech	3
CIS 2221	C++ Programming	3
CIS 2240	Micro Systems Design Project	3
CIS 2250	Micro Operating Systems and Networking	3
CIS 2217	Visual BASIC	4
	General Elective	3

COMPUTER INFORMATION SYSTEMS
(Microcomputer Concentration)
RECOMMENDED PART-TIME EVENING SCHEDULE

FIRST YEAR

Fall Semester			Cr.
CIS	1010	Introduction to Electronic Data Processing	3
CIS	1020	Computing Environments	3
Spring Semester			
ACC	1104	Principles of Accounting I	4
CIS	1030	Program Logic and Design I	4
Summer Semester			
ENG	1111	Composition I	3
MAT	1160	Finite Mathematics	3

SECOND YEAR

Fall Semester			Cr.
ACC	1105	Principles of Accounting II	4
CIS	1120	Assembler Language Programming	4
Spring Semester			
CIS	1130	PASCAL	3
		Social Science Elective	3
Summer Semester			
PHI	1111	Introduction to Ethics	3
MAT	2110	Statistics	3

THIRD-YEAR

Fall Semester			Cr.
CIS	2230	dBase Programming	**3**
CIS	2270	Advanced Micro Concepts	3
Spring Semester			
CIS	2220	C Language Programming	4
CIS	2010	ANS COBOL Programming	4
Summer Semester			
SPE	1111	Speech	3
		General Elective	3

FOURTH YEAR

Fall Semester			Cr.
CIS	2221	C++ Programming	3
CIS	2217	Visual BASIC	4
Spring Semester			
CIS	2250	Micro Operating Systems and Networking	3
CIS	2240	Micro Systems Design Project	3

Cooperative Education work experience in Computer Information Systems (Microcomputer Concentration) can be an important addition to a student's formal classroom work. Co-op courses, if appropriate, may substitute for technical courses up to 6 credit hours with the prior approval of the department head. Ali Co-op work must have department head approval. The Co-op office will provide the correct course numbers. Students participating in Cooperative Education are encouraged to work a minimum of two terms. See page 103 for more information.

COMPUTER TECHNOLOGY

Assdate of Applied Science

Electronic computers are rapidly becoming the heart of business, manufacturing, and service organizations. The goal of this program is to train men and women as computer technicians. Students become proficient in the operating principles, installation and maintenance of a variety of digital computers, concentrating on the microcomputer and various operating systems and networks.

The program emphasizes digital techniques, computer software and hardware, peripheral devices, telecommunications, operating systems, and systematic troubleshooting. Laboratory work enhances course material and gives the student vital hands-on job skills. The program includes the necessary mathematics, physics, electronics and communications skills needed as a basis for specialization.

Typical positions available to graduates of this program are: service technician - configures hardware and software and installs, upgrades and maintains computers and their related peripheral equipment; technical sales support employee - helps design custom computer systems based on specific customer requirements; and engineering aide - works with engineers in the design and development of computer controlled equipment and devices.

COMPUTER TECHNOLOGY
COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
SPE 1111	Speech	3	0	3
Humanities Elective				
	Humanities Elective	3	0	3
Mathematics				
MAT 1140	Technical Mathematics	5	0	5
MAT 1150	Basic Calculus	3	0	3
Physics				
PHY 1110	College Physics I	3	0	3
PHY 1111	Physics Laboratory I	0	2	1
PHY 1120	College Physics II	3	0	3
PHY 1121	Physics Laboratory II	0	2	1
Social Science Elective				
	Social Science Elective	3	0	3
Computer Information Systems				
CIS 2215	BASIC Programming for Engineering Technologies	1	2	2
Computer Technology				
CPT 1400	Digital Circuits	2	2	3
CFT 2310	Microprocessor Principles	4	3	5
CFT 2320	Telecommunications	2	2	3
CPT 2325	Operating Systems I	2	2	3
CPT 2410	Computer Peripherals	3	3	4
CPT 2425	Operating Systems II	3	3	4
CFT 2430	System Troubleshooting	2	4	4
Electronic Engineering Technology				
EET 1110	Electric Circuits	4	2	5
EET 1210	Electronic Circuits	4	2	5
Technical Electives* (3 credits required)				
ART 2510	Instrumentation and Automation Control Devices	3	2	4
CPT 2440	Digital Design/Construction Project	0	2	1
EET 2110	Industrial Electronics	4	2	5
MET 1013	Technical Drawing	1	2	2
General Education Elective				
	**General Elective	3	0	3
	Total Required - Associate's Degree			**72**

*Other courses may be substituted for technical electives with the department head and division head approval.

**The General Elective may be any regular credit course. Continuing Education courses or other non-credit courses do not qualify.

COMPUTER TECHNOLOGY

FIRST YEAR

Fall Semester		Cr.
ENG 1111	Composition I	3
MAT 1140	Technical Mathematics	5
CIS 2215	BASIC Programming for Engineering Technologies	2
EET 1110	Electric Circuits	5
	General Elective	3
Spring Semester		
MAT 1150	Basic Calculus	3
PHY 1110	College Physics I	3
PHY 1111	Physics Laboratory I	1
EET 1210	Electronic Circuits	5
CPT 1400	Digital Circuits	3
	Humanities Elective	3

SECONDYEAR

Fall Semester		Cr.
SPE 1111	Speech	3
PHY 1120	College Physics II	3
PHY 1121	Physics Laboratory II	1
CPT 2310	Microprocessor Principles	5
CPT 2325	Operating Systems **I**	3
	Technical Elective	3
Spring Semester		
CPT 2320	Telecommunications	3
CPT 2410	Computer Peripherals	4
CPT 2425	Operating Systems II	4
CPT 2430	System Troubleshooting	4
	Social Science Elective	3

COMPUTER TECHNOLOGY
RECOMMENDED PART-TIME EVENING SCHEDULE

FIRST YEAR

Fall Semester		Cr.
MAT 1140	Technical Mathematics.	5
	General Elective	3
Spring Semester		
CIS 2215	BASIC Programming for Engineering Technologies	2
EET 1110	Electric Circuits	5
Summer Semester		
ENG 1111	Composition I	3
	Social Science Elective	3

SECONDYEAR

Fall Semester		Cr.
EET 1210	Electronic Circuits	5
	Humanities Elective	3
Spring Semester		
SPE 1111	Speech	3
CPT 1400	Digital Circuits	3
Summer Semester		
MAT 1150	Basic Calculus	3

THIRD YEAR

Fall Semester		Cr.
CPT 2310	Microprocessor Principles	5
CPT 2325	Operating Systems I	3
Spring Semester		
CPT 2320	Telecommunications	3
CFT 2425	Operating Systems II	4
Summer Semester		
PHY 1110	College Physics I	3
PHY 1111	Physics Laboratory I	1

FOURTHYEAR

Fall Semester		Cr.
CPT 2410	Computer Peripherals	4
CPT 2430	System Troubleshooting	4
Spring Semester		
PHY 1120	College Physics II	3
PHY 1121	Physics Laboratory II	1
	Technical Elective	3

Cooperative Education work experience in Computer Technology can be an important addition to a student's formal classroom work. Co-op courses, if appropriate, may substitute for technical courses up to 6 credit hours with the prior approval of the department head. All Co-op work must have department head approval. The Co-op office will provide the correct course numbers. Students participating in Cooperative Education are encouraged to work a minimum of two terms. See page 103 for more information.

ELECTRICAL ENGINEERING TECHNOLOGY

Associate of Applied Science

This program emphasizes both theory and practical applications in applied electrical engineering technology. Graduates have a diversified understanding of modern methods and insight in comprehending new and future developments.

Applied mathematics, physics, and communication courses support comprehensive electrical technology studies. Laboratory experiments coordinate with classroom theory to provide practical hands-on learning. Students analyze industrial, commercial and utility electrical power systems and study electrical and modern control systems with application to processing and manufacturing industries.

Graduates' careers are typically as electrical engineering technicians working with engineering teams: planning, specifying, purchasing, installing, testing, operating and maintaining electrical systems, equipment and controls in such important activities as: industrial plant engineering: manufacturing methods and quality assurance: automatic control of complex industrial processes: electrical facilities in building construction: operation and maintenance of electrical and associated equipment: electrical design and specifications and drawing development in professional consulting engineering activities: and electrical power company systems and equipment.

ELECTRICAL ENGINEERING TECHNOLOGY
COURSE REQUIREMENTS

English		**Class**	**Lab**	**Credits**
ENG 1111	Composition I	3	0	3
SPE 1111	Speech	3	0	3
Humanities Elective				
	Humanities Elective	3	0	3
Mathematics				
MAT 1140	Technical Mathematics	5	0	5
MAT 1150	Basic Calculus	3	0	3
Physics				
PHY 1110	College Physics I	3	0	3
PHY 1111	Physics Laboratory I	0	2	1
PHY 1120	College Physics II	3	0	3
PHY 1121	Physics Laboratory II	0	2	1
Social Science Elective				
	Social Science Elective	3	0	3
Computer Information Systems				
CIS 2215	BASIC Programming for Engineering Technologies	1	2	2
Computer Technology				
CPT 1400	Digital Circuits	2	2	3
Electronic Engineering Technology				
EET 1100	Technical Orientation	2	2	3
EET 1110	Electric Circuits	4	2	5
EET 1210	Electronic Circuits	4	2	5
EET 1220	Transformers/Rotating Machines	2	2	3
EET 2020	Industrial Control Systems	3	2	4
EET 2600	Automatic Control Systems	3	2	4
EET 2640	Power Distribution	3	2	4
EET 2660	Electrical Design Project	0	2	1

Mechanical Engineering Technology				
MET 1013	Technical Drawing	1	2	2
Technical Electives (5 credits required)				
EET 2110	Industrial Electronics	4	2	5
EET 2530	Power Systems	3	2	4
CPT 2310	Microprocessor Principles	4	3	5
General Education Elective				
	*General Elective	3	0	3
	Total Required - Associate's Degree			**72**

*The General Elective may be any regular credit course. Continuing Education courses or other non-credit courses do not qualify.

Cooperative Education work experience in Electrical Engineering Technology can be an important addition to a student's formal classroom work. Co-op courses, if appropriate, may substitute for technical courses up to 7 credit hours with the prior approval of the department head. All Co-op work must have department head approval. The Co-op office will provide the correct course numbers. Students participating in Cooperative Education are encouraged to work a minimum of two terms. See page 103 for more information.

ELECTRICAL ENGINEERING TECHNOLOGY

FIRST YEAR

Fall Semester		**Cr.**
ENG 1111	Composition I	3
MAT 1140	Technical Mathematics	5
CIS 2215	BASIC Programming for Engineering Technologies	2
EET 1100	Technical Orientation	3
EET 1110	Electric Circuits	5
Spring Semester		
MAT 1150	Basic Calculus	3
PHY 1110	College Physics I	3
PHY 1111	Physics Laboratory I	1
EET 1210	Electronic Circuits	5
EET 1220	Transformers/Rotating Machines	3
CPT 1400	Digital Circuits	3

SECOND YEAR

Fall Semester		**Cr.**
SPE 1111	Speech	3
PHY 1120	College Physics II	3
PHY 1121	Physics Laboratory II	1
EET 2020	Industrial Control Systems	4
EET 2640	Power Distribution	4
EET 2660	Electrical Design Project	1
MET 1013	Technical Drawing	2
Spring Semester		
EET 2600	Automatic Control Systems	4
	Technical Electives	5
	Social Science Elective	3
	Humanities Elective	3
	General Elective	3

ELECTRICAL ENGINEERING TECHNOLOGY
RECOMMENDED PART-TIME EVENING SCHEDULE

FIRST YEAR

Fall Semester		Cr.
MAT 1140	Technical Mathematics,	5
EET 1100	Technical Orientation	3
Spring Semester		
CIS 2215	BASIC Programming for Engineering Technologies	2
EET 1110	Electric Circuits	5
Summer Semester		
ENG 1111	Composition I	3
PHY 1110	College Physics I	3
PHY 1111	Physics Laboratory I	1

SECOND YEAR

Fall Semester		Cr.
EET 1210	Electronic Circuits	5
CFT 1400	Digital Circuits	3
Spring Semester		
MAT 1150	Basic Calculus	3
EET 1220	Transformers/Rotating Machines	3
Summer Semester		
PHY 1120	College Physics II	3
PHY 1121	Physics Laboratory II	1
	Humanities Elective	3

THIRD YEAR

Fall Semester		Cr.
EET 2020	Industrial Control Systems	4
MET 1013	Technical Drawing	2
Spring Semester		
EET 2640	Power Distribution	4
	General Elective	3
Summer Semester		
SPE 1111	Speech	3
	Social Science Elective	3

FOURTH YEAR

Fall Semester		Cr.
EET 2660	Electrical Design Project	1
	Technical Elective	5
Spring Semester		
EET 2600	Automatic Control Systems	4

ELECTRICAL MAINTENANCE

Technical Certificate

Reliable electrical power systems are dependent on proper maintenance to avoid outages and other problems. Qualified maintenance specialists are vital to the safe, reliable operation of the complex electrical systems in large industrial plants, commercial buildings, and institutional facilities.

This comprehensive certificate program offers excellent preparation for a career in the maintenance of large electrical systems. It includes an appropriate amount of necessary theory explaining "why" and places strong emphasis on the actual equipment and operation of large and critical electrical power systems. The program covers electrical, as well as associated electronic, hydraulic and pneumatic equipment and applications.

ELECTRICAL MAINTENANCE
COURSE REQUIREMENTS

Course		Class	Lab	Credits
EMC 1112	Interpreting Technical Information	3	3	4
EMC 1122	Electrical Maintenance Orientation	3	3	4
EMC 1136	Basic D.C. and A.C. Circuits	6	6	8
	or			
EMC 1131	Basic D.C. Circuits	3	3	4
	and			
EMC 1161	Basic A.C. Circuits	3	3	4
EMC 1216	Electrical Machines and Controls	6	6	8
EMC 1218	Digital Principles	3	3	4
EMC 1222	Basic Hydraulics and Pneumatics	4	3	5
EMC 1312	Control Applications	3	3	4
EMC 1322	Programmable Logic Controllers	3	4	5
	Total Required - Certificate			42

Cooperative Education work experience in Electrical Maintenance can be an important addition to a student's formal classroom work. Co-op courses, if appropriate, may substitute for technical courses up to 6 credit hours with the prior approval of the department head. All Co-op work must have department head approval. The Co-op office will provide the correct course numbers. Students participating in Cooperative Education are encouraged to work a minimum of two terms. See page 103 for more information.

ELECTRICAL MAINTENANCE
Recommended Day Sequence

Fall Semester		Cr.
EMC 1112	Interpreting Technical Information	4
EMC 1122	Electrical Maintenance Orientation	4
EMC 1136	Basic D.C. and A.C. Circuits	8
Spring Semester		
EMC 1216	Electrical Machines and Controls	8
EMC 1218	Digital Principles	4
EMC 1222	Basic Hydraulics and Pneumatics	5
Summer Semester		
EMC 1312	Control Applications	4
EMC 1322	Programmable Logic Controllers	5

Recommended Evening Sequence

FIRST YEAR

Fall Semester		Cr.
EMC 1122	Electrical Maintenance Orientation	4
EMC 1131	Basic D.C. Circuits	4
Spring Semester		
EMC 1222	Basic Hydraulics and Pneumatics	5
EMC 1161	Basic A.C. Circuits	4
Summer Semester		
EMC 1112	Interpreting Technical Information	4

SECOND YEAR

Fall Semester		Cr.
EMC 1216	Electrical Machines and Controls	8
Spring Semester		
EMC 1218	Digital Principles	4
EMC 1312	Control Applications	4
Summer Semester		
EMC 1322	Programmable Logic Controllers	5

ELECTRONIC ENGINEERING TECHNOLOGY

Associate of Applied Science

The Electronic Engineering Technology program provides graduates for various types of occupations involving electronics. The program is broad, rigorous, and comprehensive enough to ensure appropriate competencies in mathematics, physics, communication skills, and electronics. It also provides enough technical electives to allow students to tailor, to some degree, the training toward their future or present employment. Typical areas of emphasis are communications, electronic repair, manufacturing, and field service repair. The student receives extensive hands-on experience in all the electronic courses using equipment now available on the job in Nashville.

Typical jobs for graduates of this program are: customer service technician - installs and maintains various types of electronic equipment with service occasionally provided at the customer site; **electronic engineering aide** - assists engineers in the design, development, and testing of electronic equipment; industrial maintenance technician - works as an electronic repair technician in large industrial sites; and communications technician - installs and maintains various types of communications, broadcasting, or cable television equipment.

ELECTRONIC ENGINEERING TECHNOLOGY COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
SPE 1111	Speech	3	0	3
Humanities Elective				
	Humanities Elective	3	0	3
Mathematics				
MAT 1140	Technical Mathematics	5	0	5
MAT 1150	Basic Calculus	3	0	3
Physics				
PHY 1110	College Physics I	3	0	3
PHY 1111	Physics Laboratory I	0	2	1
PHY 1120	College Physics II	3	0	3
PHY 1121	Physics Laboratory II	0	2	1
Social Science Elective				
	Social Science Elective	3	0	3
Computer Information Systems				
CIS 2216	C Language for Engineering Technologies	1	2	2
Computer Technology				
CFT 1400	Digital Circuits	2	2	3
CFT 2310	Microprocessor Principles	4	3	5
Electronic Engineering Technology				
EET 1100	Technical Orientation	2	2	3
EET 1110	Electric Circuits	4	2	5
EET 1210	Electronic Circuits	4	2	5
EET 2110	Industrial Electronics	4	2	5
EET 2120	Electronic Design Project	0	2	1
EET 2210	Circuit Analysis	1	2	2
EET 2220	Communication Circuits	3	2	4
Technical Electives (5 credits required)				
EET 2230	Network Analysis	0	4	2
EET 2240	Instrumentation	2	2	3
EET 2280	Video Systems	2	2	3

MET	1013	Technical Drawing	1	2	2
MET	1122	Computer-Aided Drafting	1	4	3
MET	2010	Hydraulics and Pneumatics	2	2	3
CPT	2410	Computer Peripherals	3	3	4
General Education Elective					
		*General Elective	3	0	3
		Total Required - Associate's Degree			**71**

*The General Elective may be any regular credit course. Continuing Education courses or other non-credit courses do not qualify.

Cooperative Education work experience in Electronic Engineering Technology can be an important addition to a student's formal classroom work. Co-op courses, if appropriate, may substitute for technical courses up to 7 credit hours with the prior approval of the department head. AU Co-op work must have department head approval. The Co-op office will provide the correct course numbers. Students participating in Cooperative Education are encouraged to work a minimum of two terms. See page 103 for more information.

ELECTRONIC ENGINEERING TECHNOLOGY

FIRST YEAR

Fall Semester			Cr.
ENG	1111	Composition I	3
MAT	1140	Technical Mathematics	5
CIS	2216	C Language for Engineering Technologies	2
EET	1100	Technical Orientation	3
EET	1110	Electric Circuits	5
Spring Semester			
MAT	1150	Basic Calculus	3
PHY	1110	College Physics I	3
PHY	1111	Physics Laboratory I	1
EET	1210	Electronic Circuits	5
CPT	1400	Digital Circuits	3
		Humanities Elective	3

SECONDYEAR

Fall Semester			Cr.
SPE	1111	Speech	3
PHY	1120	College Physics II	3
PHY	1121	Physics Laboratory II	1
CPT	2310	Microprocessor Principles	5
EET	2110	Industrial Electronics	5
EET	2120	Electronic Design Project	1
Spring Semester			
EET	2210	Circuit Analysis.	2
EET	2220	Communication Circuits	4
		Technical Electives	5
		Social Science Elective	3
		General Elective	3

ELECTRONIC ENGINEERING TECHNOLOGY
RECOMMENDED PART-TIME EVENING SCHEDULE

FIRST YEAR

Fall Semester		Cr.
MAT 1140	Technical Mathematics.	5
EET 1100	Technical Orientation	3
Spring Semester		
CIS 2216	C Language for Engineering Technologies	2
EET 1110	Electric Circuits	5
Summer Semester		
ENG 1111	Composition I	3
PHY 1110	College Physics I	3
PHY 1111	Physics Laboratory I	1

SECOND YEAR

Fall Semester		**Cr.**
EET 1210	Electronic Circuits	5
CPT 1400	Digital Circuits	3
Spring Semester		
MAT 1150	Basic Calculus	3
CPT 2310	Microprocessor Principles	5
Summer Semester		
PHY 1120	College Physics II	3
PHY 1121	Physics Laboratory II	1
	Humanities Elective	3

THIRD YEAR

Fall Semester		**Cr.**
EET 2110	Industrial Electronics	5
EET 2120	Electronic Design Project	1
Spring Semester		
EET 2220	Communication Circuits	4
	General Elective	3
Summer Semester		
SPE 1111	Speech	3
	Social Science Elective	3

FOURTH YEAR

Fall Semester		**Cr.**
EET 2210	Circuit Analysis	2
	Technical Elective	2
Spring Semester		
	Technical Elective	3

GENERAL TECHNOLOGY

Associate of Applied Science

The General Technology curriculum allows students flexibility in the technical specialization of their choice. Students occasionally desire to take courses in a technical specialty to enhance their employment potential based upon their personal goals or upon the request of their employers. Because of the requirements of the specific technical programs, this flexibility is not always available. Through the General Technology curriculum, students may tailor their educational programs to meet the needs of their present or potential employers, or to be sure that their program of studies will meet their needs.

Students who choose this curriculum may prepare themselves for employment in many diverse areas: electro-mechanical equipment repair and service: business forms and accounting system sales: and technical equipment sales in the areas of electrical, electronics, systems and components, and computer-related products.

GTP 1000 GENERAL TECHNOLOGY **1-28 Credits**

Upon documented evidence of successful completion of a postsecondary vocational program and 15 hours of college-level work at Nashville Tech, credit may be granted for this course toward the Associate of Applied Science degree in General Technology. In order to receive credit, the student must demonstrate that vocational competencies are equivalent to learning outcomes expected from college-level courses. Students may demonstrate competency by scoring at or above the national postsecondary mean on the Student Occupational Competency Achievement Test (SOCAT) in the occupational area for which the students are requesting credit. Appropriate assessment procedures to document college-level proficiency are required for all articulated programs.

GENERAL TECHNOLOGY
(Business Concentration)
COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
SPE 1111	Speech	3	0	3
Humanities Elective				
	Humanities Elective	3	0	3
Mathematics				
MAT 1110	Business Mathematics	3	0	3
	Math Elective	3	0	3
Natural Science Elective				
	Natural Science Elective	4	0	4
Social Science Elective				
	Social Science Elective	3	0	3
Computer Accounting Technology				
ACC 1104	Principles of Accounting I	4	0	4
AIS 1138	Microcomputer Software for Business	4	0	4
Business Management				
BUS 1113	Introduction to Business	3	0	3
BUS 2600	Business Law: Contract and Commercial Transactions	3	0	3
ECO 1111	Principles of Macroeconomics	3	0	3
MKT 1227	Sales Techniques	3	0	3
MKT 2220	Marketing	3	0	3

Business Electives (12 credits required)

Computer Accounting Technology and Computer information Systems				
CIS 1010	introduction to Electronic Data Processing	3	0	3
CIS 1020	Computing Environments	3	0	3
	or			
AIS 1180	Introduction to Microcomputing	3	0	3
Other Elective				
PHI 1111	Introduction to Ethics	3	0	3
	or			
BUS 2310	Business Ethics	3	0	3
General Education Elective				
	*General Elective	3	0	3
	Total Required - Associate's Degree			**69**

*The General Elective may be any regular credit course. Continuing Education courses or other non-credit courses do not quale.

Cooperative work experience in General Technology (Business Concentration) can be an important addition to a student's formal classroom work. Co-op courses, if appropriate, may substitute for technical courses up to 9 credit hours with the prior approval of the department head. All Co-op work must have department head approval. Students participating in Cooperative Education are encouraged to work a minimum of two terms. The Co-op office will provide the correct course numbers. See page 103 for more information.

GENERAL TECHNOLOGY
(Technical Concentration)
COURSE REQUIREMENTS

English		**Class**	**Lab**	**Credits**
ENG 1111	Composition I	3	0	3
SPE 1111	Speech	3	0	3
Humanities Elective				
	Humanities Elective	3	0	3
Mathematics				
MAT 1140	Technical Mathematics	5	0	5
	or			
MAT 1120	College Algebra	3	0	3
	and			
MAT 1130	Trigonometry	3	0	3
MAT 1150	Basic Calculus	3	0	3
	or			
MAT 2110	Statistics	3	0	3
Natural Science Elective				
	Natural Science Elective or Physics	3	2	4
Physics				
PHY 1110	College Physics I	3	0	3
PHY 1111	Physics Laboratory I	0	2	1
Social Science Elective				
	Social Science Elective	3	0	3
Computer Accounting Technology				
AIS 1138	Microcomputer Software for Business	4	0	4
Computer Information Systems				
CIS 2215	BASIC Programming for Engineering Technologies	1	2	2
Business Management				
ECO 1111	Principles of Macroeconomics	3	0	3

General Elective	3
Guided Electives	9
Technical Electives	20
Minimum Total Required - Associate's Degree	**69**

*The General Elective may be any regular credit course. Continuing Education courses or other non-credit courses do not qualify.

The student's plan of study and all options must be approved in advance by the appropriate department head and division head.

Cooperative Education work experience in General Technology (Technical Concentration) can be an important addition to a student's formal classroom work. Co-op courses, if appropriate, may substitute for technical courses up to 6 credit hours with the prior approval of the: department head. All Co-op work must have department head approval. The Co-op office will provide the correct course numbers. Students participating in Cooperative Education are encouraged to work a minimum of two terms. See page 103 for more information.

INDUSTRIAL ENGINEERING TECHNOLOGY

Associate of Applied Science

Industrial Engineering Technology has developed during recent years to meet the challenge of production, engineering, and management in industry. In order for a manufacturing, service, or distribution business to be effective, the people who control its operation must be familiar with various aspects of the business. The Industrial Engineering (I.E.) Technician receives training to fill this need.

Proper use of resources is the chief concern of the I.E. technician, including the effective use of people, machines, money, and materials. Graduates have found employment in such typical positions as **methods and work standards engineering technician** - improves the effectiveness of manufacturing processes, seeks and develops processes for achieving safety, economy, and efficiency; **plant layout and production planner** - aids industrial engineers and top plant management in planning and location of machines, equipment, and material-handling devices: **quality engineering technician** - works with quality control engineers to set up and maintain an effective process, product and material quality control program; and **industrial engineering technician** - applies industrial engineering techniques in hospitals, government, banks, and private companies in virtually every business situation.

INDUSTRIAL ENGINEERING TECHNOLOGY
COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
SPE 1111	Speech	3	0	3
Humanities Elective				
	Humanities Elective	3	0	3
Mathematics				
MAT 1140	Technical Mathematics	5	0	5
MAT 2110	Statistics	3	0	3
Natural Science Electives				
	Natural Science Electives	6	4	8
Social Science Elective				
	Social Science Elective	3	0	3
Computer Information Systems				
CIS 2215	BASIC Programming for Engineering Technologies	1	2	2
	or			
AIS 1138	Microcomputer Software for Business...	4	0	4
	or			
CIS 2216	C Language for Engineering Technologies	1	2	2
Industrial Engineering Technology				
IET 1112	Work Measurement	2	2	3
IET 1120	Work Methods	3	0	3
IET 1220	Production, Inventory and Cost Control	3	0	3
IET 2110	Plant Layout and Material Handling	2	2	3
IET 2120	Engineering Economy	3	0	3
IET 2210	Quality Control	2	2	3
IET 2220	Industrial Project	1	2	2
Mechanical Engineering Technology				
MET 1013	Technical Drawing	1	2	2
Technical Electives*				
MET 1010	Materials and Manufacturing Processes.	2	2	3
MET 1120	Machine Tool and CNC Operation	3	2	4
IET 2130	Industrial Safety/Ergonomics	3	o	3
IET 2230	Introduction to Operations Research	3	0	3

General Education Elective

**General Elective	3	0	3
Total Required - Associate's Degree			**68**

These courses are considered technical electives. Other courses may be used subject to department head approval.

**The General Elective may be any regular credit course. Continuing Education courses or other non-credit courses do not qualify.

Cooperative Education work experience in Industrial Engineering Technology can be an important addition to a student's formal classroom work. Co-op courses, if appropriate, may substitute for technical courses up to 6 credit hours with the prior approval of the department head. All Co-op work must have department head approval. The Co-op office will provide the correct course numbers. Students participating in Cooperative Education are encouraged to work a minimum of two terms. See page 103 for more information.

INDUSTRIAL ENGINEERING TECHNOLOGY

FIRST YEAR

Fall Semester		Cr.
ENG 1111	Composition I	3
MAT 1140	Technical Mathematics	5
MET 1013	Technical Drawing	2
IET 1112	Work Measurement	3
MET 1010*	Materials and Manufacturing Processes	3
Spring Semester		
MAT 2110	Statistics	3
IET 1120	Work Methods	3
IET 1220	Production, Inventory and Cost Control	3
IET 2130*	Industrial Safety/Ergonomics	3
MET 1120*	Machine Tool and CNC Operations	4
	Programming Elective	4

SECOND YEAR

Fall Semester		Cr.
IET 2110	Plant Layout and Material Handling	3
IET 2120	Engineering Economy	3
IET 2210	Quality Control	3
	Natural Science Elective	4
	General Elective	3
Spring Semester		
SPE 1111	Speech	3
IET 2220	Industrial Project	2
IET 2230*	Introduction to Operations Research	3
	Natural Science Elective	4
	Humanities Elective	3
	Social Science Elective	3

INDUSTRIAL ENGINEERING TECHNOLOGY RECOMMENDED PART-TIME EVENING SCHEDULE

FIRST YEAR

Fall Semester		Cr.
MAT 1140	Technical Mathematics	5
IET 1112	Work Measurement	3
Spring Semester		
IET 1120	Work Methods	3
IET 1220	Production, Inventory and Cost Control	3
	Programming Elective	2
Summer Semester		
MAT 2110	Statistics	3

SECONDYEAR

Fall Semester		Cr.
ENG 1111	Composition I	3
IET 2210	Quality Control	3
MET 1013	Technical Drawing	2
Spring Semester		
SPE 1111	Speech	3
IET 2130	Industrial Safety/Ergonomics	3
	Humanities Elective	3
Summer Semester		
IET 2120	Engineering Economy	3

THIRD YEAR

Fall Semester		Cr.
IET 2110	Plant Layout and Material Handling	3
MET 1010*	Materials and Manufacturing Processes	3
	Social Science Elective	3
Spring Semester		
IET 2230*	Introduction to Operations Research	3
	Natural Science Elective	4
Summer Semester		
IET 2220	Industrial Project	2

FOURTH YEAR

Fall Semester		Cr.
	Natural Science Elective	4
	General Elective	3
Spring Semester		
MET 1120*	Machine Tool and CNC Operations	4

MECHANICAL ENGINEERING TECHNOLOGY

Associate of Applied Science

Virtually every industry needs mechanical engineering technicians. Most companies are becoming increasingly automated and more interested in those trained to bridge the gap between the craftsperson and engineer. They need and seek individuals already trained in theory and practical application with a more complete understanding than on-the-job training can provide.

Mechanical Engineering Technology applies scientific and engineering knowledge to the generation, transmission, and use of mechanical energy, especially through machinery of all types. These machines vary from an automotive power plant to all types of machines, including huge hydraulic earth movers. The program builds strong proficiencies in metals technology and an awareness of high-technology manufacturing techniques-computer numerical control, quality control, computer graphics, and related areas. Strong emphasis is placed on integrating communications skills with technical course content. This is one of the broadest programs, offering the basics along with hands-on experience using industrial-type production and test equipment in many fields.

Some of our graduates have such positions and titles as: technician or engineering aide - assists engineers in the design and development of mechanical systems; laboratory technician - modifies existing product lines and equipment and checks reliability at the operation site; technical sales representative - makes use of technical knowledge to sell industrial equipment; design drafter - uses drafting skills-both manual and computer-aided-along with technical know-how to design new products and modify existing equipment; and technical supervisor - uses skills required to motivate and supervise technical personnel.

MECHANICAL ENGINEERING TECHNOLOGY
COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
SPE 1111	Speech	3	0	3
Humanities Elective				
	Humanities Elective	3	0	3
Mathematics				
MAT 1140	Technical Mathematics	5	0	5
MAT 1150	Basic Calculus	3	0	3
Natural Science Elective				
	Physics or Chemistry Elective	3	2	4
Physics				
PHY 1110	College Physics I	3	0	3
PHY 1111	Physics Laboratory I	0	2	1
Social Science Elective				
	Social Science Elective	3	0	3
Electronic Engineering Technology				
EET 1260	Electrical Technology	3	2	4
Computer Information Systems				
CIS 2215	BASIC Programming for Engineering Technologies	1	2	2
	or			
CIS 2216	C Language for Engineering Technologies	1	2	2
Mechanical Engineering Technology				
MET 1010	Materials and Manufacturing Processes	2	2	3
MET 1014	Engineering Drawing	1	4	3
MET 1015	Technical Problem Solving	2	0	2
MET 1120	Machine Tool and CNC Operations	3	2	4

MET 1122	Computer-Aided Drafting	1	4	3
MET 2010	Hydraulics and Pneumatics	2	2	3
MET 2011	Statics and Dynamics	3	2	4
MET 2110	Mechanical Equipment	3	2	4
MET 2111	Strength of Materials	2	2	**3**
MET 2114	HVAC	3	2	4
MET 2120	Mechanical Design Project	0	2	1
Technical Electives (3 credits required)				
IET 1220	Production, Inventory and Cost Control	3	0	3
IET 2120	Engineering Economy	3	0	3
IET 2210	Quality Control	2	2	3
MET 2115	Geometric Dimensioning and Tolerancing	2	2	3
MET 2116	Tool and Die Design	2	4	4
MET 2122	Intermediate CAD	2	4	4
General Education Elective				
	*General Elective	3	0	3
	Total Required - Associate's Degree			**74**

*The General Elective may be any regular credit course. Continuing Education courses or other non-credit courses do not qualify.

Cooperative Education work experience in Mechanical Engineering Technology can be an important addition to a student's formal classroom work. Co-op courses, if appropriate, may substitute for technical courses up to 2 credit hours with the prior approval of the department head. All Co-op work must have department head approval. The Co-op office will provide the correct course numbers. Students participating in Cooperative Education are encouraged to work a minimum of two terms. See page 103 for more information.

MECHANICAL ENGINEERING TECHNOLOGY

FIRST YEAR

Fall Semester		Cr.
ENG 1111	Composition I	3
MAT 1140	Technical Mathematics	5
MET 1010	Materials and Manufacturing Processes	3
MET 1014	Engineering Drawing	3
MET 1015	Technical Problem Solving	2
	Programming Elective	2
Spring Semester		
MAT 1150	Basic Calculus	3
PHY 1110	College Physics I	3
PHY 1111	Physics Laboratory I	1
MET 1120	Machine Tool and CNC Operations	4
MET 1122	Computer-Aided Drafting	3
EET 1260	Electrical Technology	4

SECONDYEAR

Fall Semester		Cr.
SPE 1111	Speech	3
MET 2010	Hydraulics and Pneumatics	3
MET 2011	Statics and Dynamics	4
	Technical Elective	3
	Physics Elective or Chemistry Elective	4
	General Elective	3
Spring Semester		
MET 2110	Mechanical Equipment	4
MET 2111	Strength of Materials	3
MET 2114	HVAC	4
MET 2120	Mechanical Design Project	1
	Humanities Elective	3
	Social Science Elective	3

MECHANICAL ENGINEERING TECHNOLOGY
RECOMMENDED PART-TIME EVENING SCHEDULE

FIRST YEAR

Fall Semester		Cr.
MET 1014	Engineering Drawing	3
MET 1015	Technical Problem Solving	2
Spring Semester		
MAT 1140	Technical Mathematics	5
MET 1010	Materials and Manufacturing Processes	3
Summer Semester		
MET 1122	Computer-Aided Drafting	3

SECOND YEAR

Fall Semester		Cr.
ENG 1111	Composition I	3
MET 1120	Machine Tool and CNC Operations	4
Spring Semester		
MAT 1150	Basic Calculus	3
PHY 1110	College Physics I	3
PHY 1111	Physics Laboratory I	1
Summer Semester		
	Programming Elective	2
	General Elective	3

THIRD YEAR

Fall Semester		Cr.
EET 1260	Electrical Technology	4
MET 2010	Hydraulics and Pneumatics	3
Spring Semester		
SPE 1111	Speech	3
MET 2011	Statics and Dynamics	4
Summer Semester		
MET 2114	HVAC	4

FOURTH YEAR

Fall Semester		Cr.
MET 2111	Strength of Materials	3
	Technical Elective	3
	Physics Elective or Chemistry Elective	4
Spring Semester		
MET 2120	Mechanical Design Project	1
MET 2110	Mechanical Equipment	4
	Humanities Elective	3
Summer Semester		
	Social Science Elective	3

OCCUPATIONAL THERAPY ASSISTANT TECHNOLOGY

Associate of Applied Science

The Occupational Therapy Assistant Technology program trains students to provide services to individuals whose abilities to cope with tasks of living are threatened or impaired by developmental delays, the aging process, poverty and cultural differences, physical injury or illness, or psychological and social disability. The OTA program is accredited by the Accreditation Council of Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA).

Upon completion of the academic curriculum, students will work in a clinical setting under supervision for a minimum of sixteen weeks. After meeting all program requirements, graduates can take the certification examination administered by the American Occupational Therapy Certification Board (AOTCB). After successful completion of this exam, the individual will be a Certified Occupational Therapy Assistant (COTA). Licensure by the Tennessee State Board of Occupational Examiners is required in order to practice. Under the supervision of a registered occupational therapist, certified assistants will implement restorative, preventive, and maintenance programs in manual and creative arts, activities of daily living, recreation, and exercise.

Due to limited enrollment, students should request admission early. Contact the OTA Department concerning application, admission procedures and interview deadlines. This information and required forms are included in the OTA Admission Packet available in the Admissions, Student Services, and Occupational Therapy departments. In addition to college entrance requirements, the Occupational Therapy Assistant Technology program requires the following:

1. OTA applications must be on file in the OTA Department. All transfer requests and ACT/AAPP and assessment scores must be on file prior to being considered for admission into the program.
2. Students in the OTA program must have professional liability insurance. It is purchased as a group the first week of class. Proof of health insurance and health forms must be on file after being accepted into the program and before enrolling in OTA courses.
3. Interested students must have an interview with a panel of Education Council members. Students must have completed remedial/developmental courses before interviewing. (If students are enrolled in the last developmental course, they may interview if a letter from the instructor is presented indicating a passing grade.) It is highly recommended that students who test into remedial/developmental courses take Orientation to Occupational Therapy, OTT 1100.
4. Proof of clinical observation visits and volunteer/work/other OT-related experience must be on file in the OTA office. Deadline dates and forms are listed in the OTA Admission Packet.
5. Acceptance is based on grade average, volunteer/work/other OT-related experience, interviews, and related admitting activities. Additional points are given on acceptance criteria to Tennessee residents. A letter with specific admitting criteria will be sent to all qualified students whose OTA application is on file in the OTA Department.

Students will be responsible for travel costs, parking fees, special projects, orientation workshop, uniforms, professional and health insurance, and relocation expenses during fieldwork.

OCCUPATIONAL THERAPY ASSISTANT TECHNOLOGY
COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
SPE 1111	Speech	3	0	3
Humanities Elective				
	Humanities Elective	3	0	3
Mathematics Elective				
	Math Elective	3	0	3
Social Science				
SOC 1111	Sociology	3	0	3
Biology				
BIO 1130	Anatomy & Physiology I	3	0	3
BIO 1131	Anatomy & Physiology Lab I	0	2	1
Occupational Therapy				
OTT 1110	OT Theory and Practice I	2	3	2
OTT 1120	Therapeutic Activities I	2	3	3
OTT 1230	Human Development	3	3	4
OTT 1240	Therapeutic Activities II	1	9	4
OTT 1250	Psychology for OT	3	0	3
OTT 1260	Kinesiology	2	0	2
OTT 2120	Psychosocial Dysfunction	3	0	3
OTT 2130	Treatment of Psychosocial Dysfunction	3	3	4
OTT 2140	Physical Dysfunction	3	0	3
OTT 2150	Treatment of Physical Dysfunction	3	3	4
OTT 2110	OT Theory and Practice II	1	3	2
		Contact Hours		**Credits**
OTT 2220	Level II Fieldwork-Psychosocial Dysfunction	320	0	8
OTT 2230	Level II Fieldwork-Physical Dysfunction	320	0	8
General Education Elective				
	*General Elective	3	0	3
	Total Required - Associate's Degree			**72**

The General Elective may be any regular credit course. Continuing Education courses or other non-credit courses do not qualify.

OCCUPATIONAL THERAPY ASSISTANT TECHNOLOGY

FIRST YEAR

Fall Semester		**Cr.**
ENG 1111	Composition I	3
SOC 1111	Sociology	3
BIO 1130	Anatomy & Physiology I	3
BIO 1131	Anatomy & Physiology Lab I	1
OTT 1110	OT Theory and Practice I	2
OTT 1120	Therapeutic Activities I	3
	Math Elective	3
Spring Semester		
OTT 1230	Human Development*	4
OTT 1240	Therapeutic Activities II	4
OTT 1250	Psychology for OT	3
OTT 1260	Kinesiology	2
	Humanities Elective	3
	General Elective	3

This includes a clinical component.

SECOND YEAR

Fall Semester		**Cr.**
SPE 1111	Speech	3
OTT 2120	Psychosocial Dysfunction	3
OTT 2130	Treatment of Psychosocial Dysfunction	4
OTT 2140	Physical Dysfunction	3
OTT 2150	Treatment of Physical Dysfunction..	4
OTT 2110	OT Theory and Practice II*	2
Spring Semester		
OTT 2220	Level II Fieldwork-Psychosocial Dysfunction**	8
OTT 2230	Level II Fieldwork-Physical Dysfunction**	8

**Level II Fieldwork will be completed within 18 months of academic preparation.

OFFICE ADMINISTRATION

Associate of Applied Science

Today's office administrator is considered an assistant to the executive and has the ability to assume responsibility, make decisions, and work independently. Job duties include planning, organizing, and directing office activities.

This program is designed to provide skills for those who are interested in a career as an office administrator in the legal or nonspecialized office environment. It also provides much of the educational background necessary for those who want to gain recognition for their skills and knowledge by passing the Certified Professional Secretary exam or the Professional Legal Secretary exam.

It is the intent of the Office Administration Department that graduates of the program be able to:

- Keyboard at employable standards.
- Operate personal computing equipment and use current word processing and spreadsheet software efficiently.
- Organize time to perform work assignments and maintain a smooth flow of work when completing office tasks.
- Apply the principles of records management to both manual and electronic database systems.
- Perform general office financial transactions and record-keeping activities.
- Apply basic language arts skills in the composition and transcription of documents.
- Understand the principles of human resource management, office layout and design, equipment selection and procurement, and office management theory.
- Communicate both orally and in writing.

Concepts taught in general education courses will be reinforced in the Office Administration curriculum and applied to class exercises and projects.

Administrative Concentration

After an individual has completed 15 credit hours in the Office Administration program, certain credits are available based on verifcation of successful completion of the Certified Professional Secretary examination. The following credits will be awarded:

SOC	2111	Human Relations	3 credits
OAD	1400	Electronic Office Procedures	4 credits
OAD	2400	Office Accounting	4 credits
OAD	2800	Office Management	4 credits

OFFICE ADMINISTRATION
(Administrative Concentration)
COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
SPE 1111	Speech	3	0	3
Humanities Elective				
	Humanities Elective	3	0	3
Mathematics				
MAT 1110	Business Mathematics	3	0	3
Natural Science/Mathematics Elective				
	Natural Science or Math Elective	3	0	3
Social Science Elective				
	Social Science Elective	3	0	3
Accounting Information Systems				
AIS 1180	Introduction to Microcomputing	2	2	3
Business Management				
BUS 2310	Business Ethics	3	0	3
Office Administration				
OAD 1010	Records and Database Management	4	0	4
OAD 1120	Keyboarding/Speedbuilding	4	0	4
OAD 1130	Document Processing	4	0	4
OAD 1220	Beginning Wordperfect	4	0	4
OAD 1230	Advanced Wordperfect	4	0	4
OAD 1240	Desktop Publishing with Wordperfect	4	0	4
OAD 1260	Lotus 1-2-3 for the Administrative Assistant	3	0	3
OAD 1400	Electronic Office Procedures	4	0	4
OAD 2400	Office Accounting	4	0	4
OAD 2700	Administrative Machine Transcription	4	0	4
OAD 2800	Office Management	3	0	3
General Education Elective				
	*General Elective	3	0	3
	Total Required - Associate's Degree			**6**

The General Elective may be any regular credit course. Continuing Education courses or other non-credit courses do not qualify.

Cooperative Education work experience in Office Administration (Administrative Concentration) can be an important addition to a student's formal classroom work. Co-op courses, if appropriate, may substitute for technical courses up to 9 credit hours with the prior approval of the department head. All Co-op work must have department head approval. The Co-op office will provide the correct course numbers. Students participating in Cooperative Education are encouraged to work a minimum of two terms. See page 103 for more information.

OFFICE ADMINISTRATION
(Administrative Concentration)

FIRST YEAR

Fall Semester		Cr.
ENG 1111	Composition I	3
MAT 1110	Business Mathematics	3
AIS 1180	Introduction to Microcomputing	3
OAD 1120	Keyboarding/Speedbuilding	4
	Social Science Elective	3
Spring Semester		
OAD 1010	Records and Database Management	4
OAD 1130	Document Processing	4
OAD 1220	Beginning Wordperfect	4
	General Elective	3
	Natural Science Elective or Math Elective	3

SECOND YEAR

Fall Semester		Cr.
OAD 1230	Advanced Wordperfect	4
OAD 1400	Electronic Office Procedures	4
OAD 2400	Office Accounting	4
OAD 2700	Administrative Machine Transcription	4
	Humanities Elective	3
Spring Semester		
SPE 1111	Speech	3
BUS 2310	Business Ethics	3
OAD 1240	Desktop Publishing with Wordperfect	4
OAD 1260	Lotus 1-2-3 for the Administrative Assistant	3
OAD 2800	Office Management	3

OFFICE ADMINISTRATION
(Administrative Concentration)
RECOMMENDED PART-TIME EVENING SCHEDULE

FIRST YEAR

Fall Semester		Cr.
ENG 1111	Composition I	3
OAD 1120	Keyboarding/Speedbuilding	4
Spring Semester		
MAT 1110	Business Mathematics	3
OAD 1130	Document Processing	4
Summer Semester		
AIS 1180	Introduction to Microcomputing	3

SECOND YEAR

Fall Semester		Cr.
OAD 1010	Records and Database Management	4
OAD 1220	Beginning Wordperfect	4
Spring Semester		
OAD 1230	Advanced Wordperfect	4
	General Elective	3
Summer Semester		
	Social Science Elective	3

THIRD YEAR

Fall Semester		Cr.
OAD 1400	Electronic Office Procedures	4
OAD 2700	Administrative Machine Transcription	4
Spring Semester		
OAD 1260	Lotus 1-2-3 for the Administrative Assistant	3
OAD 1240	Desktop Publishing with Wordperfect	4
Summer Semester		
SPE 1111	Speech	3

FOURTH YEAR

Fall Semester		Cr.
OAD 2400	Office Accounting	4
	Natural Science Elective or Math Elective	3
Spring Semester		
OAD 2800	Office Management	3
BUS 2310	Business Ethics	3
	Humanities Elective	3

Legal Concentration

After an individual has completed 16 credit hours in the Office Administration program, certain credits are available based on verification of successful completion of the Professional Legal Secretary examination. The following credits will be awarded:

OAD	2400	Office Accounting	4 Credits
OAD	1120	Keyboarding/Speedbuilding	4 Credits
OAD	1130	Document Processing	4 Credits
OAD	2540	Law Office Practices	4 credits

OFFICE ADMINISTRATION
(Legal Concentration)
COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
SPE 1111	Speech	3	0	3
Humanities Elective				
	Humanities Elective	3	0	3
Mathematics				
MAT 1110	Business Mathematics	3	0	3
Natural Science/Mathematics Elective				
	Natural Science or Math Elective	3	0	3
Social Science Elective				
	Social Science Elective	3	0	3
Accounting Information Systems				
AIS 1180	Introduction to Microcomputing	2	2	3
Business Management				
BUS 2310	Business Ethics	3	0	3
Office Administration				
OAD 1010	Records and Database Management	4	0	4
OAD 1120	Keyboarding/Speedbuilding	4	0	4
OAD 1130	Document Processing	4	0	4
OAD 1220	Beginning Wordperfect	4	0	4
OAD 1230	Advanced Wordperfect	4	0	4
OAD 1260	Lotus 1-2-3 for the Administrative Assistant	3	0	3
OAD 1400	Electronic Office Procedures	4	0	4
OAD 2400	Office Accounting	4	0	4
OAD 2500	Legal Machine Transcription	4	0	4
OAD 2540	Law Office Practices	4	0	4
OAD 2800	Office Management	3	0	3
General Education Elective				
	*General Elective	3	0	3
	Total Required - Associate's Degree			**69**

*The General Elective may be any regular credit course. Continuing Education courses or other non-credit courses do not qualify.

Cooperative Education work experience in Office Administration (Legal Concentration) can be an important addition to a student's formal classroom work. Co-op courses, if appropriate, may substitute for technical courses up to 9 credit hours with the prior approval of the department head. All Co-op work must have department head approval. The Co-op office will provide the correct course numbers. Students participating in Cooperative Education are encouraged to work a minimum of two terms. See page 103 for more information.

OFFICE ADMINISTRATION
(Legal Concentration)

FIRST YEAR

Fall Semester		Cr.
ENG 1111	Composition I	3
MAT 1110	Business Mathematics	3
AIS 1180	Introduction to Microcomputing	3
OAD 1120	Keyboarding/Speedbuilding	4
	Social Science Elective	3
Spring Semester		
OAD 1010	Records and Database Management	4
OAD 1130	Document Processing	4
OAD 1220	Beginning WordPerfect	4
	General Elective	3
	Natural Science Elective or Math Elective	3

SECOND YEAR

Fall Semester		Cr.
OAD 1230	Advanced Wordperfect	4
OAD 1400	Electronic Office Procedures	4
OAD 2400	Office Accounting	4
OAD 2500	Legal Machine Transcription	4
	Humanities Elective	3
Spring Semester		
SPE 1111	Speech	3
BUS 2310	Business Ethics	3
OAD 1260	Lotus 1-2-3 for the Administrative Assistant	3
OAD 2540	Law Office Practices	4
OAD 2800	Office Management	3

OFFICE ADMINISTRATION
(Legal Concentration)
RECOMMENDED PART-TIME EVENING SCHEDULE

FIRST YEAR

Fall Semester		Cr.
ENG 1111	Composition I	3
OAD 1120	Keyboarding/Speedbuiding	4
Spring Semester		
MAT 1110	Business Mathematics	3
OAD 1130	Document Processing	4
Summer Semester		
AIS 1180	Introduction to Microcomputing	3

THIRD YEAR

Fall Semester		Cr.
OAD 1400	Electronic Office Procedures	4
OAD 2500	Legal Machine Transcription	4
Spring Semester		
OAD 1260	Lotus 1-2-3 for the Administrative Assistant	3
OAD 2540	Law Office Practices	4
Summer Semester		
SPE 1111	Speech	3

SECOND YEAR

Fall Semester		Cr.
OAD 1010	Records and Database Management	4
OAD 1220	Beginning Wordperfect	4
Spring Semester		
OAD 1230	Advanced Wordperfect	4
	General Elective	3
Summer Semester		
	Social Science Elective	3

FOURTH YEAR

Fall Semester		Cr.
OAD 2400	Office Accounting	4
	Natural Science Elective or Math Elective	3
Spring Semester		
OAD 2800	Office Management	3
BUS 2310	Business Ethics	3
	Humanities Elective	3

PHOTOGRAPHY

Technical Certificate

The Nashville Tech Photography program provides the student with the most complete facility and curriculum in the region. Former students can be found in a variety of media positions in state and local government. Many others have found career opportunities as owners or employees of private media businesses. Both full- and part-time students of all ages comprise the growing Photography Department.

The facilities include a 22-enlarger black-and-white darkroom, a film processing lab, a color print lab with 20 individual darkrooms, a studio furnished with large format cameras and various lighting capabilities, a television studio and editing room, an audio recording facility, and a digital imaging lab.

The instructors bring to the classroom a wealth of experience and expertise in many phases of commercial and free-lance photography, audio engineering, and television and film production. The curriculum requires the student to acquire a thorough comprehension of the basic technical skills necessary to enter the job market.

Fall Semester			**Cr.**
PHO	1110	Basic Photography	3
PHO	1115	Photographic Visual Principles	3
PHO	1210	Black-and-White Photography I	3
COM	1210	Introduction to Electronic Media	3
Spring Semester			
PHO	1230	Color Lab Techniques I	3
PHO	1240	Studio and Lighting Techniques	3
PHO	1430	Portrait & Wedding Techniques	3
		Technical Elective	3
Summer Session			
PHO	1270	Portfolio Practicum	3
PHO	1320	Color Lab Techniques II	3
TOTAL REQUIREMENTS			**30**

Technical Electives			
COM	1230	Introduction to Digital Imaging	3
PHO	1120	Film and Video Production	3
PHO	1130	Audio Recording	3
PHO	1310	Black-and-White Photography II	3
PHO	1410	Nature Photography	3
PHO	1440	Medical Photography Techniques	3
PHO	1450	Individual Study	3
PHO	1460	Open Darkroom	3
PHO	1470	Photojournalism	3

Cooperative Education work experience in Photography can be an important addition to a student's formal classroom work. Co-op courses, if appropriate, may substitute for technical courses up to 6 credit hours with the prior approval of the department head. All Co-op work must have department head approval. The Co-op office will provide the correct course number. Students participating in Cooperative Education are encouraged to work a minimum of two terms. See page 103 for more information.

POLICE SCIENCE TECHNOLOGY

Associate of Applied Science

Police Science Technology trains individuals for careers in police administration and corrections management. Graduates of the degree program will have the skills and knowledge to seek employment in the field of criminal justice, including law enforcement, private security and corrections. The program is designed to provide the training needed for entry-level personnel and advancement opportunities for those presently employed in the field of corrections and law enforcement. The Police Science Technology program offers concentrations in Police Administration and Corrections Management.

POLICE SCIENCE TECHNOLOGY
(Police Administration Concentration)
COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
ENG 2112	Report Writing	3	0	3
SPE 1111	Speech	3	0	3
Humanities				
ENG 1112	Composition II	3	0	3
Mathematics				
MAT 1110	Business Mathematics	3	0	3
Natural Science Elective				
	Natural Science Elective	3	0	3
	Lab	0	2	1
Social Science Elective				
	Social Science Elective	3	0	3
Police Administration				
PST 1000	Introduction to Criminal Justice	3	0	3
PST 1010	Criminal Law and Procedure	3	0	3
PST 1020	Police Administration	3	0	3
PST 1030	Criminal Evidence	3	0	3
PST 2000	Drug Identification and Effects	3	0	3
PST 2010	Criminal Investigation	3	0	3
PST 2020	Police Firearms and Defensive Tactics	3	0	3
PST 2030	Seminar in Police Science Technology	3	0	3
Technical Electives (select 6 courses)				
AIS 1180	Introduction to Microcomputers	3	0	3
PST 1005	Introduction to Criminology	3	0	3
PST 1040	Unarmed Defensive Tactics	3	0	3
PST 1050	Tactical Shotgun	3	0	3
PST 1060	Basic Surveillance Techniques	3	0	3
PST 1070	Officer Survival	3	0	3
PST 1080	Interviewing & Interrogation Techniques	3	0	3
PST 1090	Traffic Accident Investigation	3	0	3
PST 2040	VIP Executive Protection	3	0	3
PST 2050	Police Tactical Training (SWAT)	3	0	3
PST 2060	Evidence Photography	3	0	3
PST 2070	Business & Industry Security	3	0	3
General Education Elective				
	*General Elective	3	0	3
	Total Required - Associate's Degree			**67**

*The General Elective may be any regular credit course. Continuing Education courses or other non-credit courses do not qualify.

POLICE SCIENCE TECHNOLOGY
(Police Administration Concentration)

FIRST YEAR

Fall Semester		Cr.
ENG 1111	Composition I	3
MAT 1110	Business Mathematics	3
PST 1000	Introduction to Criminal Justice	3
PST 1010	Criminal Law and Procedure	3
PST 1020	Police Administration	3
Spring Semester		
ENG 1112	Composition II (Humanities)	3
PST 1030	Criminal Evidence	3
	Technical Electives	6
	Natural Science Elective & Lab	4

SECOND YEAR

Fall Semester		Cr.
ENG 2112	Report Writing	3
PST 2000	Drug Identification and Effects	3
PST 2010	Criminal Investigation	3
	Social Science Elective	3
	Technical Electives	6
Spring Semester		
SPE 1111	Speech	3
PST 2020	Police Firearms and Defensive Tactics	3
PST 2030	Seminar in Police Science Technology	3
	Technical Electives	6
	General Elective	3

POLICE SCIENCE TECHNOLOGY
(Corrections Management Concentration)
COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
ENG 2112	Report Writing	3	0	3
SPE 1111	Speech	3	0	3
Humanities				
ENG 1112	Composition II	3	0	3
Mathematics				
MAT 1110	Business Mathematics	3	0	3
Natural Science Elective				
	Natural Science Elective	3	0	3
	Lab	0	2	1
Social Science Elective				
	Social Science Elective	3	0	3
Corrections Management				
PST 1005	Introduction to Criminology	3	0	3
PST 1015	Survey of Institutional Corrections	3	0	3
PST 1025	Community-Based Corrections	3	0	3
PST 2005	Constitutional Rights of Prisoners	3	0	3
PST 2015	Correctional Management	3	0	3
PST 2025	Probations, Pardons and Parole	3	0	3
PST 2035	Juvenile Procedures	3	0	3
Police Administration				
PST 1000	Introduction to Criminal Justice	3	0	3
PST 1010	Criminal Law and Procedure	3	0	3
PST 2000	Drug Identification and Effects	3	0	3
PSï 2020	Police Firearms and Defensive Tactics	3	0	3
PST 2030	Seminar in Police Science Technology	3	0	3
Technical Electives (select 2 courses)				
PST 1040	Unarmed Defensive Tactics	3	0	3
PST 1050	Tactical Shotgun	3	0	3
PST 1060	Basic Surveillance Techniques	3	0	3
PST 1070	Officer Survival	3	0	3
PST 1080	Interviewing & Interrogation Techniques	3	0	3
PST 2040	VIP Executive Protection	3	0	3
PST 2050	Police Tactical Training (SWAT)	3	0	3
PST 2060	Evidence Photography	3	0	3
General Education Elective				
	*General Elective	3	0	3
	Total Required - Associate's Degree			**67**

*The General Elective may be any regular credit course. Continuing Education courses or other non-credit courses do not qualify.

POLICE SCIENCE TECHNOLOGY
(Corrections Management Concentration)

FIRST YEAR

Fall Semester		Cr.
ENG 1111	Composition I	3
MAT 1110	Business Mathematics	3
PST 1000	Introduction to Criminal Justice	3
PST 1010	Criminal Law and Procedure	3
PST 1005	Introduction to Criminology	3
Spring Semester		
ENG 1112	Composition II (Humanities)	3
PST 1015	Survey of Corrections Institutions	3
PST 1025	Community-Based Corrections	3
	Technical Elective	3
	Natural Science Elective & Lab	4

SECOND YEAR

Fall Semester		Cr.
ENG 2112	Report Writing	3
PST 2000	Drug Identification and Effects	3
PST 2005	Constitutional Rights of Prisoners	3
PST 2015	Correctional Management	3
PST 2025	Probations, Pardons and Parole	3
	Social Science Elective	3
Spring Semester		
SPE 1111	Speech	3
PST 2020	Police Firearms and Defensive Tactics	3
PST 2035	Juvenile Procedures	3
	Technical Electives	3
	General Elective	3

SURGICAL TECHNOLOGY

Technical Certificate

The Surgical Technology Certificate is a two-semester program which trains individuals as surgical technologists. These individuals are specially trained members of the health care team who assist in a variety of ways in the operating room. Individuals completing this program will be eligible to sit for the national certifying exam given by the Association for Surgical Technologists. Upon passing the exam, individuals are designated as Certified Surgical Technologists. Application for certification is a graduation requirement. The student is responsible for the exam fee.

Job opportunities include operating rooms, clinics, labor and delivery departments, and sterile central supply departments. A high school diploma or equivalent and acceptable scores on the ACT or AAPP test are required for admission to the program. Medical forms are required for enrollment in the program, and students must have professional liability and health insurance. A "C" average or better in all courses is required to enter the second semester. Admission is based on GPA and interview. Due to limited enrollment, students should request application early. A letter with specific admission requirements will be sent to all qualified applicants.

SURGICAL TECHNOLOGY
COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
Biology				
BIO 1000	Medical Terminology	2	0	2
BIO 1002	Microbiology for Surgical Technology	2	0	2
BIO 1004	Basic Anatomy & Physiology	3	0	3
Chemistry				
CHE 1000	Basic Chemistry & Pharmacology	2	0	2
Allied Health				
ALH 1001	Introductory Surgical Technology	2	3	3
ALH 1002	Basic Skills Laboratory	3	0	1
ALH 1010	Clinical Experience for Surgical Technology	5	32	15
	Total Required - Certificate			31

SURGICAL TECHNOLOGY

Fall Semester		Cr.	Spring Semester		Cr.
ENG 1111	Composition I	3	ALH 1010	Clinical Experience for Surgical Technology	15
ALH 1001	Introductory Surgical Technology	3			
ALH 1002	Basic Skills Laboratory	1			
BIO 1000	Medical Terminology	2			
BIO 1002	Microbiology for Surgical Technology	2			
BIO 1004	Basic Anatomy and Physiology	3			
CHE 1000	Basic Chemistry and Pharmacology	2			

VISUAL COMMUNICATIONS

Associate of Applied Science

The visual communications industry represents the largest employment segment in the Nashville-Davidson County economy. The primary goal of the Visual Communications Associate's degree program is to train individuals to enter this evolving industry. Graduates from the Graphic Design Concentration of this program will be employed in jobs that require a combination of traditional graphic arts and design skills, along with electronic publishing and illustration abilities using computers and various software packages. Graduates from the Photography Concentration will use electronic imaging techniques to expand the capabilities of traditional methods. By blending skills from the areas of graphic design, photography, and electronic publishing, graduates of this program will be uniquely qualified to perform in the exciting field of visual communications.

VISUAL COMMUNICATIONS
(Graphic Design Concentration)
COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
SPE 1111	Speech	3	0	3
Humanities Elective				
HUM 1111	Appreciation of the Arts	3	0	3
Mathematics				
MAT 1110	Business Mathematics	3	0	3
Natural Science / Mathematics Elective				
	Natural Science or Math Elective	3	0	3
Social Science Elective				
	Social Science Elective	3	0	3
Photography				
PHO 1150	Photography I	3	0	3
Visual Communications				
COM 1110	Introduction to Visual Communications	3	0	3
COM 1111	Graphic Processes and Techniques	3	3	4
COM 1130	Graphic Design I	2	2	3
COM 1150	Type Concepts	2	2	3
COM 1170	Technology for Print Production	2	2	3
COM 1210	Introduction to Electronic Media	2	2	3
COM 1220	Graphic Design II	2	2	3
COM 1230	Introduction to Digital Imaging	2	2	3
COM 2110	Electronic Publishing	2	2	3
COM 2170	Visual Communications Portfolio	2	4	4
COM 2210	Electronic Design and Illustration	2	2	3
COM 2220	Electronic Publishing Practicum	2	2	3
Technical Elective (select 2 courses)				
	Technical Elective	6	0	6
General Education Elective				
	**General Elective			3
	Total Required - Associate's Degree			**68**

*Technical Elective to be chosen from any degree course with a COM, GRA, or PHO prefix.

**The General Elective may be any regular credit course. Continuing Education courses or other non-credit courses do not qualify.

VISUAL COMMUNICATIONS
(Graphic Design Concentration)

FIRST YEAR

Fall Semester		Cr.
ENG 1111	Composition I	3
COM 1111	Graphic Processes and Techniques	4
COM 1150	Type Concepts	3
COM 1210	Introduction to Electronic Media	3
PHO 1150	Photography I	3
Spring Semester		
SPE 1111	Speech	3
HUM 1111	Appreciation of the Arts	3
COM 1110	Introduction to Visual Communications	3
COM 1130	Graphic Design I	3
COM 1170	Technology for Print Production	3
COM 2110	Electronic Publishing	3

SECONDYEAR

Fall Semester		Cr.
COM 1230	Introduction to Digital Imagin	3
COM 1220	Graphic Design II	3
COM 2210	Electronic Design and Illustration	3
	General Elective	3
	Social Science Elective	3
	Natural Science Elective **or** Math Elective	3
Spring Semester		
MAT 1110	Business Mathematics	3
COM 2170	Visual Communications Portfolio	4
COM 2220	Electronic Publishing Practicum	3
	Technical Elective	3
	Technical Elective	

VISUAL COMMUNICATIONS
(Graphic Design Concentration)
RECOMMENDED PART-TIME EVENING SCHEDULE

FIRST YEAR

Fall Semester		Cr.
COM 1111	Graphic Processes and Techniques	4
COM 1150	Type Concepts	3
Spring Semester		
COM 1110	Introduction to Visual Communications	3
COM 1210	Introduction to Electronic Media	3
Summer Semester		
ENG 1111	Composition I	3
PHO 1150	Photography I	3

SECOND YEAR

Fall Semester		Cr.
COM 1130	Graphic Design I	3
COM 2110	Electronic Publishing	3
Spring Semester		
COM 1170	Technology for Print Production	3
HUM 1111	Appreciation of the Arts	3
Summer Semester		
SPE 1111	Speech I	3

THIRD YEAR

Fall Semester		Cr.
COM 2210	Electronic Design and Illustration	3
	Technical Elective	
Spring Semester		
COM 1220	Graphic Design II	3
	Social Science Elective	3
Summer Semester		
	General Elective	3
	Natural Science Elective **or** Math Elective	3

FOURTH YEAR

Fall Semester		Cr.
MAT 1110	Business Mathematics	3
COM 1230	Introduction to Digital Imaging	3
Spring Semester		
COM 2170	Visual Communications Portfolio	4
COM 2220	Electronic Publishing Practicum	3
Summer Semester		
	Technical Elective	3

Cooperative work experience in Visual Communications (Graphic Design Concentration) can be an important addition to a student's formal classroom work. Co-op courses, if appropriate, may substitute for technical courses up to 9 credit hours with the prior approval of the department head. All Co-op work must have department head approval. The Co-op office will provide the correct course numbers. See page 103 for more information.

VISUAL COMMUNICATIONS
(Photography Concentration)
COURSE REQUIREMENTS

		Class	Lab	Credits
English				
ENG 1111	Composition I	3	0	3
SPE 1111	Speech	3	0	3
Humanities				
HUM 1111	Appreciation of the Arts	3	0	3
Mathematics				
MAT 1110	Business Mathematics	3	0	3
Natural Science/Mathematics Elective				
	Natural Science or Math Elective	3	0	3
Social Science Elective				
	Social Science Elective	3	0	3
Photography				
PHO 1115	Photographic Visual Principles	3	0	3
PHO 1150	Photography I	3	0	3
PHO 1160	Photo Darkroom I	2	2	3
PHO 1230	Color Lab Techniques I	2	2	3
PHO 1270	Portfolio Practicum	2	2	3
PHO 1320	Color Lab Techniques II	2	2	3
PHO 1430	Portrait and Wedding Techniques	3	0	3
PHO 2260	Photography II	2	2	3
PHO 2270	Photo Darkroom II	2	2	3
Visual Communications				
COM 1110	Introduction to Visual Communications	3	0	3
COM 1111	Graphic Processes and Techniques	3	3	4
COM 1150	Type Concepts	2	2	3
COM 1210	Introduction to Electronic Media	2	2	3
COM 1230	Introduction to Digital Imaging	2	2	3
Technical Elective				
	Technical Elective	3	0	3
General Education Elective				
	**General Elective	3	0	3
	Total Required - Associate's Degree			**67**

Technical Elective to be chosen from any degree course with a COM, GRA, or PHO prefix.

**The General Elective may be any regular credit course. Continuing Education courses or other non-credit courses do not qualify.

Cooperative work experience in Visual Communications (Photography Concentration) can be an important addition to a student's formal classroom work. Co-op courses, if appropriate, may substitute for technical courses up to 9 credit hours with the prior approval of the department head. All Co-op work must have department head approval. The Co-op office will provide the correct course numbers. See page 103 for more information.

VISUAL COMMUNICATIONS
(Photography Concentration)

FIRST YEAR

Fall Semester		Cr.
ENG 1111	Composition I	3
COM 1111	Graphic Processes and Techniques	4
COM 1150	Type Concepts	3
COM 1210	Introduction to Electronic Media	3
PHO 1150	Photography I	3
Spring Semester		
HUM 1111	Appreciation of the Arts	3
SPE 1111	Speech	3
COM 1110	Introduction to Visual Communications	3
PHO 1115	Photographic Visual Principles	3
PHO 1160	Photo Darkroom I	3

SECONDYEAR

Fall Semester		Cr.
PHO 1230	Color Lab Techniques I	3
PHO 2260	Photography II	3
PHO 2270	Photo Darkroom II	3
	Technical Elective	3
	Social Science Elective	3
	Natural Science Elective or Math Elective	3
Spring Semester		
MAT 1110	Business Mathematics	3
COM 1230	Introduction to Digital Imaging	3
PHO 1320	Color Lab Techniques II	3
PHO 1430	Portrait and Wedding Techniques	3
PHO 1270	Portfolio Practicum	3

VISUAL COMMUNICATIONS
(Photography Concentration)
RECOMMENDED PART-TIME EVENING SCHEDULE

FIRST YEAR

Fall Semester		Cr.
COM 1111	Graphic Processes and Techniques	4
COM 1150	Type Concepts	3
Spring Semester		
COM 1110	Introduction to Visual Communications	3
COM 1210	Introduction to Electronic Media	3
Summer Semester		
ENG 1111	Composition I	3
PHO 1150	Photograpy	3

THIRD YEAR

Fall Semester		Cr.
PHO 2270	Photo Darkroom II	3
	Social Science Elective	3
Spring Semester		
PHO 2260	Photography II	3
	Technical Elective	3
Summer Semester		
	Natural Science Elective or Math Elective	3

SECOND YEAR

Fall Semester		Cr.
PHO 1160	Photo Darkroom II	3
PHO 1115	Photographic Visual Principles	3
Spring Semester		
PHO 1230	Color Lab Techniques I	3
HUM 1111	Appreciation of the Arts	3
Summer Semester		
SPE 1111	Speech	3

FOURTH YEAR

Fall Semester		Cr.
MAT 1110	Business Mathematics	3
COM 1230	Introduction to Digital Imaging	3
Spring Semester		
PHO 1320	Color Lab Techniques II	3
PHO 1430	Portrait and Wedding Techniques	3
Summer Semester		
PHO 1270	Portfolio Practicum	3

BUSINESS AND INDUSTRY TRAINING DIVISION

SPECIAL INTEREST COURSES

Each semester Nashville Tech, through the Business and Industry Training Division, offers over 100 special interest courses. These courses are designed primarily to assist in preparing individuals for new employment opportunities or to help improve the skills of the employed. Most of these courses are offered on a regular basis in phase with our semester schedule: Fall, Spring and Summer.

Besides our White Bridge Road location, we also have permanent sites established for the convenience of the public at Glencliff High School, McGavock High School, Antioch High School, Whirlpool Training Center at Interchange City in Lavergne, and Cookeville. Most courses are offered in the evenings and meet one night per week. These courses can also be offered at other times and locations by special request.

Typical course topics include:

- Accounting
- AutoCad
- Basic Medical Terminology
- Basic Blueprint Reading
- Board Drafting
- Building Codes
- Common Sense Grammar & Style
- Construction Estimating
- Crafting the Screenplay
- Creative Writing
- Desktop Publishing
- Electrical Code
- Financial Planning
- Floral Design
- FoxPro
- GED Preparation
- Industrial Electronics
- Inner Self Writing
- Introduction to Wall Street
- Keyboarding
- Landscaping
- Lotus 1-2-3
- Management for First Line Supervisors
- Microcomputer Literacy
- Microsoft DOS
- Microsoft Excel
- MicroStation CAD
- Networking
- Oil Painting
- Oscilloscopes & Troubleshooting
- Owning & Operating a Small Business
- PageMaker on the PC
- Painless Public Speaking
- Paradox
- Programmable Logic Controllers
- QuarkXPress
- Real Estate
- Residential Housewiring
- Stained / Art Glass
- Telecommunications
- Tooling and Machining
- Travel Agent
- VMS Operating Environment
- Windows
- Wordperfect
- Writing for Magazines

For more information on Special Interest Courses, please call 353-3255.

BUSINESS AND INDUSTRY TECHNICAL TRAINING, CENTER OF EMPHASIS

Nashville Tech's Business and Industry Technical Training Center of Emphasis specializes in the area of technical training for business and industry. The Center has the demonstrated ability to do needs analysis, develop course material and provide training for particular applications. The Center has worked with both large and small businesses and community organizations. Some of the courses developed and taught by the Center's faculty have been Programmable Logic Controllers, Ladder Logic, Motor Control, Industrial Electronics, Hydraulics and Pneumatics, and ISO 9000. The staff has also developed equipment specific training modules.

For more information, please call 353-3580.

COMPUTER RESOURCE AND TRAINING CENTER

The Computer Resource and Training Center offers a comprehensive variety of computer applications seminars. These half-day and full-day seminars are offered on a regular schedule throughout the year. Available classes include database management, desktop publishing, operating systems and environments, spreadsheets, and word processing. These classes, which generate continuing education units, can be customized to meet the needs of the customer. They are available on campus or at a customer's location on a contract basis.

For more information and a current schedule, please call 353-3405.

SCO TRAINING CENTER

Nashville Tech is an SCO Authorized Educational Center offering the following courses:

Introduction to SCO System V
SCO UNIX System V/386 Administration
Shell Programming for System Administrators
SCO TCP/IP and NFS: Administration and Configuration
Basic SCO System V Communication: Administration and Configuration
Applied SCO System V Support Workshop

For more information, please call 353-3543.

CONTRACT AND NON-CREDIT TRAINING

Nashville Tech provides on-going development of courses or seminars for business and industry to assist with special in-house training needs. Most of these courses and seminars are short term in nature, and are not on the regular semester format: nor do they generally carry a regular college credit. This training may occur on the Nashville Tech campus or on site. Specialized courses or seminars can be tailor-made to meet a company's specific needs or developed to meet public demand.

For more information, please call 353-3259.

REAL ESTATE COURSES

The real estate courses are designed for the local real estate industry in compliance with the educational objectives established by the Tennessee Real Estate Commission, Each course satisfies the educational requirements of the Tennessee Real Estate Broker's License Act of 1973 as amended.

Successful completion of the Tennessee Real Estate Exam is required before a person can sell real estate as an agent. RLE 0101, Real Estate Fundamentals, a sixty-hour course, qualifies a person to sit for the Affiliate Broker's Licensing Exam.

Students need to be aware that there are strict attendance policies for each course in order to be in compliance with the attendance requirements of the TREC.

Courses offered include:

RLE 0101 Real Estate Fundamentals
RLE 0114 Residential Appraising
RLE 0122 Real Estate Investments

For more information, please call 353-3255.

REAL ESTATE APPRAISAL COURSES

We are in the process of modifying our courses to meet the new requirements established by the Tennessee Real Estate Commission.

For more information, please call 353-3255.

CERTIFIED EMPLOYEE BENEFITS SPECIALIST (CEBS) PROGRAM

The CEBS program is a ten-course curriculum covering the entire spectrum of employee benefits. It has been designed to help individuals develop a comprehensive understanding of employee benefit principles and concepts.

Individuals who complete the CEBS program earn the professional designation Certified Employee Benefit Specialist, the most widely recognized and highly respected designation in the employee benefit field.

Individuals participating in the CEBS program represent a variety of backgrounds. Benefit managers, consultants, insurance company representatives, trust officers, administrators, attorneys, accountants, investment specialists and others interested in employee benefits should enroll in CEBS.

Three of the 10 classes are scheduled to coincide with exam dates in fall and spring semesters.

For more information, call 353-3255.

PLACEMENT AND COOPERATIVE EDUCATION

The Placement and Cooperative Education Office is responsible for assisting students, graduates and alumni with their employment needs. As a free service, it attempts to match the needs of employers with those of the student, graduate or alumnus. The office assists with part-time and full-time employment opportunities.

In addition, the office provides employment guidance and direct employment assistance to students and graduates of the college. It does not operate as an employment agency nor does it guarantee employment to those individuals registered with the office.

COOPERATIVE EDUCATION

Cooperative Education is a partnership between the college and the employment community which enables students to work in areas related to their major fields of study. The combination of academic studies in school and work experience on the job affords the Co-op student with added credentials to compete in the job market. Students may work part-time to receive 1.5 credits or full-time to receive 3.0 credits.

Any student interested in the Cooperative Education program is encouraged to apply. To qualify for the program, one of the following criteria must be met:

1. A minimum cumulative grade point average of 2.5 and the successful completion of the first semester within the student's major field of study.
2. Present work experience in a field related to the student's major.

To register for Co-op, a Co-op Packet is available in the Placement and Cooperative Education Office. Office personnel will assist the student in securing a work assignment in business, industry or government. Once the job is obtained, the student must complete a **Learning Agreement** and obtain a course number from the Co-op Office in order to receive academic credit for the work experience. Students should expect to pay for these academic credits since they are a part of their academic program of study. Grades for the co-op work experience are based on the successful completion of a paper about the work and an employer evaluation.

Students are encouraged to work a minimum of three semesters. Such a schedule allows them to develop self-esteem, explore real work environments in their major field, and appreciate the relationship between theory and practice. Students receive monetary compensation for their Co-op work experience.

PLACEMENT

Because having graduates employed in their chosen career field is important to the college, the Placement and Cooperative Education Office targets its efforts to assist graduates. Therefore, **all second-year students who will seek career employment at graduation should register with the office at the beginning of their last semester.** Registration consists of completing a Placement Packet followed by an appointment with the Director to discuss the placement process, the job market, and other services and materials available through the office.

Students can receive information about the latest employment and salary statistics of Nashville Tech graduates from the Placement and Cooperative Education Office.

ALUMNI RELATIONS

The Placement and Cooperative Education Office is responsible for coordinating alumni activities and for maintaining communications between alumni and the college. The alumni publication *AlumniNews,* a part of *Print-Out* magazine, provides information related to alumni activities, services and special events for all Nashville Tech graduates and is distributed regularly to them.

For more information, please call 353-3248.

ARTS AND SCIENCES DIVISION

The Arts and Sciences Division provides the general education courses which complement the student's technical preparation and also serve as transfer credit. General education courses include studies in the areas of communications, humanities, mathematics, and the natural sciences. The courses support and strengthen academic skills needed for success in the business and engineering technologies programs offered by the college and may be used as transfer courses to other colleges and universities. General education course requirements are listed in the suggested schedule for each program of study.

The division also administers the Occupational Therapy Assistant Technology degree program and the Surgical Technology certificate program.

ACADEMIC SKILLS DEPARTMENT

The Academic Skills Department assists students who need to strengthen their academic skills to ensure success in college-level courses. During the admissions process, degree-seeking and transfer students may be assessed with the AAPP test to determine whether or not remedial/developmental coursework is necessary prior to enrolling in college-level courses. Academic advising, counseling, writing and math labs, workshops, and regularly scheduled conferences with instructors and counselors help provide the skills students need to move into degree programs. If an academic deficiency is identified after students enter college-level courses, students are referred to the Academic Skills Department for evaluation.

ENGLISH, HUMANITIES AND SOCIAL SCIENCES DEPARTMENT
(Spanish Courses included)

English courses are offered in composition, business writing, speech, and literature. In some courses, students analyze samples of writing for organizational patterns, literary development, and modes of thought. Students gain practical experience in writing and speaking. Assignments frequently allow students to make use of their job experiences or technical backgrounds.

Humanities include courses in philosophy and art appreciation as well as the courses in Spanish and literature. Humanities courses help students to gain an appreciation of their cultural heritage and to appraise their personal values.

Social Sciences courses are offered in history, psychology, and sociology. In these courses, students increase their understanding of human nature within a historical context or in their social environments and personal lives as it affects communication and behavior. All the courses emphasize the need for organization and clear thinking in professional as well as in private life.

Spanish courses allow students to develop proficiency in understanding, speaking, reading, and writing Spanish.

Students cannot enroll in a degree-level English, Humanities, or Social Sciences course until any required remedial/developmental English or reading course has been completed.

MATHEMATICS AND NATURAL SCIENCES DEPARTMENT

The Mathematics and Natural Sciences Department offers courses to provide the student with the practical and applied skills which support the courses in the student's field of study. Job-related skills in business and industry are also introduced and reinforced in the department's courses.

Students in mathematics courses may be required to have a specific type of hand-held calculator with functions appropriate to the course.

Students cannot enroll in a degree-level mathematics course until any required remedial/developmental mathematics courses have been completed.

COURSE DESCRIPTIONS

AU courses which are offered as part of a technical certificate, associate's degree program, or general education core are listed and described briefly in this section of the catalog.

Each course is listed by its department prefix and course number. The courses are listed in alphabetical order by prefix. For example, the prefix for Computer Information Systems courses is CIS. AU Computer Information Systems courses are listed, from the lowest number to the highest number, under CIS.

If you do not know the prefix of the program in which you are interested, look at the suggested schedule in the Academic Program description. These academic programs are described on pages 37 to 100. The course prefix, number, and title of each course required in an academic program are shown.

The prefix for courses in each area are:

ACC	Accounting
ACT	Architectural Engineering Technology
AIS	Accounting Information Systems
ALH	Surgical Technology
AMT	Automotive Service Technology
ART	Automation-Robotics Technology
AVT	Audio-visual Technology
BIO	Biology
BNK	Banking
BUS	Business
CHE	Chemistry
CIS	Computer Information Systems
CIT	Civil Engineering Technology
COM	Visual Communications
CPT	Computer Technology
DSE	Developmental English
DSM	Developmental Mathematics
DSR	Developmental Reading
DSS	Developmental Study Skills
ECO	Economics
EET	Electrical-Electronic Engineering Technology
EMC	Electrical Maintenance
ENG	English
FIN	Finance
GEO	Geology
GRA	Graphic Arts
HIS	History
HUM	Humanities
IET	Industrial Engineering Technology
MAT	Mathematics
MET	Mechanical Engineering Technology
MKT	Marketing
OAD	Office Administration
OTT	Occupational Therapy Assistant Technology
PHI	Ethics
PHO	Photography
PHY	Physics
PSC	Physical Sciences
PST	Police Science Technology
PSY	Psychology
RSE	Remedial English
RSM	Remedial Mathematics
RSR	Remedial Reading
SOC	Sociology
SPA	Spanish
SPE	Speech
SSC	Personal Finance

ACCOUNTING

ACC 1104 PRINCIPLES OF ACCOUNTING I **4 Credits**
4 Class Hours

Designed for accounting majors to cover the basic principles of accounting theory and practice. Topics covered include accounting for sole proprietorship, service, and merchandising business enterprises. The processes of evaluation, journalizing, and posting are covered in depth. Work-sheets, financial statements, deferrals, accruals, voucher systems, payroll, and short-term financing are also covered.

Corequisite: MAT 1120* or *MAT 1160

ACC 1105 PRINCIPLES OF ACCOUNTING II **4 Credits**
4 Class Hours

A continuation of ACC 1104, this course is intended for accounting majors with emphasis on receivables, inventory, plant assets, partnerships, and corporate forms of business organization. Other topics covered include account controls, earnings, dividends, long-term investments, statements of cash flow, and an introduction to manufacturing operations.

Prerequisite: ACC 1104

ACC 2154 INTERMEDIATE ACCOUNTING I **4 Credits**
4 Class Hours

Principles, control, and theory of accounting for assets, correction of prior year's earnings, measurement, and determination of income are all covered.

Prerequisites: ACC 1105 with a grade of C or better and AIS 1138

ACC 2164 INTERMEDIATE ACCOUNTING II **4 Credits**
4 Class Hours

Covers the principles, control, and theory of accounting for liabilities and equities: preparation, utilization, and analysis of cash flow and fund statements; and financial ratios and statistical analysis of accounting data in financial statements.

Prerequisite: ACC 2154

ACC 2230 SERVICE INDUSTRY ACCOUNTING **3 Credits**
3 Class Hours

Covers accounting and budgeting practices and cost analysis procedures currently in use in the hospitality industry. *The Uniform System of Accounts for Small Hotels, Motels and Motor Hotels* is employed for the income statement. Characteristics of food and beverage control systems and their internal control devices are included. Lease accounting, tax implications of decision-making, and computer applications are taught.

Prerequisite: ACC 1104

ACC 2340 COST AND MANAGERIAL ACCOUNTING **4 Credits**
4 Class Hours

Designed to acquaint students with the development and use of cost accounting information in the decision-making process. Job order and process cost accounting systems are studied as well as decision making under conditions of uncertainty.

Prerequisites: ACC 1105, AIS 1138

ACC 2350 TAXATION **3 credits**
3 Class Hours

An introductory course to acquaint the student with taxation and the statutory concept of income. As an overview, the three primary tax returns - personal, partnership, and corporate - are covered. The subject of payroll taxes is also covered.

Prerequisite: ACC 1105

ACC 2380 MICROCOMPUTER ACCOUNTING APPLICATIONS **3 Credits**

2 Class Hours, 2 Laboratory Hours

Designed to set up an accounting system on the microcomputer using popular commercial accounting software. Students are expected to set up a computerized system, run parallel (manual and computerized) and print financial statements and all supporting schedules.

Prerequisites: ACC 1105 with consent of department head or ACC 2154, and AIS 1138

ACC 2550 FINANCIAL ACCOUNTING THEORY **3 Credits**

3 Class Hours

A critical examination of the concepts underlying accounting practices and the formulation and application of accounting principles. Evaluation of current literature relative to asset valuation and income determination is reviewed. This course is strongly recommended for any student wanting to sit for the Public Accountants Examination.

Prerequisite: ACC 1105

ACC 2740 AUDITING **4 Credits**

4 Class Hours

Emphasizes the traditional role of the attest function - rendering of an opinion on published financial statements. Topics covered include generally accepted auditing standards, professional ethics, and auditing procedures. The area of EDP Auditing is also introduced.

Prerequisite: ACC 1105

ARCHITECTURAL ENGINEERING TECHNOLOGY

ACT 1161 RESIDENTIAL DRAFTING AND CONSTRUCTION **4 Credits**

2 Class Hours, 6 Laboratory Hours

An introductory course in the basics of light construction systems. Lettering, architectural symbols, dimensioning systems, graphic systems and the use of drafting instruments and materials are studied. The student will prepare construction drawings and a study model for a small residence.

Corequisites: ENG 1111 and DSM 0803 or equivalent skills, CIT 1112

ACT 1341 COMMERCIAL DRAFTING AND CODES **3 Credits**

1 Class Hour, 6 Laboratory Hours

A study of the application of building codes to the construction process through drawings of code-conforming construction plans and details. Construction contracts, building permits, and the zoning process are investigated. The student will construct a study model for a small commercial building.

Prerequisite: ACT 1161

ACT 1391 HISTORY OF ARCHITECTURE **3 Credits**

3 Class Hours

Traces the development of construction techniques through historical periods. Emphasis is placed on idenufication features and the characteristics of construction during these periods. The course covers ancient architecture and the development of western architecture through the Renaissance and Baroque periods and concludes with the Modern and Post-Modern developments in contemporary architecture.

Corequisite: ENG 1111

ACT 1432 COMPUTER-AIDED DRAFTING I **3 Credits**

1 Class Hour, 4 Laboratory Hours

Designed to familiarize the student with computers and DOS, to teach the basic elements of computer-aided drafting, and to introduce the operation of a computer graphics system as it is used in professional practice. The student gains hands-on experience at the computer graphics

station while working on two-dimensional and three-dimensional drafting exercises and elementary site plans.
Cotequisites: CIT 1112 and MM 0803 or equivalent skills

ACT 1530 COMPUTER-AIDED DRAFTING II **3 credits**
6 Laboratory Hours

An intermediate level CAD class designed to follow ACT 1432 with more in-depth coverage of advanced features, productivity enhancing techniques, and an introduction to three-dimensional drawing. Topics include prototype drawings, polylines and polyline editing, dimensioning and advanced dimensioning features, hatching and advanced hatching features, use of blocks and layers, display options (including zooming and viewports), plotting and plotting set-up, elementary programming and introductory 3-D.
Prerequisite: ACT 1432

ACT 2160 BUILDING UTILITIES **3 Credits**
3 Class Hours

Designed to familiarize the student with elements of the Standard Plumbing Code, Mechanical Codes, and National Electrical Code. Topics include plumbing, mechanical and electrical symbols approved for drawings, definitions, minimum facilities, abbreviations, standard locations and sizes, minimum and maximum requirements, selected proper installations, estimate of loads and required services. The student solves practical problems in the layout and design of selected utilities for a single- or multi-family dwelling, a commercial location, and an industrial or a specialized location.
Prerequisite: MAT 1140

ACT 2241 ADVANCED ARCHITECTURAL DRAFTING **3 Credits**
1 Class Hour, 5 Laboratory Hours

Designed to enable the student to produce a complete set of construction drawings for a steel framed building. Sections of the building code applying to steel construction are studied. The student constructs a study model.
Prerequisites: ACT 1341, ACT 1432 and MAT 1140
Corequisite: ACT 1530

ACT 2440 SPECIFICATIONS AND ESTIMATING **3 credits**
2 Class Hours, 2 Laboratory Hours

Provides instruction in contracts and the use and importance of specifications for communication of construction requirements, with emphasis on the ability to prepare and to interpret selected sections of the specifications. The course also provides instruction in the development of procedures for preparing quality surveys. The topics include correlation of plans and specifications, CSI format, specification writing and conditions, specification interpretation, calculation of quantities of selected materials, labor considerations, pricing, take-off procedures, and development of quantity survey sheets.
Prerequisite: CIT 1220

ACT 2460 ADVANCED ARCHITECTURAL CAD **3 Credits**
9 Laboratory Hours

Designed to produce a complete set of construction drawings for a concrete framed building through team participation. Sections of the building code applying to concrete construction are studied. The student, with approval of the instructor, constructs one of the following: a study model, a perspective, an isometric, or a 3-D drawing of the project.
Prerequisite: ACT 2241

ACCOUNTING INFORMATION SYSTEMS

AIS 1138 MICROCOMPUTER SOFTWARE FOR BUSINESS **4 credits**
4 Class Hours

A one-semester course intended to introduce participants to the use of microcomputer software and hardware in the business environment. Topics covered include hardware and software selection, word processing, spreadsheet, database, graphics, and communications software.
Prerequisite: ACC 1105

AIS 1180 INTRODUCTION TO MICROCOMPUTING **3 Credits**
2 Class Hours, 2 Laboratory Hours

A first course in microcomputers, with particular emphasis on package software products as they affect end users.

AIS 2100 DECISION SUPPORT SYSTEMS **3 credits**
2 Class Hours, 2 Laboratory Hours

Provides instruction on how to design decision support systems which are based on historical and projected financial information.
Prerequisites: ACC 2154, AIS 1138

AIS 2600 SPREADSHEET PROBLEMS **3 credits**
3 Class Hours

An upper division course to teach students to solve a wide range of accounting and business application problems. Topics covered include construction and use of template for budgeting, control, and financial reporting.
Prerequisites: ACC 1105, AIS 1138

AIS 2680 SEMINAR IN CURRENT MICROCOMPUTER TOPICS **4 Credits**
4 Class Hours

Designed to update the student on the most recent developments in microcomputing. Emphasizes current developments in microcomputer hardware, software, and operating systems and their utilization in the business environment.
Prerequisite: AIS 1138

AIS 2700 WINDOWS SOFTWARE **4 credits**
4 Class Hours

This course is intended to teach students the "docucentric" approach to using windows software. Users are instructed in using OLE and DDE to create compound and linked documents. In addition, user tools such as Object Vision and Toolbox are used to create complex applications which use objects created in standard Windows software. The process of organizing the desktop and using alternatives to the standard user interfaces provided by Windows are also covered.
Prerequisites: ***AIS 1180 and AIS 1138***

AIS 2780 EDP AUDITING **4 Credits**
4 Class Hours

A course in EDP Auditing for persons who desire more in-depth knowledge after completing ACC 2740, Auditing. Particular emphasis is placed on auditing in a microcomputer environment.
Prerequisite: ACC 2740

AIS 2840 ACCOUNTING INFORMATION SYSTEMS **4 credits**
4 Class Hours

Designed to provide the student with an in-depth review of accounting information systems, the importance and implementation of internai controls in both manual and computerized information systems. Students are given hands-on experience using one of the commercial data base management systems to design and build actual systems.
Prerequisites: ACC 2154, ACC 2740 and AIS 1138

AIS 2850 TROUBLESHOOTING **4 credits**

4 Class Hours

Intended as a capstone course for students majoring in the microcomputer applications option. Students are taught to troubleshoot the various problems associated with running software in both the DOS and Windows environment. The various software tools currently on the market which are used to troubleshoot hardware and software problems are used to locate problems created by the instructor. In addition, students develop checklists which allow them to develop the logical process necessary to troubleshoot any problem in technology.

Prerequisites: AIS 1138 and AIS 2700

AIS 2900 VISUAL BASIC FOR APPLICATIONS **3 credits**

3 Class Hours

This one semester course is intended to give students an in-depth introduction to visual basic for applications which has become the de facto standard macro language used in the Microsoft Windows Environment. Students create macros and design systems integrating the Microsoft Office Professional software products.

Prerequisite: AIS 2700 or consent of instructor

SURGICAL TECHNOLOGY

ALH 1001 INTRODUCTORY SURGICAL TECHNOLOGY **3 Credits**

2 Class Hours, 3 Laboratory Hours

Introduces the student to the basic concepts and skills required in surgical technology. Topics include historic, legal, and ethical aspects of surgery; coping with death, dying, and transplant technology; and the role of the surgical technologist in the health care team and in dealing with the patient. Major emphasis is placed on the identification and handling of surgical instruments and equipment. The surgical hand scrub, gowning and gloving, and safety procedures are also included.

Prerequisites: DSR 0853 or equivalent skills, RSM 0703 or equivalent skills

ALH 1002 BASIC SKILLS LABORATORY **1 Credit**

3 Laboratory Hours

Designed to complement ALH 1001, Introduction to Surgical Technology. Students receive additional time to practice the skills and concepts introduced in ALH 1001. Open gloving, positioning, draping, prepping, vital signs, measuring using the metric system, gowning and gloving the surgeon, preparing material for sterilization, and discovering sources of bacterial contamination will be covered. Students will receive some additional practice with handling instruments.

Prerequisites: DSR 0853 or equivalent skills, RSM 0703 or equivalent skills
Corequisite: ALH 1001

ALH 1010 CLINICAL EXPERIENCE FOR SURGICAL TECHNOLOGISTS **15 Credits**

5 Class Hours, 32 Laboratory Hours

Provides practical experience in surgical technology duties. Students observe general surgery and scrub under supervision on selected cases. The surgical specialty areas of gynecology, urology, cardiovascular, plastic, otolaryngology, ophthalmology, neurosurgery, and orthopedic services are also covered.

Prerequisites: All academic coursework and program director approval are required before taking ALH 1010

AUTOMOTIVE SERVICE TECHNOLOGY

AMT 1110 AUTOMOTIVE SERVICE **2 Credits**

1 Class Hour, 3 Laboratory Hours

Introduces shop operation, customer relations, flat rate manuals, safety, organizational design, pay structure, equipment, tools, and basic operational theories. Emphasis is placed on the prop-

er use of hand tools, measuring instruments, and equipment. Also included are service procedures for lubrication, batteries, the cooling system, wheels and tires, and new car pre-delivery service.

Prerequisite: DSM 0813 or equivalent skills

AMT 1122 STANDARD TRANSMISSIONS/DRIVE LINES/DIFERENTIALS **3 Credits**

2 Class Hours, 3 Laboratory Hours

A study of automotive drive shafts, universal joints, axles, differentials, bearings and seals, and standard shift transmissions.

Prerequisite: AMT 1110

AMT 1124 AUTOMOTIVE BRAKES **3 Credits**

2 Class Hours, 2 Laboratory Hours

A detailed study of types of braking systems and their service requirements. Machine turning of brake drums and rotors is included. Emphasis is on system operation, diagnosis, adjustment, testing, replacement, and repair procedures.

Prerequisite: AMT 1110

AMT 1126 SUSPENSION AND STEERING **3 Credits**

2 Class Hours, 2 Laboratory Hours

Involves the study of suspension systems with emphasis on wheel alignment and suspension rebuilding.

Prerequisite: AMT 1110

AMT 1220 FORD ELECTRICAL SYSTEMS **4 Credits**

3 Class Hours, 2 Laboratory Hours

Covers the automobile electrical system including batteries, wiring, lighting, alternators, generators, starters, and voltage regulators. Course covers the use of electrical test equipment and schematics and stresses the proper care and use of tools.

AMT 1310 AUTOMOTNE ENGINES I **5 Credits**

3 Class Hours, 4 Laboratory Hours

Studies the operational theory of the internal combustion engine. Course introduces engine rebuilding, mechanical diagnosis, and failure analysis.

Prerequisite: AMT 1110

AMT 1320 GM AUTOMOTIVE ENGINES I **3 Credits**

2 Class Hours, 3 Laboratory Hours

Studies the operational theory of the internal combustion engines currently in use in General Motors vehicles. Course introduces engine rebuilding, mechanical diagnosis, and failure analysis.

Prerequisite: AMT 1110

AMT 2110 FORD ELECTRONIC SYSTEMS/COMPUTERS **4 Credits**

3 Class Hours, 2 Laboratory Hours

An introduction to electronic devices (transducers) and associated computers used to regulate, monitor, and control various systems on Ford Motor Company vehicles.

Rerequisite: AMT 1220

AMT 2120 AUTOMATIC TRANSMISSIONS I **3 Credits**

2 Class Hours, 3 Laboratory Hours

Covers the theory, operation, and diagnosis of automatic transmissions. Course introduces rebuilding of automatic transmissions.

Prerequisite: AMT 1122

AMT 2210 AUTOMATIC TRANSMISSIONS II **3 Credits**

2 Class Hours, 3 Laboratory Hours

A continuation of Automatic Transmissions I. Transmission rebuilding is covered with emphasis on in-service automobile repair.

Prerequisite: AMT 2120

AMT 2215 FORD AUTOMATIC TRANSMISSIONS II **2 Credits**

1 Class Hour, 3 Laboratory Hours

A continuation of Automatic Transmissions I with an emphasis on in-service Ford transmission repair.

Prerequisite: AMT 2120

AMT 2220 FORD ENGINES II **2 Credits**

1 Class Hour, 2 Laboratory Hours

A continuation of Engines I, AMT 1310. The course focuses on techniques of engine rebuilding for engines used in Ford automobiles.

Prerequisite: AMT 1310

AMT 2225 AUTOMOTWE ENGINES II **2 Credits**

1 Class Hour, 2 Laboratory Hours

A continuation of Engines I, AMT 1310. This course focuses on the techniques of engine rebuilding.

Prerequisite: AMT 1310

AMT 2250 DIESEL ENGINE OPERATIONS **2 Credits**

1 Class Hour, 2 Laboratory Hours

Designed to teach operational concepts, repair, and driveability problem solutions related to diesel engine operations.

Prerequisite: AMT 1310 or AMT 1320

AMT 2310 FUEL AND EMISSIONS **3 Credits**

2 Class Hours, 3 Laboratory Hours

Covers the principles and functions of the automotive fuel system including the carburetor, fuel pump, gas tank, and emission control systems. Course stresses diagnosis, repair, and adjustment of emission control systems, repair and adjustment of the carburetor, fuel injection, and their components.

Prerequisite: ***AMT 1310***

AMT 2315 FORD FUEL *AND* EMISSIONS **2 Credits**

1 Class Hour, 3 Laboratory Hours

Covers the principles and functions of the Ford vehicle automotive fuel system. Course stresses diagnosis, repair and adjustment of the entire system including emission control devices.

Prerequisite: AMT 1110

AMT 2320 AUTOMOTIVE UPDATE **1 Credit**

1 Class Hour

The find segment of the automotive program is devoted to a discussion of the newest products and plans for these products.

Prerequisite: AMT 1310

AMT 2330 CLIMATE CONTROL **4 Credits**

3 Class Hours, 2 Laboratory Hours

Focuses on the principles of operation and service techniques applied to automobile heating and air conditioning systems. Topics include components, testing, diagnosing, charting, and repair practices.

Prerequisite: AMT 1220 or EET 1190 or EET 1192

AMT 2340 FORD ENGINE ANALYSIS AND TUNE-UP **4 Credits**

3 Class Hours, 2 Laboratory Hours

Covers techniques for diagnosing the automobile engine and other areas and stresses electronics and conventional ignition systems. Carburetion and injection systems are introduced. Complete tune-up procedures, using the latest test equipment, are studied to insure proper application to the automobile.

Prerequisite: AMT 2110

AMT 2345 ENGINE PERFORMANCE AND TESTING **1 credit**

2 Laboratory Hours

Designed to teach the student concepts of engine driveability. Instructor will explain common faults found in working engines, along with appropriate repair and alignment procedures.

Prerequisite: EET 2192

AMT 2350 DEVELOPMENTAL PROJECT **2 Credits**

2 Class Hours

Illustrates automotive developmental concepts as they relate to future computer uses in automotive design.

Prerequisite: EET 2292

AMT 2360 FORD AUTOMOTIVE PROJECT **2 Credits**

2 Class Hours

Illustrates automotive developmental concepts as they relate to future computer uses in automotive design.

Prerequisite: AMT 2110

AUTOMATION-ROBOTICS TECHNOLOGY

ART 2510 INSTRUMENTATION AND AUTOMATION CONTROL DEVICES **4 Credits**

3 Class Hours, 2 Laboratory Hours

Provides an understanding of motors, motor control circuits, and related instrumentation as applied to automation. Primary concentration is devoted to specific devices such as servomotors, optical encoders, programmable controllers, and computer interfaces as would be used in controlling such devices. Equipment studied includes robots and various types of computer numerical control (CNC) machines.

Prerequisite: EET 1210

ART 2710 INTRODUCTION TO AUTOMATED SYSTEMS AND ROBOTS **4 Credits**

3 Class Hours, 3 Laboratory Hours

Introductory course in the terminology, development, status, and future trends of modern automated industrial systems, including robots. Class studies various training robots and three industrial robots. Students learn and use IBM's AML/E programming language. Course introduces programmable controllers and automated systems integration. Safety considerations are an important part of this course.

Prerequisites: CIS 2215 and CPT 1400

ART 2810 INTEGRATING AND TROUBLESHOOTING AUTOMATED SYSTEMS **4 Credits**

3 Class Hours, 3 Laboratory Hours

A continuation of topics covered in ART 2710. Students apply knowledge in electronics, mechanisms, automation, programmable controllers, and fluid power to integrate automated systems. Proper corrective techniques are discussed and extensively applied. Laboratory exercises include integrating various components into manufacturing systems and troubleshooting these systems. Safety considerations are an important part of this course.

Prerequisite: ART 2710

BIOLOGY

BIO 1000 MEDICAL TERMINOLOGY **2 credits**
2 Class Hours

Includes a study of roots, prefixes, and suffixes commonly used in the medical field and terminology related to body systems and disorders. Course is for certificate programs.

BIO 1002 MICROBIOLOGY FOR SURGICAL TECHNOLOGY **2 Credits**
2 Class Hours

Introduces microbial techniques and concepts. Course emphasizes application of these concepts to the operating room environment and personnel. Topics include an overview of microorganisms and their implication in disease, use and monitoring of the autoclave, and the control of microorganisms in the hospital environment. Course is for certificate programs.
Prerequisite: DSR 0853 or equivalent skills

BIO 1004 BASIC ANATOMY AND PHYSIOLOGY **3 credits**
3 Class Hours

Introduces the structure and function of the human body. Covers skeletal, muscular, nervous, endocrine, immune, cardiovascular, respiratory, excretory, and reproductive systems. Emphasizes interrelationships, malfunctions and diseases of cells, tissues, organs, and organ systems. Course is for certificate programs.
Prerequisite: DSR 0853 or equivalent skills

BIO 1010 BIOLOGY **3 Credits**
3 Class Hours

Introduces the biological sciences. Topics include cell structure and function, cellular chemistry, cell reproduction, genetics, and ecosystems. This course may not transfer without the associated laboratory.

BIO 1011 BIOLOGY LABORATORY **1 Credit**
2 Laboratory Hours

A laboratory course to accompany BIO 1010. Topics include microscopy, plant and animal cell structure and physiology, genetics, and energy systems.
Prerequisite or Corequisite: BIO 1010

BIO 1130 ANATOMY AND PHYSIOLOGY I **3 credits**
3 Class Hours

Designed primarily for students in allied health fields and those interested in the biological sciences. Topics include cell structure and physiology, tissues, integument, skeletal, muscular and nervous systems.
Prerequisite: ***DSR 0853***
Cotequisite: BIO 1131

BIO 1131 ANATOMY AND PHYSIOLOGY LABORATORY I **1 Credit**
2 Laboratory Hours

A laboratory course to accompany BIO 1130.
Corequisite: BIO 1130

BIO 1140 ANATOMY AND PHYSIOLOGY II **3 Credits**
3 Class Hours

The anatomy and physiology of the endocrine, cardiovascular, respiratory, reproductive, immune and urinary systems are covered.
Prerequisite: BIO 1130
CotequiSite: BIO 1141

BIO 1141 ANATOMY AND PHYSIOLOGY LABORATORY II **1 Credit**
2 Laboratory Hours

A laboratory course to accompany BIO 1140.
Corequisite: BIO 1140

BIO 2000 ENVIRONMENTAL BIOLOGY **3 credits**
3 Class Hours

Designed to acquaint the student with environmental problems, ecosystems, and human populations. The availability and conservation of natural resources, living resources, and energy resources are covered. The politics and economics of world resources will be discussed.
Corequisite: BIO 2001

BIO 2001 ENVIRONMENTAL BIOLOGY LABORATORY **1 Credit**
2 Laboratory Hours

Laboratory to accompany BIO 2000. Populations, water and air pollution, conservation of resources, and environmental concerns are emphasized.

BIO 2010 MICROBIOLOGY **3 Credits**
3 Class Hours

Provides a foundation in bacteriology. Topics covered include microbial structure, growth, metabolism, genetics, and the role of microorganisms in disease with sections on applied microbiology and medically significant fungi and viruses.
Corequisite: ***BIO 2011***

BIO 2011 MICROBIOLOGY LABORATORY **1 credit**
2 Laboratory Hours

Laboratory course to accompany microbiology. Aseptic techniques, staining, growth media and conditions, and identification of bacteria and fungi are stressed.
Corequisite: BIO 2010

BANKING

BNK 1110 PRINCIPLES OF BANKING **3 Credits**
3 Class Hours

An overview of banking services and functions, including loans, investments, and trust operations. Covers basic principles of banking transactions and item processing, focusing on deposit and payment functions of banking. The student deals directly with procedures and forms relative to opening accounts, cash and collection item processing, proof operations, paying and returning checks, and bookkeeping functions. Course also emphasizes internal controls and external regulations.
Prerequisites: DSR 0853

BNK 1210 CONSUMER LENDING **3 credits**
3 Class Hours

A study of the fundamental principles of extending consumer credit. The practical approach is taken by actually studying and practicing taking loan applications, verifying credit histories, evaluating credit reports, making credit decisions, processing and disbursing the loan, and recognizing the importance of collateral. Also included are exercises in computing interest charges and rebates, insurance of consumer credit, pricing of loans, collections, and consumer compliance.
Prerequisite: DSR 0653 and RSM 0703

BNK 1215 COMMERCIAL BANK MANAGEMENT **3 Credits**
3 Class Hours

The study and application of principles outlined provide students with a working knowledge of bank management. Course touches on objectives, planning, structure, control, and the interre-

lationship of various bank departments. Also included are trends that have emerged in philosophy and practice of bank management. Case studies stress current bank problems.
Prerequisite: DSR 0853

BNK 2110 MONEY AND BANKING **3 credits**
3 Class Hours

Presents basic economic principles most closely related to the subject of money and banking. Course stresses the practical application of the economics of money and banking in the individual bank and in the banking system. Some of the subjects covered include the structure of the commercial banking system; the nature and functions of money; banks and the money supply: the money market and the capital market: bank investments, loans, earnings, and capital; the Federal Reserve System, its policies and operation; Treasury Department operations: and the changing international monetary system.
Cotequisite: ECO 1111

BNK 2115 NEGOTIABLE INSTRUMENTS **3 Credits**
3 Class Hours

Explores the relevant legal implications of the normal activities and transactions in bank operations. Course is designed to teach legal principles related to negotiable instruments and to influence attitudes of bank personnel by providing information about the impact of the law and applicable bank regulations. Highlights include holder in due course, check losses, and liability. Instructor uses illustrative cases extensively.
Prerequisite: DSR 0853

BNK 2210 THE TRUST BUSINESS **3 Credits**
3 Class Hours

Presents a complete picture of the services and duties of institutions engaged in the trust business. Course is an excellent overview of wills, trust agreements, property ownership, and investments of trust departments. Class discusses the organization and history of the trust business.
Prerequisite: DSR 0853

BNK 2230 INVESTMENT BASICS **3 credits**
3 Class Hours

Provides basic information on investments in securities, options, commodities, tax shelters, art, and more. Explores traditional and modern methods of analyzing investment opportunities for the beginning investor. Students will also trade in the securities market (using real prices and making their own decisions) by using a special microcomputer software package.
Prerequisites: DSR 0853 and RSM 0703 or equivalent skills

BUSINESS

BUS 1113 INTRODUCTION TO BUSINESS **3 Credits**
3 Class Hours

Acquaints students with the private enterprise system. Topics covered include forms of business organizations, business finance, human resource management, production, marketing, business ethics, information management, and the changing business environment.
Prerequisites: DSR 0853 and RSM 0703 or equivalent skills

BUS 1262 FUNDAMENTALS OF BUSINESS INSURANCE **3 Credits**
3 Class Hours

Covers fundamental principles of risk and risk management as they apply to small business. Concepts of the nature of risk and risk bearing, how insurance handles risk, and risk management will be taught. Course content includes liability, transportation, workman's compensation, life and health, bonds, fire and marine, and employee benefit plans.
Prerequisite: DSR 0853 or equivalent skills

BUS 1500 ENTREPRENEURSHIP **3 Credits**
3 Class Hours

Explores the nature of small business. Entrepreneurial alternatives such as startup, buyout, and franchising are discussed. Preparing a business plan, choosing a form of ownership, small business marketing, and operations are stressed. Financial and administrative controls as well as the social and legal environment of business are introduced.

Prerequisites: DSR 0853 and RSM 0703 or equivalent skills

BUS 2250 HUMAN RESOURCE MANAGEMENT **3 Credits**
3 Class Hours

Provides information about basic principles of managing human resources: human resource planning, job analysis, job specifications, employee selections, orientation and placement, training and development, evaluation, compensation, employee benefits, and labor relations. Current techniques used to improve productivity and morale.

Prerequisite: DSR 0853 or equivalent skills

BUS 2310 BUSINESS ETHICS **3 Credits**
3 Class Hours

Introduces basic ethical theories and value systems and applies these perspectives to moral issues, problems, and situations which arise within the business environment. Course encompasses codes of ethics, conflict of interest, social responsibility, the work ethic, white collar crime, and fiduciary responsibilities.

Prerequisites: DSR 0853 and RSE 0733 or equivalent skills

BUS 2311 LEADERSHIP **3 credits**
3 Class Hours

Explores the nature and attributes of leadership through case studies and biographies. Examines the difference between leadership ability and management skills. Attempts to identify traits and abilities which have distinguished effective leaders from ineffective ones.

Prerequisite: DSR 0853 or equivalent skills

BUS 2400 PRINCIPLES OF MANAGEMENT **3 Credits**
3 Class Hours

An overview of how a business organization works and the relationships of the people within the organization. Develops the topics of managerial functions, motivation of employees, the decision-making process, communication, authority, responsibility and personnel management through class discussion and case studies.

Prerequisites: DSR 0853 and RSE 0733 or equivalent skills

BUS 2600 BUSINESS LAW: CONTRACTS AND COMMERCIAL TRANSACTIONS **3 Credits**
3 Class Hours

Introduces the study of law in relation to the proper conduct of business, including the nature and source of law, courts and courtroom procedure, contracts, sales, commercial paper, agency, and government regulations.

Prerequisites: DSR 0853 and RSE 0733 or equivalent skills

BUS 2610 BUSINESS LAW PROPERTY AND COMMERCIAL ORGANIZATIONS **3 Credits**
3 Class Hours

Introduces the study of law in relation to the proper conduct of business, including debtor-creditor relations, forms of business organization, franchising, securities regulation, property, wills and estates, trusts, international business, and intellectual property.

Prerequisites: DSR 0853 and RSE 0733 or equivalent skills

CHEMISTRY

CHE 1000 BASIC CHEMISTRY AND PHARMACOLOGY **2 credits**
2 Class Hours

Familiarizes surgical technologists with the substances used to induce and maintain local and general anesthesia. Anesthetic shock and its treatment, anticoagulants, antibiotics, and irrigation solutions will also be discussed. Additional topics include basic chemical concepts as they apply to these substances and the metric system. Course is for certificate programs.
Prerequisite: DSR 0853 or equivalent skills, RSM 0703 or equivalent skills

CHE 1050 CHEMISTRY **3 Credits**
3 Class Hours

Emphasizes basic chemical principles and their application to technical and environmental problems. Topics include properties of matter, elements and compounds, atomic structure, periodic properties, chemical bonds, reactivity, energy, raw materials, organic chemicals, polymers, toxic substances, and chemistry of the air and water.

CHE 1051 CHEMISTRY LABORATORY **1 Credit**
3 Laboratory Hours

Laboratory exercises to accompany CHE 1050.

CHE 1110 INTRODUCTORY GENERAL CHEMISTRY I **4 credits**
3 Class Hours, 2 Laborato y Hours

Includes fundamental concepts of chemistry, atomic and molecular structure, nomenclature, states and properties of matter, chemical bonds, kinetic theory, and gas laws.

CHE 1120 INTRODUCTORY GENERAL CHEMISTRY II **4 Credits**
3 Class Hours, 2 Laboratory Hours

A continuation of CHE 1110. Topics include solutions, acids, bases, salts, colloids, oxidation and reduction reactions, and an introduction to organic chemistry.
Prerequisite: CHE 1110

COMPUTER INFORMATION SYSTEMS

CIS 1010 INTRODUCTION TO ELECTRONIC DATA PROCESSING **3 credits**
3 Class Hours

An overview of electronic data processing. Major subjects include historical development, number systems, data representation, hardware, software, computer concepts, and types of programming languages. Emphasizes essential principles and functions rather than specific details of the machine. Includes hands-on activities on the microcomputer.
Prerequisite: RSR 0753

CIS 1020 COMPUTING ENVIRONMENTS **3 Credits**
3 Class Hours

Introduces students to computer hardware, operating environments, and procedures for utilizing computer resources. Environments include DOS, Windows, Vax's VMS, and IBMs OS/MVS. Text editors such as SPFPC, EDIT and ISPF are examined and utilized in constructing testing procedures for the various environments. Students are also instructed on moving files between the various environments.

CIS 1030 PROGRAM LOGIC AND DESIGN I **4 Credits**
4 Class Hours

Designed to provide the basic logic necessary in business applications programming. In addition to logic, course covers correct techniques of structured design, flowcharting, and other methods of illustrating logic.

Prerequisite: RSM 0703
Corequisite: CIS 1020

CIS 1120 ASSEMBLER LANGUAGE PROGRAMMING **4 Credits**
4 Class Hours

A comprehensive treatment of symbolic machine assembly language concepts employing the IBM System OS/MVS/XA Assembler Language. Course emphasizes a thorough understanding of the System ES-9000 hardware, standard and decimal instruction set, input/output operations, and the use of the storage dumps in the program debugging. Several business applications are flowcharted, programmed, and run on the computer.

Prerequisite: CIS 1030

CIS 1130 PASCAL **3 Credits**
3 Class Hours

Introduces the various programming concepts of Pascal using business applications. Emphasizes problem-solving methods and algorithm development. Students gain experience in the design, debugging, and documentation of programs using structured programming techniques.

Prerequisite: *CIS 1030*

CIS 2010 ANS COBOL PROGRAMMING **4 Credits**
4 Class Hours

Introduces various programming concepts, using structured program design and structured coding by means of a series of programs illustrating typical business applications. Topics include sequential disk processing, file maintenance, table processing, and the use of library facilities.

Prerequisite: CIS 1120

CIS 2110 SYSTEMS DESIGN AND DEVELOPMENT **3 Credits**
3 Class Hours

Designed to present the tools, techniques, and concepts needed by analysts to develop information systems in the rapidly changing business environment. It includes systems development methodologies, data dictionaries and codes, user interface and terminal dialogue design, physical data flow diagrams, logical data flow diagrams, data modeling with entity relationships diagrams and data-base design.

Prerequisites: Two programming languages

CIS 2120 OPERATING SYSTEMS **3 Credits**
3 Class Hours

Explores individual features of operating systems. Students are exposed to how basic operating system functions are implemented at the micro, midrange, and mainframe platform levels. Topics covered are job control, supervisors, libraries, and utilities. This course presents a cohesive functional picture of complete computer systems.

Prerequisite: CIS 1120

CIS 2130 RPG PROGRAMMING **3 Credits**
3 Class Hours

A comprehensive treatment of RPG II, RPG III and RPG/400 concepts utilizing the IBM System AS400. Emphasis is placed upon the understanding and coding of specification forms and the concepts involved in writing programs in a structured format for typical business applications. Areas covered are fundamentals, control breaks, multiple record types, exception output, tables and arrays, matching records, sequential, indexed files, and interactive screen handling.

Prerequisite: CIS 1120

CIS 2140 ANS COBOL APPLICATIONS **5 Credits**

5 Class Hours

A study of more comprehensive methods and problems using Common Business Oriented Language. Students learn advanced programming techniques using structured program design by using disk in sequential and index sequential. Several business problems will be presented and solved by the students using various file arrangements, sorts, and input/output devices.

Prerequisite: CIS 2010

CIS 2150 INTRODUCTION TO CICS PROGRAMMING **4 credits**

4 Class Hours

Introduces the fundamentals of CICS/ESA systems and CICS/ESA command level programming in COBOL. Topics include the structure of a CICS/ESA system, the task flow in the CICS/ESA system, the main CICS/ESA control programs, the main CICS/ESA control tables, the command level commands used in program control, BMS mapping, file control, storage control, etc., and the coding techniques used in pseudo-conversational mode of processing. Video terminals are utilized as tools in understanding the design and programming of several data communication applications using CICS/ESA command level programming.

Prerequisite: CIS 2010

CIS 2160 DATA BASE PROGRAMMING **4 credits**

4 Class Hours

Introduces the fundamentals of data base programming on mainframes. Acquaints students with the concepts, structure, and programming of a popular data base management system. Students write several programs, using COBOL, to access the data base system. Students are also exposed to an interactive query facility and the use of SQL for generating on-line reports and inquiries.

Prerequisite: CIS 2010

CIS 2215 BASIC PROGRAMMING FOR ENGINEERING TECHNOLOGIES **2 Credits**

1 Class Hour, 2 Laboratory Hours

Presents the BASIC programming language and instruction in the development and execution of computer programs for the solution of technical problems on the microcomputer. Introduces flowcharting and pseudocode as a means of organizing the logical solutions to problems and documenting solutions. Presents output formatting and simple plotting techniques for students to practice.

Corequisite: MAT 1140

CIS 2216 C LANGUAGE FOR ENGINEERING TOPICS **2 Credits**

1 Class Hour, 2 Laboratory Hours

Presented as an introduction to the C programming language. Technical programs are coded that exercise the various aspects of the language such as flow of control, input and output, arithmetic operations, and function definitions and calls. An introduction to program logic and design is presented using flowcharting and pseudocode to organize the program solution.

Corequisite: MAT 1140

CIS 2217 VISUAL BASIC **4 credits**

4 Class Hours

Designed to prepare the student to create attractive and useful business applications for the Microsoft Windows Environment. Students learn to create user interfaces by selection and placement of objects on the user screen, to set priorities on those objects to refine their appearance and behavior, and to write code procedures to react to events that occur in the user interface. Typical business applications are assigned to allow students to develop skills in the use of ransom file processing, database access, Dynamic Data Exchange (DDE), and Object Linking and Embedding (OLE).

Prerequisite: CIS 2010

CIS 2220 C LANGUAGE PROGRAMMING **4 credits**

4 Class Hours

Introduces the student to the various concepts of the ANSI C language within the MS-DOS operating system environment. Practical business exercises, for coding by the students, are assigned to reinforce various aspects of the language. Topics targeted for emphasis include stream I/O, flow of control, function definition and use, complex data types and pointers.

Prerequisite: CIS 1130

CIS 2221 C++ PROGRAMMING **3 Credits**

3 Class Hours

Designed to introduce the student to the new features and differences offered by the C++ language over the C language as well as object-oriented program design. Object-oriented programming properties such as encapsulation, inheritance, and polymorphism are explained and used. Students implement several programs that illustrate the above properties through the design, creation and use of C++ objects. The student must have a prior knowledge id the C language.

Prerequisite: CIS 2220

CIS 2230 dBASE PROGRAMMING **3 Credits**

3 Class Hours

Covers programming concepts and syntax of the dBase relational data base management program for microcomputers. Acquaints students with the high-level programming capabilities available for microcomputers. Students code and test a data base system on the microcomputer.

Prerequisite: ***CIS 1030***

CIS 2240 MICRO SYSTEMS DESIGN PROJECT **3 Credits**

3 Class Hours

A senior project course in which students select and design a computerized business application for microcomputers. Course covers entire design, including systems study, software selection, and detailed systems specifications.

Prerequisites: Two microcomputer programming courses

CIS 2250 MICRO OPERATING SYSTEMS AND NETWORKING **3 Credits**

3 Class Hours

Provides an overview of major microcomputer and network operating systems with emphasis on computer communications. Discusses MS-DOS and UNIX operating systems, netware and token ring networks, communications protocols, and standards organization. Students examine, construct, and test local area networks, performing functions of a network administrator.

Prerequisite: CIS 2010

CIS 2270 ADVANCED MICRO CONCEPTS **3 Credits**

3 Class Hours

Designed to enforce the student's understanding of programming within the microcomputer operating system. Areas covered include: system boot process, memory/memory management, disk/file management, DOS interrupts, DOS function calls, device drivers, DOS debug utility and file recovery utility.

Prerequisites: CIS 1020* and *CIS 1130

CML AND CONSTRUCTION ENGINEERING TECHNOLOGY

CIT 1112 BOARD DRAFTING BASICS **2 Credits**

6 Laboratory Hours

Introduces the fundamentals of board drafting. Lettering, line quality, use of instruments, geometric constructions, drawing layout, orthographic projection, sectional views, basic dimensioning, pictorial drawings (isometric and oblique), drafting symbols and an introduction to mapping are covered.

Corequisites: DSM 0803 and DSR 0853 or equivalent skills

CIT 1150 ENVIRONMENTAL TECHNOLOGY I **3 Credits**

3 Class Hours

Introduces water and wastewater technology. Topics include hydrology, water chemistry, pressure flow, open channel flow, population prediction, storm runoff, water quality, and pollution.
Corequisite: MAT 1140

CIT 1220 MATERIALS AND METHODS OF CONSTRUCTION **3 Credits**

3 Class Hours

Introduces construction procedures that cover responsibilities of the contract parties, the subsurface report, excavating, dewatering, earthworks, foundations, walls, and frames. Materials discussed include concrete, steel, masonry, timber, copper, aluminum, and glass.
Corequisite: ENG 1111

CIT 1230 TESTING OF MATERIALS **2 Credits**

1 Class Hour, 3 Laboratory Hours

Covers methods of testing soils and concrete and evaluation of test results. Tests include mechanical analysis, moisture content, Atterberg Limits, hydrometer analysis, unconfined compression, compaction, field density, slump, and cylinder.
Corequisite: MAT 1140

CIT 2110 STRUCTURAL MECHANICS **3 Credits**

3 Class Hours

A course on structural analysis to acquaint the student with the forces and loads acting on structures and how they are resisted by the structural system. Topics include components and resultants of forces; equilibrium equations: reactions for beams, frames, and trusses; centroids; moments of inertia; shear and moment diagrams; and analysis of trusses. Students analyze structures with both calculators and computers.
Prerequisites: CIS 2215, MAT 1140

CIT 2130 SURVEYING I **3 Credits**

2 Class Hours, 3 Laboratory Hours

The first in a two-course sequence on surveying, with emphasis on the basics of field and office work. Lectures cover errors and accuracy, bearings, azimuths, traverses, level lines, topographic mapping, construction surveys, and horizontal circular curves. Laboratory exercises explore the use of the steel tape, transit, theodolite, level rod, and electronic distance measuring devices. Instructor introduces students to the use of the computer in surveying applications.
Prerequisites: CIS 2215 and MAT 1140

CIT 2250 ENVIRONMENTAL TECHNOLOGY II **3 Credits**

2 Class Hours, 2 Laboratory Hours

Covers water distribution systems and wastewater disposal systems. Topics include source development, raw water treatment and distribution, wastewater collection and treatment, and sludge disposal. Laboratory exercises include water testing and sewer line design and drafting.
Prerequisite: MAT 1140

CIT 2300 SITE DESIGN WITH CAD **3 Credits**

1 Class Hour, 6 Laboratory Hours

Designed to use students' prior knowledge of drafting, surveying, and storm water runoff in the subdivision and development of property. Topics include subdivision regulations, street pattern variables and intersections, site planning, drainage, utilities, and earthwork calculations. Students draw on mylar and on computer-aided drafting equipment.
Prerequisites: ACT 1431, CIT 1150 and CIT 2130

CIT 2310 SURVEYING II **3 credits**

2 Class Hours, 3 Laboratory Hours

The second in a two-course sequence on surveying, with emphasis on horizontal circular curves, spiral curves, vertical curves, radial surveys, boundary surveys, construction surveys, slope stakes, celestial observations, state plane coordinates, and earthwork quantities. Laboratory exercises are on the use of the steel tape, theodolite, level, level rod, and electronic distance measuring devices in applying the lecture material. The computer is used in many of the solutions.
Prerequisite: CIT 2130

CIT 2400 STRUCTURAL DESIGN **3 Credits**

3 Class Hours

Covers the design and detail of elements of structural steel buildings according to the AISC Code and reinforced concrete buildings according to the ACI Code. Topics include the design of slabs, beams, columns, walls, trusses, foundations, connections and splices, and the detailing of steel members and reinforcing bars. Introduces the use of the computer in structural design and detailing.
Prerequisite: CIT 2110

COMMUNICATIONS TECHNOLOGY

CMT 1010 SURVEY OF COMMUNICATIONS TECHNOLOGY **3 credits**

3 Class Hours

An overview of the entire field of communications including voice and data communications, services, networks, and equipment.

CMT 1020 OPERATING SYSTEMS THEORY **4 Credits**

3 Class Hours, 2 Laboratory Hours

A theoretical approach to operating systems. The associated lab experiments give examples in DOS, UNIX, OS2, and Mac.

CMT 1110 COMMUNICATIONS EQUIPMENT AND TRANSMISSION MEDIA **3 Credits**

2 Class Hours, 2 Laboratory Hours

Provides instruction on how to use a digital multimeter, analog and digital storage oscilloscopes, function generator, logic probe, logic analyzer, breakout box, and related equipment. Also covered are properties of cabling (metal and fiber optic) types of connectors, cable and fiber termination, as well as PS-232, T-1, ISDN, and X.25 applications.
Prerequisite: EET 1130

CMT 2010 PROTOCOLS AND TOPOLOGIES **3 credits**

3 Class Hours

Covers the ISO model, TCP/IP, star, ring, and bus networks, circuit switching, packet switching, tokens, CSMA/CD, and PBXs.
Prerequisite: CMT 1010

CMT 2020 DIGITAL COMMUNICATIONS AND NETWORK EXTENSIONS **4 credits**

3 Class Hours, 2 Laboratory Hours

Covers UARTs, modems, error detection, data compression, encryption, time and frequency division multiplexing, repeaters, bridges, routers, intelligent hubs, and gateways.
Prerequisite: CPT 1400
Corequisite: CMT 2010

CMT 2110 COMMUNICATIONS NETWORK ANALYSIS **3 Credits**

2 Class Hours, 2 Laboratory Hours

Covers the physical considerations of topologies, cable distribution systems, performing site surveys, network planning, installation and testing, network security, and regulating agencies.
Prerequisite: CMT 2010

CMT 2120 NETWORK MANAGEMENT **3 Credits**

2 Class Hours, 2 Laboratory Hours

Emphasizes technical and management aspects of integrated networks. Network interface controllers, measuring failures and availability, reliability, preventive maintenance, maintenance aids and network statistics, reconfiguration, and documentation are covered, as well as Pathworks/LAN Manager.

Prerequisite: CIS 2250

CMT 2130 APPLIED NETWORKING **2 Credits**

1 Class Hour, 2 Laboratory Hours

A hands-on capstone course in which students connect and test various networking configurations.

Corequisite: CMT 2120

VISUAL COMMUNICATIONS

COM 1110 INTRODUCTION TO VISUAL COMMUNICATIONS **3 Credits**

3 Class Hours

Orients students to the field of visual communications through a survey of the history, current trends and techniques, and societal impact of this growing field.

Prerequisites: *RSE* 0733, *RSM* 0703, *RSR* 0753

COM 1111 GRAPHIC PROCESSES AND TECHNIQUES **4 Credits**

3 Class Hours, 3 Laboratory Hours

An introductory course designed to acquaint the beginning student with graphic arts processes, techniques and terminology. Topics in safety, graphic arts measuring systems and mathematics, careers, pre-press, press and bindery systems are presented. Projects acquaint students with the use of design tools and basic darkroom procedures.

Prerequisites: RSM 0703, RSR 0753

COM 1130 GRAPHIC DESIGN I **3 credits**

2 Class Hours, 2 Laboratory Hours

Introduces the principles of design and production of art for visual communications. Topics include the development of graphic design from thumbnail sketches, rough layouts, and comprehensive design presentations. Various media and techniques are introduced.

Prerequisites: COM 1111, COM 1150, COM 1210

COM 1150 TYPE CONCEPTS **3 credits**

2 Class Hours, 2 Laboratory Hours

Introduces typography and methods for the production of type for use in visual communication projects. Typestyles, specifications, measurement, and markup are emphasized. The use of type as a design element is stressed.

Corequisites: COM 1111, COM 1210

COM 1170 TECHNOLOGY FOR PRINT PRODUCTION **3 Credits**

2 Class Hours, 2 Laboratory Hours

A course which translates traditional mechanical art preparation skills to the current industry-standard of digital file preparation for reproduction. Topics include terminology, printing specifications, and printing and finishing processes.

Prerequisites: COM 1150, COM 1210

Cotequisite: COM 1130

COM 1210 INTRODUCTION TO ELECTRONIC MEDIA **3 credits**

2 Class Hours, 2 Laboratory Hours

Acquaints the student with the technology of design and production of visual material using the computer and various software packages as a tool.

COM 1220 GRAPHIC DESIGN II **3 credits**

2 Class Hours, 2 Laboratory Hours

Advanced instruction in the creative aspects of the design and production of art for visual communications. Students apply concepts from Graphic Design I to solve problems in design techniques and styles, types of advertising, creating the right impression, illustration and photography in design, designing with type, selecting paper stock, package design, working with color, and marker techniques.

Prerequisite: COM 1130
Corequisite: COM 1161

COM 1230 INTRODUCTION TO DIGITAL IMAGING **3 Credits**

2 Class Hours, 2 Laboratory Hours

Introduces the equipment, software, and procedures used in digital technology to capture, manipulate and store photographic images.

Prerequisite: COM 1210

COM 2110 ELECTRONIC PUBLISHING **3 Credits**

2 Class Hours, 2 Laboratory Hours

Teaches electronic publishing skills using the Macintosh computer and various software packages for desktop publishing, word processing, and graphic image generation. Stresses principles of publication design and typography. Students produce various projects which include newsletters, brochures, business cards, etc.

Prerequisite: COM 1210

COM 2170 VISUAL COMMUNICATIONS PORTFOLIO **4 credits**

2 Class Hours, 4 Laboratory Hours

Provides instruction in the development of a Visual Communications portfolio and resume. Includes practice in job interview skills, speakers from the industry, portfolio reviews by industry professionals and tours of creative businesses.

Corequisites: COM 1162, COM 1220

COM 2210 ELECTRONIC DESIGN AND ILLUSTRATION **3 Credits**

2 Class Hours, 2 Laboratory Hours

Develops greater expertise and more sophisticated skill in the use of page layout and illustration software on the Macintosh computer.

Prerequisite: COM 2110

COM 2220 ELECTRONIC PUBLISHING PRACTICUM **3 Credits**

2 Class Hours, 2 Laboratory Hours

An advanced class in which students design and execute a variety of electronic publishing projects appropriate for print production, utilizing graphic design, computer and photographic techniques.

Prerequisite: COM 2210

COM 2330 INTRODUCTION TO ELECTRONIC PRE-PRESS **3 Credits**

2 Class Hours, 2 Laboratory Hours

An overview course which discusses the impact of desktop publishing and digital imaging on the pre-press industry, The topics include image input and output: digital color and mechanicals; data storage, and different proofing methods. The course will acquaint students with the variety of jobs offered in this field from customer service representative, to file evaluation, through digital stripping of color separated files.

Prerequisite: at least three Macintosh computer classes or equivalent experience.

COMPUTER TECHNOLOGY

CPT 1400 DIGITAL CIRCUITS **3 Credits**

2 Class Hours, 2 Laboratory Hours

Presents the concepts of Boolean Algebra and their applications to designing with and analyzing digital integrated circuits. Examines binary and other number base systems and codes. The 7400 series of ICs is used in the laboratory exercises to support classroom presentations of logic circuits. Presents A/D and D/A converters, counters, shift registers, adders, multiplexers, and encoders. Covers various memory devices and their operation.

Corequisites: EET 1110, MAT 1140

CPT 2310 MICROPROCESSOR PRINCIPLES **5 credits**

4 Class Hours, 3 Laboratory Hours

Provides instruction in assembly language programming of a single-chip microprocessor and in the use of associated circuit chips. Students use IBM PC-compatible hardware, along with MS-DOS. Students also use editor, an assembler, linker and debugger. The instruction set of the 8088/8086 microprocessor is used by the student to write application programs. Course covers hardware and hardware/software interface, system timing, memory, peripheral device control, and interrupt capabilities. Laboratory exercises involve program generation and breadboard construction.

Prerequisites: CIS 2215, CPT 1400

CPT 2320 TELECOMMUNICATIONS **3 Credits**

2 Class Hours, 2 Laboratory Hours

Studies communications techniques and systems used for digital data transfer. Covers digital transmission and various modulation techniques. Examines error detection, data compression, encryption, protocols, ISDN, CCITT, and ISO standards. Presents telephone networks and characteristics, satellite communications, and fiber optics. Covers the RS-232 standard, UARTs, a PBX, and asynchronous and synchronous modems extensively in both lecture and laboratories.

Prerequisite: CPT 2310

Corequisite: CPT 2325

CPT 2325 OPERATING SYSTEMS I **3 Credits**

2 Class Hours, 2 Laboratory Hours

Studies the MS-DOS Operating System and the MS-Windows Graphical User Interface. Components of an operating system and graphical user interface are identified. Installation, configuration and performance tuning are emphasized. Concepts and uses of the file system hierarchy, batch files, application installation, memory management, and device drivers are covered.

Corequisite: CPT 2310

CPT 2410 COMPUTER PERIPHERALS **4 credits**

3 Class Hours, 3 Laboratory Hours

Studies the architecture and functional operations of up-to-date computer peripherals. Covers RS-232, parallel, TTL, and GPIB interfaces. Includes peripheral devices, disk and tape drives, CD-ROM drives, printers, monitors, keyboards, flat-panel displays, plotters, mice and other position digitizers, optical readers, speech recognition/synthesis units, and the MIDI musical interface. Laboratory sessions provide practice in following procedures according to technical manuals to install, operate, adjust, perform preventive maintenance on, and troubleshoot peripheral devices.

Prerequisites: CPT 2310, CPT 2325

CPT 2425 OPERATING SYSTEMS II **4 credits**

3 Class Hours, 3 Laboratory Hours

Studies the Novell Netware and Xenix/Unix Operating Systems. The characteristics of shared resources, multiuser systems, multi-tasking systems, security and device drivers are examined.

Hardware and software requirements of Novell Netware and Unix/Xenix are examined. Installation, configuration, and performance tuning are emphasized.
Prerequisite: CPT 2325

CPT 2430 SYSTEM TROUBLESHOOTING **4 Credits**
2 Class Hours, 4 Laboratory Hours

A comprehensive study of microcomputer hardware and software and their interrelationships. Emphasizes the determination of software and/or hardware failures using equipment bugged with canned or actual failures. Also includes the use of diagnostic programs to identify and isolate a non-functioning device or sub-system, the proper techniques for performing a reliable repair, and the performance of preventive maintenance.
Corequisite: CPT 2410

CPT 2440 DIGITAL DESIGN/CONSTRUCTION PROJECT **1 Credit**
2 Laboratory Hours

A design fabrication course that allows the student to gain and demonstrate proficiency in selecting a digital/computer project, designing the project, obtaining parts, building the project, troubleshooting and demonstrating the completion of the project. A final written report includes cost analysis and a summary of problems and successes the student encountered.
Corequisite: CPT 2310

DEVELOPMENTAL ENGLISH

DSE 0833 DEVELOPMENTAL WRITING **4 Credits**
4 Class Hours

Students combine writing and reasoning skills with research skills to produce paragraphs and short essays based on observation, interviews, and written materials. Papers are developed using narrative, description, comparison and contrast, cause and effect, and persuasion. Group discussion with an oral presentation and one short documented paper are required.
Prerequisite: RSE 0733 or equivalent skills

DEVELOPMENTAL MATHEMATICS

DSM 0800 BASIC ARITHMETIC AND ELEMENTARY ALGEBRA **6 Credits**
6 Class Hours

The study of mathematics competencies that emphasizes fractions, decimals, percents, and includes the first course in algebra which emphasizes the fundamental operations of real numbers, polynomials, exponents, factoring, rational expressions, linear equations and applications, single variable inequalities, linear systems, evaluating algebraic expressions, solving quadratic equations by factoring, and introduction to graphing. Recommended for students who completed high school Algebra II, but placement scores require RSM 0703.
Prerequisite: Must have Academic Skills advisor's approval.

DSM 0803 ELEMENTARY ALGEBRA **4 Credits**
4 Class Hours

The first course in algebra emphasizes the fundamental operations of real numbers, polynomials, exponents, factoring, rational expressions, linear equations and applications, single variable inequalities, linear systems, evaluating algebraic expressions, solving quadratic equations by factoring, and introduction to graphing.
Prerequisite: RSM 0703 or equivalent skills

DSM 0813 INTERMEDIATE ALGEBRA **4 credits**

4 Class Hours

A second course in algebra emphasizes sets, the real number system, fundamental operations of algebraic factoring, algebraic linear equations and linear inequalities, stated problems, exponents and radicals, inequalities, ratio, proportion, and graphing linear and quadratic equations.
Prerequisite: DSM 0800 or DSM 0803 or equivalent skills

DEVELOPMENTAL READING

DSR 0853 DEVELOPMENTAL READING **4 Credits**

4 Class Hours

Designed to develop necessary literal and critical comprehension skills for reading textbook passages ranging from paragraphs to chapters and to enhance vocabulary skills.
Prerequisite: RSR 0753 or demonstrated equivalent skills

DEVELOPMENTAL STUDY SKILLS

DSS 0863 DEVELOPMENTAL STUDY SKILLS **2 credits**

2 Class Hours

Emphasizes how to succeed in college, while developing such academic skills as managing time and environment, analyzing and mastering the contents of lectures and textbook chapters, and preparing for and taking tests. Also included in the course are units about setting goals, making career and academic decisions, utilizing resources, and coping with anxiety.

ECONOMICS

ECO 1111 PRINCIPLES OF MACROECONOMICS **3 credits**

3 Class Hours

Economics is the study of the countless problems of surviving and making a living all over the world. Emphasis is on national income, the monetary system, economic fluctuations, fiscal policy, and the international economy. A study of institutions that help develop the national and international economy. Defines the principles of economics in a study of the problems of scarcity, choice, and the law of supply and demand through class discussion and analysis of current economic events.
Prerequisites: DSR 0853 and RSE 0733 or equivalent skills

ECO 1121 PRINCIPLES OF MICROECONOMICS **3 credits**

3 Class Hours

Emphasizes decision making by households and businesses, production, competition and market structures, government, labor markets, unions and the distribution of income. The principles of scarcity, choice, and the laws of supply and demand are examined through class discussions and analysis of current economic events.
Prerequisites: DSR 0853 and RSE 0733 or equivalent skills

ELECTRICAL-ELECTRONIC ENGINEERING TECHNOLOGY

EET 1008 MEDIA EQUIPMENT MAINTENANCE **5 credits**

3 Class Hours, 6 Laboratory Hours

A hands-on course in repairing and maintaining audio-visual equipment. Presents service concepts and techniques for such equipment as motion picture projectors, filmstrip projectors, slide projectors, overhead projectors, record players, cassette recorders, video tape recorders, cameras, monitors, and public address systems.
Prerequisite: EET 1100

EET 1100 TECHNICAL ORIENTATION **3 Credits**

2 Class Hours, 2 Laboratory Hours

Acquaints the beginning student with the tools, equipment, and language of the electrical and electronic fields. Students learn to read and draw schematic diagrams, proper laboratory safety practice, and the proper use of measuring instruments. Covers the use of computer programs for word processing and computer literacy.

Prerequisite: DSM 0803 or equivalent skills

EET 1110 ELECTRIC CIRCUITS **5 Credits**

4 Class Hours, 2 Laboratory Hours

Covers voltage, current, resistance, and power in D.C. and A.C. circuits, series, parallel, and more complex circuits using Kirchhoff's laws and selected network theorems, capacitance and inductance; presents resonance as a special topic. Transformers and polyphase concepts conclude the course.

Prerequisite: DSM 0813 or equivalent skills
Corequisite: MAT 1140

EET 1130 INTRODUCTION TO ELECTRONICS **5 Credits**

4 Class Hours, 2 Laboratory Hours

Covers theory, problem solving, and laboratory experiments in the following electronic areas: DC series/parallel circuits, open/shorts, AC series/parallel, capacitors, inductors, diodes, switching transistors (BJT and CMOS), and linear devices.

Corequisite: MAT 1140

EET 1190 GM AUTOMOTIVE ELECTRICITY I **4 Credits**

3 Class Hours, 3 Laboratory Hours

Covers basic concepts in D.C. and A.C., including Ohm's Law, series and parallel circuits, Kirchhoffs Voltage and Current Laws, Thevenin's equivalent circuits, and A.C. power generation. Upon satisfactory completion of this course, the student receives a certificate of attendance for General Motors Specialized Electronics Training (GM/SET) course #18001.02. All the circuits have practical application to GM automobiles.

EET 1192 AUTOMOTIVE ELECTRICITY **4 Credits**

3 Class Hours, 2 Laboratory Hours

Covers basic concepts in D.C. and A.C. including Ohm's Law, series and parallel circuits, Kirchhoffs Voltage and Current Laws, Thevenin's equivalent circuits and A.C. power generation. Course emphasizes concepts of starting systems, charging systems, and basic ignition systems. Includes operation, testing, and diagnostic procedures.

Corequisite: MAT 1140

EET 1210 ELECTRONIC CIRCUITS **5 Credits**

4 Class Hours, 2 Laboratory Hours

Covers solid state electronics as circuit elements, including diodes, bipolar transistors, rectifier circuits, Zener diode regulators, power supplies, power amplification, junction and MOSFETs, and applications in selected linear circuits. Operational amplifiers in various feedback configurations comprise the final phase of the course.

Prerequisite: EET 1110

EET 1220 TRANSFORMERS AND ROTATING MACHINES **3 Credits**

2 Class Hours, 2 Laboratory Hours

Provides an understanding of electrical machinery. The study includes transformer theory and application, single-phase and three-phase connections, auto-transformers and special instrument transformers. The course also includes a study in the development of horsepower, torque, efficiency as related to the operation of D.C. motors and generators, single-phase and three-phase motors, and alternators, step-motors, resolvers and synchros. Comparisons in the performance of machines are made.

Prerequisite: EET 1110

EET 1260 ELECTRICAL TECHNOLOGY **4 Credits**

3 Class Hours, 2 Laboratory Hours

Reviews the basics of electrical power for non-electrical/electronic students. Covers such topics as D.C. and A.C. circuits, transformers, rotating machinery, electrical and electronic controls, and electrical energy.

Prerequisite: MAT 1140

EET 1290 GM AUTOMOTIVE ELECTRICITY II **3 Credits**

2 Class Hours, 3 Laboratory Hours

Studies semiconductor devices with emphasis on the junction diode, the bipolar transistor, and the field effect transistor. The student becomes familiar with electro-mechanical devices, specifically the operation and fault diagnosis and repair of self-rectifying D.C. generators and cranking motors. The student also becomes familiar with mechanical and electrical testing equipment used to diagnose malfunctions of the GM ignition systems and to determine the general condition of the engine.

Prerequisite: EET 1190

EET 2020 INDUSTRIAL CONTROL SYSTEMS **4 Credits**

3 Class Hours, 2 Laboratory Hours

Studies control circuits and devices commonly used in the industrial environment. The course shows the various ways used to control machinery. The student is required to design control circuits using relay logic and solid-state logic. Solid-state control of D.C. motors, A.C. motors, and step motors is covered in detail. Switches, sensors, and transducers are included, and industrial models are evaluated.

Prerequisites: EET 1210, EET 1220

EET 2110 INDUSTRIAL ELECTRONICS **5 Credits**

4 Class Hours, 2 Laboratory Hours

Studies electronic devices and circuits most often found in industrial equipment controlling machinery and processes in industry. Includes power supplies, operational amplifiers, thyristors, transducers, timers, optical, and thermal devices. Introduces other components, such as servo systems and programmable controllers, to show how closed-loop processes and automated equipment can be accurately controlled.

Prerequisite: EET 1210

EET 2120 ELECTRONIC DESIGN PROJECT **1 Credit**

2 Laboratory Hours

A design-fabrication course involving an approved electronic project. Construction includes layout and fabrication of printed circuit boards, chassis fabrication, wiring and assembly. The student tests and analyzes the performance of the project and submits a written report.

Prerequisite: EET 1210

EET 2190 GM ADVANCED ELECTRONICS **3 Credits**

2 Class Hours, 2 Laboratory Hours

Introduces the vehicle parameter sensing devices that provide information to Electronic Control Modules (ECM computer). The student also becomes familiar with the characteristics of proper operation and malfunction diagnosis using the Assembly Line Data Link and other on-board diagnostic equipment.

Prerequisite: EET 1290

EET 2192 AUTOMOTIVE ELECTRONICS **4 Credits**

3 Class Hours, 2 Laboratory Hours

Introduces the vehicle parameter sensing devices that provide information to Electronic Control Modules (ECM computer). The student also becomes familiar with the characteristics of proper operation and malfunction diagnosis using the Assembly Line Data Link and other on-board diagnostic equipment.

Prerequisite: EET 1192

EET 2210 CIRCUIT ANALYSIS **2 credits**

1 Class Hour, 2 Laboratory Hours

An application of previous training to troubleshoot solid state electronic circuits and systems using basic tools. Includes a review of two-port networks, filters, and transfer functions.

Prerequisite: EET 1210

EET 2220 COMMUNICATION CIRCUITS **4 credits**

3 Class Hours, 2 Laboratory Hours

Acquaints the student with the operations and theory of electronic communications systems. Covers the theory of amplitude and frequency modulation/demodulation; transmission lines; antennas; radiation and propagation of waves: pulse communications; multiplexing in broadband systems covering coaxial cables; and fiber optic links and their practical uses.

Prerequisite: EET 1210

EET 2230 NETWORK ANALYSIS **2 credits**

4 Laboratory Hours

Studies two-port networks, filters, and transfer functions. Investigates selected topics using digital computer analysis techniques.

Prerequisite: EET 1210

EET 2240 INSTRUMENTATION **3 Credits**

2 Class Hours, 2 Laboratory Hours

Studies industrial devices most commonly used by industry in Automated Process Control Systems. Students learn electrical and mechanical transducers applied in the measurement of temperature, pressure, flow and position, and complete exercises using computers and computer interfacing to give a realistic approach to the industrial application of these devices.

Prerequisite: EET 1210

EET 2280 VIDEO SYSTEMS **3 credits**

2 Class Hours, 2 Laboratory Hours

A comprehensive course covering the basics of television recording, broadcasting, and reception. Covers all concepts used to record video information on magnetic tape and how to retrieve it. Material includes scanner systems, tape formats, tape transports, luminance processing, and color signal processing.

Prerequisite: EET 1210

EET 2290 GM AUTOMOTIVE COMPUTER SYSTEMS I **3 Credits**

2 Class Hours, 2 Laboratory Hours

Introduces digital systems and microprocessors, which includes the study of the on-board GM computers used to regulate, monitor, and control various systems of the vehicle.

Prerequisite: EET 2190

EET 2292 AUTOMOTIVE COMPUTER SYSTEMS **3 Credits**

2 Class Hours, 2 Laboratory Hours

Introduces digital systems and microcomputers, which includes the study of the on-board automotive computers used to regulate, monitor, and control various systems on the vehicle.

Prerequisite: EET 1192

EET 2295 GM AUTOMOTIVE COMPUTER SYSTEMS II **3 credits**

2 Class Hours, 3 Laboratory Hours

A continuation of EET 2290, which includes the GM Buick and Cadillac Divisions' Body Control Modules (BCM computers).

Prerequisite: EET 2290

EET 2530 POWER SYSTEMS **4 Credits**

3 Class Hours, 2 Laboratory Hours

An expanded analysis of the three-phase system, focusing on the power system and its various components. Analyzes the parameters of the transmission line and problems of system operation. Students explore equipment and perform fault studies.

Prerequisite: EET 1110

EET 2600 AUTOMATIC CONTROL SYSTEMS **4 Credits**

3 Class Hours, 2 Laboratory Hours

Designed to introduce the student to a wide range of industrial automatic controls. The programmable logic controller is the base of study with the emphasis on programming. Included are the various types of transducers common to the industrial environment and the interfacing of I/O devices to the PLC. Modes of controls, process response, and the final correcting devices are discussed.

Prerequisite: ART 2510

EET 2640 POWER DISTRIBUTION **4 Credits**

3 Class Hours, 2 Laboratory Hours

An overview of electrical power distribution systems with a focus on the design of electrical distribution systems for industrial and commercial buildings, including services, transformers, unit substations, switchboards, distribution circuit components, and fault, voltage, and power factor studies.

Prerequisites: EET 1110, MET 1013

EET 2660 ELECTRICAL DESIGN PROJECT **1 Credit**

2 Laboratory Hours

Designed to demonstrate proficiency in analysis, layout, and construction of an electrical project. The student checks the design, analyzes the performance of the project, and submits a written and oral report.

Prerequisite: EET 1220

ELECTRICAL MAINTENANCE

EMC 11 12 INTERPRETING TECHNICAL INFORMATION **4 Credits**

3 Class Hours, 3 Laboratory Hours

A comprehensive course in wiring practice as required by the National Electrical Code (N.E.C.). The course includes blueprint reading, load calculations, service equipment, disconnect means, circuit protection, sizing of conductors, over current protection, feeder bus systems, panel boards, subfeeders, and unit substations.

EMC 1122 ELECTRICAL MAINTENANCE ORIENTATION **4 Credits**

3 Class Hours, 3 Laboratory Hours

Studies measurements, measuring instruments, power and hand tools, including the voltmeter, ohmmeter, ammeter, vernier, and micrometer. Power and hand tools include drills, saws, pipe threaders, conduit benders and other tools. Compares the English and metric systems.

EMC 1131 BASIC D.C. CIRCUITS **4 Credits**

3 Class Hours, 3 Laboratory Hours

Studies the basic principles of electricity including voltage, current, resistance, power, Ohm's Law, Kirchhoffs Law and how they relate to D.C. series, parallel, and combination circuits. The study also includes batteries, magnetism and electro-magnetic induction. Laboratory experiments give the student practical illustration of these laws and principles.

EMC 1136 BASIC D.C. AND A.C. CIRCUITS **8 Credits**

6 Class Hours, 6 Laboratory Hours

Studies the basic principles of electricity including voltage, current, resistance, power, Ohm's Law, Kirchhoffs Law and how they relate to D.C. series, parallel, and combination circuits. Laboratory experiments give the student practical illustrations of these laws and principles. The course includes complex A.C. circuits, power factor, metering, and a working knowledge of A.C. principles, also covering the generation of polyphase, delta and wye sources and loads.

EMC 1161 BASIC A.C. CIRCUITS **4 Credits**

3 Class Hours, 3 Laboratory Hours

Studies A.C. voltage and current concepts, including more complex circuits, power factor, metering, and a working knowledge of A.C. principles. The course also covers the generation of polyphase, delta and wye sources and loads.

Corequisite: EMC 1131

EMC 1216 ELECTRICAL MACHINES AND CONTROLS **8 Credits**

6 Class Hours, 6 Laboratory Hours

An introductory course in electrical machines and transformers including D.C. motors and generators; single- and three-phase A.C. motors, alternators and synchronous motors: single- and three-phase transformers: instrument transformers and auto transformers. The course compares the performance of A.C. machinery to D.C. machinery and covers horsepower, torque, RPM, and efficiency. Subjects in the transformer area include the turns ratio, the equivalent circuit, and power factor relationships and efficiency with various loads and connections.

Prerequisite: EMC 1136 or EMC 1161

EMC 1218 DIGITAL PRINCIPLES **4 Credits**

3 Class Hours, 3 Laboratory Hours

An introductory course in logic circuits and their application to designing with digital integrated circuits laboratory exercises to support classroom presentation of gates, flip flops, adders, counters, shift registers, and other functions. A to D and D to A conversion techniques are examined.

Prerequisite: EMC 1136 or EMC 1161

EMC 1222 BASIC HYDRAULICS AND PNEUMATICS **5 Credits**

4 Class Hours, 3 Laboratory Hours

Studies fluid power, including basic theory and application covering the relationship between fluid flow and pressure, accumulators, actuators, and the control of both fluid and air.

EMC 1312 CONTROL APPLICATIONS **4 credits**

3 Class Hours, 3 Laboratory Hours

Designed to show the student various ways to control A.C. and D.C. machinery and the use of relays and NEMA logic. Also includes reading electrical drawings, troubleshooting circuits and the interfacing of programmable controllers with relay logic.

Prerequisite: EMC 1216

EMC 1322 PROGRAMMABLE LOGIC CONTROLLERS **5 Credits**

3 Class Hours, 4 Laboratory Hours

Designed for EMC personnel to gain knowledge of programmable controllers. Includes history, application, memory organization, I/O configuration and programming, times, counter, storage registers, data transfer, data comparison, and maintenance procedures. The conversion of ladder diagrams to PLC programming is discussed. The Allen Bradley 2-15 is used.

ENGLISH

ENG 1002 LANGUAGE SKILLS **3 Credits**
3 Class Hours

Seeks to develop basic language skills. Stresses writing principles with emphasis on sentence structure and grammatical usage, including the relationship between written and oral communication. These principles are applied through grammatical exercises, compositions, employment correspondence, an interview, and oral presentation. The course may not be used as an elective or taken after successful completion of ENG 1111, The course is required for certain certificate programs.

ENG 1110 RESEARCH METHODS **1 Credit**
1 Class Hour

Assists students in preparing accurately documented and effective academic reports and research projects. Course content includes instruction in research strategies, use of the library, and documentation and bibliographic form. Students work with actual writing projects they have in their technical and degree programs.

Prerequisites: DSR 0853 and DSE 0833 or equivalent skills
Corequisite: ENG 1111

ENG 1111 COMPOSITION I **3 Credits**
3 Class Hours

Concentrates on style and basic organizational patterns. Students read essays and samples of literature for discussion and write a minimum of six compositions and a research paper to apply the principles of organization that they have learned.

Prerequisites: DSR 0853, DSE 0833 or equivalent skills

ENG 1112 COMPOSITION II **3 Credits**
3 Class Hours

Second semester composition class emphasizes argumentative and analytical writing. Literature from the text serves as a catalyst for student discussion and writing. Students study advanced methods of composition through the analysis and explication of literature/essays and apply these techniques to their own writing. Emphasis is given to using library resources and to researching, organizing, and writing research papers.

Prerequisite: ENG 1111

ENG 21 11 CORRESPONDENCE COMPOSITION **3 Credits**
3 Class Hours

Explains the principles of business correspondence and provides practice in writing typical business letters and reports. The course develops logical and critical thinking in the preparation of various types of correspondence.

Prerequisite: ENG *1111*
Note: ENG 2111 will not meet the requirementsfor a General Education course.

ENG 2112 REPORT WRITING **3 Credits**
3 Class Hours

Introduces students to the basic principles of effective report writing. Written assignments provide practice in organizing and composing brief reports and a formal report. Throughout the semester, students learn practical application of report writing skills.

Prerequisite: ENG 1111
Note: ENG 2112 will not meet the requirements for a General Education course.

ENG 2131 INTRODUCTION TO LITERATURE I: FICTION **3 Credits**
3 Class Hours

Provides the opportunity, through class discussions and assigned papers, to analyze short Stories and novels in terms of their literary characteristics. Designed to give students experience in reading and interpreting literature.

Prerequisite: ENG 1111

Note: ENG 2131 meets the requirementfor a Humanities elective,

ENG 2132 INTRODUCTION TO LITERATURE II: POETRY AND DRAMA **3 Credits**
3 Class Hours

Introduces students to the works of major poets and dramatists. Through reading and film, students examine poetry and drama, relating the works to major literary themes, including historical/social events that influenced the writers. Gives students experience in both reading and writing, with emphasis on interpretation.

Prerequisite: ENG 1111

Note: ENG 2132 meets the requirement for a Humanities elective.

ENG 2133 MULTI-CULTURAL LITERATURE **3 credits**
3 Class Hours

Introduces students to the works of American authors and poets of various ethnic backgrounds. Emphasizes biography, essays, poetry, and short fiction by African Americans, Asian Americans, Hispanic Americans, and Native Americans, and gives students experience in both reading and writing, with emphasis on the cultural heritage.

Prerequisite: ENG 1111

Note: ENG 2133 meets the requirementfor a Humanities elective.

ENG 2134 AMERICAN LITERATURE I **3 Credits**
3 Class Hours

A survey of selected readings, especially fiction, poetry, and drama, with emphasis on major themes in American literature. Students learn to discuss the literature and to analyze it in essays.

Prerequisite: ***ENG 1111***

Note: This course meets the requirement for a Humanities elective.

ENG 2140 INTRODUCTION TO FILM **3 Credits**
3 Class Hours

Introduces the basic elements of film. Emphasis is on the understanding and appreciation of purpose and techniques and analyzing and evaluating cinematic productions.

Prerequisite: ENG 1111

Note: This course meets the requirement for a Humanities elective.

FINANCE

FIN 2210 BUSINESS FINANCE **3 Credits**
3 Class Hours

Covers the fundamental concepts of business finance and presents the analytical techniques necessary to solve a wide variety of problems involving financial and managerial decisions.

Prerequisites: ACC 1105, AIS 1138

GEOLOGY

GEO 1100 ENVIRONMENTAL GEOLOGY **3 Credits**
3 Class Hours

Designed to present the principles of physical geology in the context of the environmental needs of our time. The makeup of the earth, its internal processes, soil, water resources, mineral and energy resources are covered.
Corequisite: GEO 1101

GEO 1101 ENVIRONMENTAL GEOLOGY LABORATORY **1 Credit**
2 Laboratory Hours

Laboratory course to accompany GEO 1100. Water and air quality, global stresses on the environment, and the use of computer-based geological models are stressed.
Corequisite: GEO 1100

HISTORY

HIS 2111 THE AMERICAN PEOPLE TO MID-19TH CENTURY **3 Credits**
3 Class Hours

Studies the social, cultural, economic, and political aspects of American life from the colonial period through the mid-19th century.
Prerequisites: DSE 0833 and DSR 0853 or equivalent skills
Note: HIS 2111 meets the requirement for a Social Sciences elective.

HIS 2112 THE AMERICAN PEOPLE SINCE MID-19TH CENTURY **3 Credits**
3 Class Hours

Studies the social cultural, economic, and political aspects of American life since the mid-19th century.
Prerequisites: DSE 0833 and DSR 0853 or equivalent skills
Note: HIS 2112 meets the requirement for a Social Sciences elective.

HIS 2121 WORLD CIVILIZATION I **3 Credits**
3 Class Hours

Studies the social, cultural, economic, and political aspects of significant civilizations from the period of unwritten history through the seventeenth century.
Prerequisites: DSE 0833 and DSR 0853 or equivalent skills.
Note: HIS 2121 meets the requirement for a Social Sciences elective.

HIS 2122 WORLD CIVILIZATION II **3 Credits**
3 Class Hours

Studies the social, cultural, economic, and political aspects of significant civilizations from the seventeenth century to the present.
Prerequisites: DSR 0853 and DSE 0833 or equivalent skills

HUMANITIES

HUM 1111 APPRECIATION OF THE ARTS **3 Credits**
3 Class Hours

Provides students an opportunity to understand the arts that have helped to shape our civilization. Through readings, discussion, and audio-visual resources, students learn how the arts have reflected society's development and influenced it. Course gives students the opportunity to analyze through writing and discussion the progress of painting, sculpture, architecture, and other arts in our culture.
Prerequisites: DSE 0833 and DSR 0853 or equivalent skills
Note: HUM 1111 meets the requirement for a Humanities elective.

INDUSTRIAL ENGINEERING TECHNOLOGY

IET 1112 WORK MEASUREMENT **3 Credits**

2 Class Hours, 2 Laboratory Hours

Studies the basic techniques and principles of stop watch time study. The course includes continuous and snapback timing methods, performance rating, application of allowances, and calculation of normal and standard times. It also includes calculation of such related information as production rates, conveyor and machine speeds, and incentive pay rates. Methods time measurement (MTM) and work sampling techniques are also included.

Prerequisite: RSM 0703 or equivalent skills

IET 1120 WORK METHODS **3 Credits**

3 Class Hours

Studies methods improvement using charts, motion study principles and operations analysis. The course includes the managerial tools necessary to get new methods accepted.

Prerequisite: DSR 0853 or equivalent skills

IET 1220 PRODUCTION, INVENTORY AND COST CONTROL **3 Credits**

3 Class Hours

Studies production planning based on sales forecasts, routing, scheduling, purchasing, dispatching, expediting, and inventory control.

Prerequisite: DSR* 0853 or *equivalent skills

IET 2110 PLANT LAYOUT AND MATERIAL HANDLING **3 Credits**

2 Class Hours, 2 Laboratory Hours

Designed to acquaint the student with the principles of plant layout and material handling using process charts, flow charts, activity relationships, and actual plant layout construction.

Prerequisite: IET 1120

IET 2120 ENGINEERING ECONOMY **3 Credits**

3 Class Hours

Studies economic alternative decision making using capital recovery, present cost, annual cost, and rate-of-return methods of analysis.

Prerequisite: MAT 1120 on MAT 1140

IET 2130 INDUSTRIAL SAFETY/ERGONOMICS **3 Credits**

3 Class Hours

Studies occupational safety and ergonomics including OSHA requirements, right to know, hazardous materials communication, design for safety, personal protection equipment and ergonomic considerations.

Prerequisite: DSR 0853* or *equivalent skills

IET 2210 QUALITY CONTROL **3 Credits**

2 Class Hours, 2 Laboratory Hours

Introduces statistical quality control covering control charts for variables, control charts for attributes, and sampling. Reliability concepts and ISO 9000 topics are also covered.

Prerequisite: MAT 2110

IET 2220 INDUSTRIAL PROJECT **2 Credits**

1 Class Hour, 2 Laboratory Hours

Studies and analyzes real and unstructured industrial problems through the application of engineering. The student must find and identify a problem in an industrial organization, submit a project proposal to the instructional and external interests concerned and carry the approved project to a conclusion satisfactory to the instructor. Each project involves a large portion of the student's total education.

Prerequisite: IET 2110

IET 2230 INTRODUCTION TO OPERATIONS RESEARCH **3 Credits**
3 Class Hours

Introduces quantitative approaches to management. Economic order analysis, linear programming, queuing theory, and critical path techniques are discussed.
Prerequisite: MAT 2110

MATHEMATICS

MAT 0995 GEOMETRY **3 Credits**
3 Class Hours

Studies two- and three-dimensional figures that emphasizes symmetry, similarity, and congruence; properties and relationships of the right triangle: measurement and calculation of areas and volumes: the use of logic and geometrical thought to solve for unknown quantities: and basic geometrical constructions.
Prerequisite: DSM 0800 or DSM 0803 or equivalent skills

MAT 1110 BUSINESS MATHEMATICS **3 Credits**
3 Class Hours

Covers business mathematics presented from an algebraic base. Topics include discounts, taxes, logarithms, mathematics of finance (simple and compound interest, loans and investments, depreciation), and descriptive statistics.
Prerequisite: *DSM 0813,* or equivalent skills and two high school credits in algebra

MAT 1120 COLLEGE ALGEBRA **3 Credits**
3 Class Hours

Topics include a rapid review of intermediate algebra, radicals, polynomials, exponential and logarithmic functions, matrices and determinants, elementary counting techniques, sequences, and series.
Prerequisite: DSM 0813, or equivalent skills and two high school credits in algebra

MAT 1130 TRIGONOMETRY **3 Credits**
3 Class Hours

Topics include trigonometry of the general angle, right and oblique triangles, graphs of trigonometric functions and their inverses, vectors, complex numbers, identities, and equations.
Prerequisite: DSM 0813, or equivalent skills and two high school credits in algebra

MAT 1140 TECHNICAL MATHEMATICS **5 Credits**
5 Class Hours

An integrated course in algebra and trigonometry. Topics include a rapid review of elementary algebra, functions and graphs, exponents and radicals, inequalities, algebraic fractions, right triangle trigonometry and trigonometry of the general angle, vectors, oblique triangles, complex numbers and their operations, exponential and logarithmic functions, determinants and matrices, and trigonometric identities.
Prerequisite: DSM 0813, or equivalent skills and two high school credits in algebra

MAT 1150 BASIC CALCULUS **3 Credits**
3 Class Hours

Topics include differentiation and integration of algebraic and transcendental functions and applications.
Prerequisites: MAT 1120 and MAT 1130, or MAT 1140

MAT 1160 FINITE MATHEMATICS **3 Credits**
3 Class Hours

An introductory course in data processing mathematics. Topics include number bases and operations, sets, logic, and an introduction to probability and statistics.
Prerequisite: DSM 0813, or equivalent skills and two high school credits in algebra

MAT 2000 INTRODUCTION TO CALCULUS **3 credits**

3 Class Hours

A survey of limits, continuity, differentiation, and integration, with applications to business, economics, social, and life sciences. Topics include limits, continuity, rates of change, maximum-minimum problems, related rates, exponential growth and decay, and supply and demand. Rules and techniques are emphasized.

Prerequisite: MAT 1120

MAT 2110 STATISTICS **3 Credits**

3 Class Hours

Topics include a rapid review of elementary probability and descriptive statistics, random variables and expected value, normal and binomial distributions, estimation, hypothesis testing, correlation, and regression.

Prerequisite: MAT 1110 or higher number mathematics course

MAT 2120 INTERMEDIATE STATISTICS **3 Credits**

3 Class Hours

A continuation of MAT **2110** Statistics. Further study in hypothesis testing and estimation and non-parametric statistics, inferences from two samples, multinomial experiments and contingency tables, analysis of variance, and other topics and projects as appropriate.

Prerequisite: *MAT 2110*

MAT 2210 DISCRETE MATHEMATICS **3 Credits**

3 Class Hours

Topics studied include sets, number bases, Boolean algebra, induction, recursion and algorithms, graphs and networks, matrices, and other topics and projects as appropriate.

Prerequisite: MAT 1120 or MAT 1140 or MAT 1160 with permission of the instructor

MECHANICAL ENGINEERING TECHNOLOGY

MET 1010 MATERIALS AND MANUFACTURING PROCESSES **3 Credits**

2 Class Hours, 2 Laboratory Hours

Studies metallic and non-metallic materials including the chemical composition, properties, and methods of producing finished products from raw materials. Covers the applications of the most common plastic resins, along with laboratory experiences using plastic molding machines. The student achieves a working knowledge of the classifications and fabrication characteristics of ferrous and non-ferrous metals. Covers heat treatment, casting processes, hot and cold working, and welding metals with laboratory experiences to illustrate specific principles.

Prerequisite: DSM 0803 or equivalent skills

MET 1013 TECHNICAL DRAWING **2 Credits**

1 Class Hour, 2 Laboratory Hours

An introductory drawing course designed to develop the necessary skills in interpreting engineering drawings. The course covers the essential concepts of lines, geometric constructions, freehand sketching, multiview projection techniques, and sectional views. Additionally, the student will, with the use of the microcomputer and the AutoCAD program, become familiar with the various functions and commands necessary to make simple computer-aided drawings.

Prerequisites: DSM 0803 and DSR 0853 or equivalent skills

MET 1014 ENGINEERING DRAWING **3 Credits**

1 Class Hour, 4 Laboratory Hours

An introductory mechanical drawing course covering the use of instruments, geometric constructions, sketching, multiview projection, sectional and auxiliary views, dimensioning and tolerancing, and the drawing of such special parts as threads, gears, and cams.

Prerequisites: DSM 0803 and DSR 0853 or equivalent skills

MET 1015 TECHNICAL PROBLEM SOLVING **2 Credits**

2 Class Hours

Provides an overview of the engineering world and the MET technician's place in it. The importance of possessing a good attitude and paying close attention to detail is stressed. The student has the opportunity to begin to appreciate and use the language and tools of the math sciences. Additionally, the student is familiarized with individual and group thinking skills and encouraged to utilize the five stages in creative problem solving.

Prerequisite: DSM 0803 or equivalent skills

MET 1120 MACHINE TOOL AND CNC OPERATIONS **4 credits**

3 Class Hours, 2 Laboratory Hours

Studies the various machines and methods used, to make parts from stock materials. Covers all standard types of machines used for metal removal, including their various accessories and cutters. Explores the selection of proper cutting tools and speeds for use on mills, lathes, shapers, and drills. Explores methods of inspection, measurement, gauging, and using computer numeric control programming. The student gains experience in operating and programming a CNC lathe and milling machine.

Prerequisites: MAT 1140 and MET 1014

MET 1122 COMPUTER-AIDED DRAFTING **3 credits**

1 Class Hour, 4 Laboratory Hours

A mechanical drawing course using the AutoCAD system for producing drawings. Students learn to use AutoCAD to create, modify, store, retrieve, and manage CAD drawings and related files.

Prerequisite: MET 1014

MET 2010 HYDRAULICS AND PNEUMATICS **3 credits**

2 Class Hours, 2 Laboratory Hours

Studies fluid mechanics with emphasis on the use of hydraulics and pneumatics for power transmission and control purposes. Explores the use of hydraulics and pneumatics in automated systems. The laboratory work includes hands-on experience with various hydraulic and pneumatic circuits on trainers.

Prerequisite: MAT 1120 or MAT 1140

MET 2011 STATICS AND DYNAMICS **4 Credits**

3 Class Hours, 2 Laboratory Hours

Covers theory and applications of engineering mechanics, basic quantities, units, force, and position vectors; equivalent force systems; structural analysis; center of gravity and centroids; moment of inertia for an area; radius of gyration; and section modulus. The dynamics portion covers mass acceleration, velocity, work, potential and kinetic energy, impulse and momentum. Students will apply computer solutions to specified problems in laboratory work.

Prerequisites: MAT 1140, PHY 1110 and PHY 1111

MET 2110 MECHANICAL EQUIPMENT **4 Credits**

3 Class Hours, 2 Laboratory Hours

Explores the design, selection, installation, and maintenance of manufacturing equipment. Covers the integration of shafts, fasteners, bearings, couplings, gears, belts, pulleys, chain drives, hoists, clutches, brakes, and cams into a manufacturing environment. Applies computer solutions of design and maintenance problems and includes safety considerations of manufacturing equipment.

Prerequisite: MAT 1140, MET 2011

Corequisite: MET 2111

MET 2111 STRENGTH OF MATERIALS **3 Credits**

2 Class Hours, 2 Laboratory Hours

Studies internal stresses and physical deformations caused by externally applied loads to structural members. Teaches methods of calculating these values so students can analyze a given

configuration or design a suitable member to carry safely the imposed loads. The following topics are covered: stress and strain, thermal expansion due to loading, direct shearing stresses, deflections, torsional deformations, and bending moments. Laboratories test strength and deformations of materials. Students apply computer solutions to specified problems assigned in the laboratory work.

Prerequisite: MET 2011

MET 2114 HEATING, VENTILATING AND AIR CONDITIONING **4 credits**

3 Class Hours, 2 Laboratory Hours

Studies the principles of basic systems involved in heating, cooling, and conditioning of air. Major topics include calculation of heat loss and gain for residential and commercial buildings, air distribution, and duct design, and estimating of annual fuel costs. Emphasizes the use of heat pumps, but covers equipment using alternative energy sources. Students apply computer solutions to specified problems assigned in laboratory work.

Prerequisite: MAT 1140, PHY 1110 and PHY 1111

MET 2115 GEOMETRIC DIMENSIONING AND TOLERANCING **3 Credits**

2 Class Hours, 2 Laboratory Hours

Acquaints students with interpreting specifications on engineering drawings. The course covers ISO standards and the ANSI Y14.5M- 1982 system, which is the accepted symbolic design/engineering language. With this system, students are able to replace written instructions, saving time, cutting costs, and improving productivity.

Prerequisites: MET 1010 MET 1014

MET 2116 TOOL AND DIE DESIGN **4 Credits**

2 Class Hours, 4 Laboratory Hours

Familiarizes students with the various design aspects of tools for machine operations, as well as for punches and dies for piercing, blanking, and forming operations, and other tools used in manufacturing processes.

Prerequisites: MET 1014, MET 1120

MET 2120 MECHANICAL DESIGN PROJECT **1 Credit**

2 Laboratory Hours

Designed for the student to select a project on some phase of manufacturing or design. The student submits a written proposal of the project and, upon the instructor's approval, carries it out. The results of the project, including drawings, calculations, materials list, and method of fabrication, are submitted in a final report.

Prerequisite: MET 2010 MET 2011
Corequisites: MET 2110, MET 2111

MET 2122 INTERMEDIATE CAD **4 credits**

2 Class Hours, 4 Laboratory Hours

This course continues where MET 1122 ended. It examines multiview drawings, layers, dimensioning, blocks and attributes, auxiliary views, three-dimensional drawings, and 3-D modeling. Students also use AutoCAD's sketching techniques, make 3-D drawings, and construct 3-D surface models. Student drawings are plotted to scale.

Prerequisite: MET 1122 or prior experience

MARKETING

MKT 1227 SALES TECHNIQUES **3 Credits**

3 Class Hours

Covers the fundamentals of selling, from the determination of customer needs and wants to the close of the sale. Includes buying motives, sales psychology, customer approaches, and sales strategies.

Prerequisites: DSR 0853 and RSE 0733 or equivalent skills

MKT 2220 MARKETING **3 Credits**

3 Class Hours

A survey course which presents information concerning the practices and basic principles of marketing from origin to the ultimate consumer. Emphasizes the marketing mix, buyer behavior, organization and planning, channels of distribution, and promotion.

Prerequisites: DSR 0853 and RSE 0733 or equivalent skills

OFFICE ADMINISTRATION

OAD 1010 RECORDS AND DATABASE MANAGEMENT **4 Credits**

4 Class Hours

Emphasizes proper management, storage, and retrieval of paper, image, and digital records. Covers basic application of filing classification skills using American Records Management Association rules for manual and computerized systems and a microcomputer data base program.

Prerequisite: ENG 1111

OAD 1120 KEYBOARDING\SPEEDBUILDING **4 credits**

4 Class Hours

Introduces keyboarding on computers with emphasis on technique and mastery of the keyboard. Students are guided through touch-typing and speedbuilding exercises with software that immediately calculates speed and accuracy. Instruction is given in document formatting, which includes business letters, tabulations, and multiple-page documents.

OAD 1130 DOCUMENT PROCESSING **4 Credits**

4 Class Hours

A continuation of OAD 1120. Emphasis is on teaching document formatting using Wordperfect and on increasing skill through prescribed drills. In addition to learning intermediate formatting principles for business documents, students complete in-basket exercises.

Prerequisite: OAD 1120 or demonstrated equivalent skill

OAD 1220 BEGINNING WORDPERFECT **4 credits**

4 Class Hours

Designed to present the basic features of Wordperfect word processing software, including formatting, speller, block operations, standardized text, search and replace, fonts, and line draw.

Prerequisite: OAD 1120 or demonstrated equivalent skill

OAD 1230 ADVANCED WORDPERFECT **4 Credits**

4 Class Hours

A continuation of OAD 1220 with emphasis on such advanced features of Wordperfect word processing software as columns, macros, merge, sort/select, headers/footers, footnotes, tables, and graphics. Hands-on experience with the electronic mail, calendar, notebook, and calculator features of Wordperfect Office software in a network environment are provided.

Prerequisite: OAD 1220

OAD 1240 DESKTOP PUBLISHING USING WORDPERFECT **4 credits**

4 Class Hours

Designed to teach students to produce documents on a microcomputer for publication or for the office using the desktop publishing features of Wordperfect. Included in the course is a study of basic typography and page layout design.

Prerequisite: OAD 1230 (A.A.S. Degree)

Cotequisite: OAD 1230 (Certificate of Completion)

OAD 1260 LOTUS 1-2-3 FOR THE ADMINISTRATIVE ASSISTANT **3 Credits**
3 Class Hours

Designed as an introduction for administrative assistants. Hands-on experience is provided using the basic commands, formulas and functions, and graphs. Included in the course are applications commonly used in today's offices.

OAD 1400 ELECTRONIC OFFICE PROCEDURES **4 Credits**
4 Class Hours

Prepares students to meet the challenges and opportunities presented by today's evolving offices. Students complete projects that require good judgment in implementing the most appropriate, effective, and efficient procedures. Course also emphasizes the further development of language skills.

Prerequisite: OAD 1120

OAD 2400 OFFICE ACCOUNTING **4 Credits**
4 Class Hours

Acquaints the student with accounting procedures, accounting for cash, payroll accounting, end-of-period statements, and adjusting and closing procedures. Students complete a practice set related to their option, as well as a computerized accounting exercise.

OAD 2500 LEGAL MACHINE TRANSCRIPTION **4 Credits**
4 Class Hours

Introduces and emphasizes the application of English and typing skills to the production of legal instruments, documents, forms, and letters. Includes an intensive study of spelling, pronunciation, capitalization, and definitions of legal terms.

Prerequisite: OAD 1120

OAD 2540 LAW OFFICE PRACTICES **4 Credits**
4 Class Hours

Acquaints the student with law office ethics, law office procedures, and an understanding of the principles of research, family law, wills and estates, bankruptcy, criminal law, real estate, business organizations, and litigation.

Prerequisite: OAD 1120

OAD 2700 ADMINISTRATIVE MACHINE TRANSCRIPTION **4 Credits**
4 Class Hours

Teaches students to transcribe a wide variety of business communications from machine dictation. Course offers a review of the language arts skills of punctuation, spelling, editing, proofreading, and vocabulary.

Prerequisite: OAD 1120

OAD 2800 OFFICE MANAGEMENT **3 Credits**
3 Class Hours

Studies office organization and function; layout and equipment; selection, training, and supervision of personnel; and planning, organizing, and controlling office services. Course uses the case study method of applying management skills to the electronic office.

Prerequisite: ENG 1111

OCCUPATIONAL THERAPY ASSISTANT TECHNOLOGY

OTT 1100 ORIENTATION TO OCCUPATIONAL THERAPY **1 Credit**
1 Class Hour

Orients the student seeking admission to the Occupational Therapy Assistant Technology Program to the general scope of the profession. Acquaints the student with the equipment, medical terminology, therapeutic media and restorative environment of the occupational therapy field. Gives instruction in the use of therapeutic computer programs. This course is highly recom-

mended for those students who have tested into remedial/developmental courses. Requires approval of the department head for enrollment in this course.

OTT 1110 OCCUPATIONAL THERAPY THEORY AND PRACTICE I **2 Credits**

2 Class Hours

Introduces the basic concepts of occupational therapy. Presents the foundation, history and philosophical base of the profession and its personnel. Content includes the concepts of basic needs and adaptive skill development as the basis of the individual's occupational performance. Delineates the role of the assistant for each of the seven functions of occupational therapy. Explains and introduces practice of the elements of each of the seven functions. Introduces the role of the occupational therapy assistant as a member of the health care team. Presents cultural/ethnic, legal and ethical issues as they relate to the occupational therapy assistant. A self-paced unit on medical terminology is included.

Prerequisites: DSE 0833 and DSR 0853, or equivalent skills

OTT 1120 THERAPEUTIC ACTMTIES I **3 Credits**

2 Class Hours, 3 Laboratory Hours

Presents the principles of design and the fundamentals of manual arts as they relate to clay and woodworking. Emphasis is on clay handbuilding and construction of OT equipment, as well as practical experiences with hand and power woodworking tools. Students are introduced to setting up and maintaining equipment in a safe environment. Attention is focused on the correct body mechanics when using equipment. Students are encouraged to develop problem solving skills through independent planning and research. This course presents the guidelines for an effective teaching technique. Introduces the concept of purposeful activity, adaption, and activity analysis.

Prerequisites: DSE 0833 and DSR 0853, or equivalent skills

OTT 1230 HUMAN DEVELOPMENT **4 credits**

3 Class Hours, 3 Laboratory Hours

Studies the physical, intellectual, social, emotional, and language behavior of the normal person from birth to death. Discusses the causes and results of an interruption in or interference with the developmental process.

Level I Fieldwork integrates the course work with practical experiences with the pediatrics and geriatrics population. The role of the COTA in the school system and the rate of the activity director will be emphasized.

Prerequisites: DSE 0833 and DSR 0853, or equivalent skills
Corequisite: OTT 1240

OTT 1240 THERAPEUTIC ACTIVITIES II **4 Credits**

1 Class Hour, 9 Laboratory Hours

Provides an opportunity for skill development in self care, leisure and work which are appropriate to the developmental stage being presented simultaneously in human development from infancy through old age. Crafts, games, work activities and life skills are emphasized. Provides opportunities for teaching, activity analysis, ordering, and maintaining supplies and equipment.

Prerequisite: OTT 1120
Cotequisite: OTT 1230

OTT 1250 PSYCHOLOGY FOR OCCUPATIONAL THERAPY **3 Credits**

3 Class Hours

Covers a variety of topics within the field of psychology: learning, memory, cognition, perception, consciousness, motivation, emotion, personality, and intelligence. The student is also introduced to concepts which facilitate self-discovery, personal growth, and wellness.

Prerequisites: DSE 0833 and DSR 0853, or equivalent skills

OTT 1260 KINESIOLOGY **2 Credits**

2 Class Hours

Presents in detail the anatomy of neuro-muscular-skeletal systems. Emphasis is placed on normal motion and movement patterns, especially as they apply to physical rehabilitation. Biomechanical principles are introduced.

Prerequisite: BIO 1130, BIO 1131

OTT 2110 OCCUPATIONAL THERAPY THEORY AND PRACTICE II **2 Credits**

1 Class Hour, 3 Laboratory Hours

Provides an opportunity to integrate academic knowledge of occupational therapy functions in a Level I Fieldwork experience which includes a psychosocial and physical treatment setting. The class hour will be presented in a seminar format emphasizing the role of the occupational therapy assistant.

Prerequisite: OTT 1110

OTT 2120 PSYCHOSOCIAL DYSFUNCTION **3 Credits**

3 Class Hours

Discusses cultural/ethnic, age and sexual diversity as it applies to normal and abnormal behavior. Studies the major patterns of abnormal behavior with emphasis on descriptions, possible causes, symptoms, and prognosis. Assessments and treatment are discussed.

Prerequisite: OTT 1250
Corequisite: OTT 2130

OTT 2130 TREATMENT OF PSYCHOSOCIAL DYSFUNCTION **4 Credits**

3 Class Hours, 3 Laboratory Hours

Coordinates the presentation of treatment rationale and application of therapeutic relationships and techniques with those diagnoses being presented in OTT 2120. The OTA treatment and management process for mental health settings are included. Laboratory experiences provide the students an opportunity to lead groups. Simulated treatment groups emphasize interpersonal relationships, value clarification, prevocational activities, communication, and leisure skills.

Prerequisite: OTT 1250
Corequisite: OTT 2120

OTT 2140 PHYSICAL DYSFUNCTION **2 Credits**

2 Class Hours

Studies the physical disease processes, pathologies, or disabilities commonly seen in occupational therapy.

Prerequisites: BIO 1130, RIO 1131
Corequisite: OTT 2150

OTT 2150 TREATMENT OF PHYSICAL DYSFUNCTION **5 Credits**

4 Class Hours, 3 Laboratory Hours

Presents methods and techniques utilized in the application of the occupational therapy process with the client/patient exhibiting dysfunction of physical capabilities. Also includes treatment support skills and evaluation techniques. Laboratory activities include field trips to clinics.

Prerequisites: BIO 1130, BIO 1131
Corequisite: OTT 2140

OTT 2220 LEVEL II FIELDWORK - PSYCHOSOCIAL **8 Credits**

8 Class Hours

Provides the OTA student with the opportunity to apply didactic learning and theory of occupational therapy in psychosocial dysfunction in a clinical or community setting under the supervision of a registered occupational therapist. Academic and clinical educators collaborate on fieldwork objectives and experiences to ensure that the role and functions expected of an entry-level occupational therapy assistant are reinforced.

Prerequisite: All academic coursework and department head approval are required before taking Level II Fieldwork courses.

OTT 2230 LEVEL II FIELDWORK - PHYSICAL **8 Credits**
8 Class Hours

Provides the OTA student with the opportunity to apply didactic learning and theory of occupational therapy in physical dysfunction in a clinical or community setting under the supervision of a registered occupational therapist. Academic and clinical educators collaborate on fieldwork objectives and experiences to ensure reinforcement of the role and functions expected of an entry-level occupational therapy assistant.

Prerequisite: All academic coursework and department head approval are required before taking Level II Fieldwork courses.

OTT 2240 FIELDWORK III **4 Credits**
4 Class Hours

Provides OTA students with an optional experience in a clinical or community setting in which they have a special interest; e.g., geriatrics and developmental disabilities. The fieldwork coordinator and clinical educator determine the assignments.

Prerequisites: OTT 2220, OTT 2230 and approval of department head

OTT 2250 FIELDWORK IV **4 Credits**
4 Class Hours

Provides the OTA student with an opportunity for an advanced training experience in a clinical or community setting; e.g., sensory integration or advanced rehabilitation techniques. The fieldwork coordinator and clinical educator determine the assignments.

Prerequisites: OTT 2220, OTT 2230 and approval of department head

OTT 2260 OCCUPATIONAL THERAPY RESEARCH PROJECT **1 Credit**
1 Class Hour

Provides an opportunity for the nontraditional OTA student to pursue a special interest in the field of occupational therapy. The research project required is determined by the staff and student.

Prerequisite: Approval of department head

OTT 2270 OCCUPATIONAL THERAPY CURRENT ISSUES AND TECHNIQUES **3 Credits**
3 Class Hours

Provides the nontraditional OTA student with the opportunity to participate in a seminar on current issues and techniques in occupational therapy.

Prerequisite: Approval of department head

ETHICS

PHI 1111 INTRODUCTION TO ETHICS **3 Credits**
3 Class Hours

Introduces the study of moral reasoning and judgment: defines the meaning and importance of individual and social morality in human life; discusses the major systems of ethical theory (ethics of virtue, ethics of duty); and applies ethical theory to the study of such moral problems as sexual morality, pornography, abortion, euthanasia, capital punishment, and job discrimination.

Prerequisites: DSE 0833 and DSR 0853 or equivalent skills
Note: PHI 1111 meets the requirement for a Humanities elective.

PHOTOGRAPHY

PHO 1110 BASIC PHOTOGRAPHY **3 Credits**
3 Class Hours

Introduces the operation of a 35mm camera. Topics include camera controls, films, composition, lenses, flash, exposure, light meters, filters, close-up, special effects, and a basic introduction to studio lighting. Emphasis is on color photography.

PHO 1115 PHOTOGRAPHIC VISUAL PRINCIPLES **3 Credits**
3 Class Hours

Presents an overview of the ways we see, use, and communicate with photography. Topics include sensory perception, work of historically significant and contemporary photographers, uses of photography in media and advertising, visual ethics, and new imaging technologies.

PHO 1120 FILM AND VIDEO PRODUCTION **3 Credits**
2 Class Hours, 2 Laboratory Hours

Introduces the skills used in film and video production. Topics include lighting on location and in the studio, audio, the camera, switching operation, the video recorder, and basic editing.

PHO 1130 AUDIO RECORDING TECHNIQUES **3 Credits**
2 Class Hours, 2 Laboratory Hours

Introduces the recording studio. Topics include tape recorders, audio tape, formats, studio design, microphones, mixing, and acoustics.

PHO 1150 PHOTOGRAPHY I **3 Credits**
3 Class Hours

Introduces the basic aspects of photography. Provides instruction in the history as well as the future of still photography. Topics include camera formats, films, electronic photography, light, color and composition.

PHO 1160 PHOTO DARKROOM I **3 Credits**
2 Class Hours, 2 Laboratory Hours

Introduces the custom black-and-white darkroom. Provides basic experience in setting up a darkroom, selecting equipment, lenses, and safety considerations. Darkroom time gives each student practical experience with film developing and black-and-white enlarging.

PHO 1210 BLACK-AND-WHITE PHOTOGRAPHY I **3 Credits**
2 Class Hours, 2 Laboratory Hours

Provides instruction and practical lab experience in various black-and-white shooting and developing techniques. Topics include films, filters, film development, photographic papers, and retouching.

Prerequisite: PHO 1110 on equivalent

PHO 1230 COLOR LAB TECHNIQUES I **3 Credits**
2 Class Hours, 2 Laboratory Hours

Introduces color printing, which includes both broad printing areas: printing from a color negative and printing directly from a color slide.

Corequisite: PHO 1210

PHO 1240 STUDIO AND LIGHTING TECHNIQUES **3 credits**
2 Class Hours, 2 Laboratory Hours

Provides an in-depth study of studio lighting with an emphasis on medium- to large- format cameras. Topics include tungsten and studio flash lighting, camera movements, lenses, exposure calculations, and commercial view camera applications.

Prerequisite: PHO 1110

PHO 1270 PORTFOLIO PRACTICUM **3 Credits**

2 Class Hours, 2 Laboratory Hours

Designed to help build a professional portfolio. Emphasizes portfolio design and presentation. Shooting time gives the students a variety of studio and field shooting experiences in various film formats.

Prerequisite: PHO 1110

Cotequisite: PHO 1240

PHO 1310 BLACK-AND-WHITE PHOTOGRAPHY II **3 Credits**

2 Class Hours, 2 Laboratory Hours

Covers advanced use of black-and-white films and papers. Topics include zone system, densitometry, black-and-white reversal, contrast control, and print funishing.

Prerequisite: PHO 1210

PHO 1320 COLOR LAB TECHNIQUES II **3 Credits**

2 Class Hours, 2 Laboratory Hours

Gives students hands-on experience in various color processes. Topics include E-6 film process, C-41 film process, internegatives, masking, and quality custom printing techniques.

Prerequisite: PHO 1230

PHO 1410 NATURE PHOTOGRAPHY TECHNIQUES **3 Credits**

2 Class Hours, 2 Laboratory Hours

A field course in nature photography. Includes techniques for lighting and photographing plants and animals in both the field and studio.

Prerequisite: PHO 1110

PHO 1430 PORTRAIT AND WEDDING TECHNIQUES **3 Credits**

3 Class Hours

Covers all aspects of portrait and wedding techniques: equipment, outdoor and studio lighting, films, client relationship, and the business aspects of both portrait and wedding photography.

Prerequisite: PHO 1110

PHO 1440 MEDICAL PHOTOGRAPHY TECHNIQUES **3 Credits**

3 Class Hours

Introduces the techniques of medical photography by concentrating on the specific approaches to inner-eye photography using highly specialized equipment, preparing slides, and copying slides.

Prerequisite: PHO 1110

PHO 1450 INDIVIDUAL STUDY **3 credits**

1 Class Hour, 6 Laboratory Hours

Allows the advanced student time for an in-depth exploration of still photography, multi-media, TV production, or audio recording production.

Prerequisites: All 1100 and 1200 level Photography courses. Approval by department head according to availability of lab/studio space.

PHO 1460 OPEN DARKROOM **3 credits**

2 Class Hours, 2 Laboratory Hours

Gives intermediate and advanced students practice and experimentation time in the black-and-white lab, color lab, copy room, and studio.

Prerequisite: PHO 1110

Cotequisites: PHO 1210, PHO 1230

PHO 1470 PHOTOJOURNALISM **3 Credits**

2 Class Hours, 2 Laboratory Hours

Covers all aspects of photojournalism. Emphasizes techniques and equipment needed for shooting for publication, as well as the skills needed for visual communication.

Prerequisite: PHO 1110

PHO 2260 PHOTOGRAPHY II **3 Credits**

2 Class Hours, 2 Laboratory Hours

Introduces the still photography studio. Topics include camera formats, lighting equipment, and exposure calculations. Shooting time gives the students an opportunity to build their portfolios.

PHO 2270 PHOTO DARKROOM II **3 credits**

2 Class Hours, 2 Laboratory Hours

An intermediate course in black-and-white printing. Topics include fiber base papers, photo preservation, densitometry and print finishing. Darkroom experiences are provided with the emphasis on quality.

PHO 2330 PHOTOGRAPHY III **4 Credits**

2 Class Hours, 6 Laboratory Hours

An advanced course in studio lighting techniques with emphasis on portfolio development.

PHO 2340 PHOTO DARKROOM III **3 Credits**

2 Class Hours, 2 Laboratory Hours

Designed to give advanced students in-depth experience in two broad areas of color printing: the EP2 and the Cibachrome printing processes.

PHYSICS

PHY 0900 TECHNICAL PHYSICS BASICS **3 credits**

3 Class Hours

Designed as a review to prepare students with no previous physics background and with weak mathematical background for success in the usual college physics series. Topics include a review of relevant mathematics such as basics of algebra, algebraic equations, trigonometry, and vectors. An introduction to physical mechanics is included. This is a preparatory course that is generally not transferable or accepted toward any degree.

PHY 1010 UTC PHYSICS I **3 credits**

3 Class Hours

An applied course in physics based on a unified approach to the concepts. Four energy systems are defined: mechanical, fluidal, electrical, and thermal. Force is defined for a mechanical system, then force-like quantities are defined for rotating mechanical systems (torque), fluidal systems (pressure difference), electrical systems (voltage), and thermal systems (temperature difference). Strong use of analogies among the four systems constitutes the unified method. Besides force and force-like quantities, work, rate, momentum, resistance, and power are also covered. Dimensional analysis is emphasized throughout.

Corquisites: PHY 1011, MAT 1120 and MAT 1130, or MAT 1140

PHY 1011 UTC PHYSICS I LABORATORY **1 Credit**

2 Laboratory Hours

A laboratory course utilizing several application modules from the concepts covered in PHY 1010.

Corequisite: PHY 1010

PHY 1020 UTC PHYSICS II **3 Credits**

3 Class Hours

A continuation of UTC Physics I using the unified approach to studying analogous concepts in the mechanical, fluidal, electrical, and thermal energy systems. The topics of potential and kinetic energy, force transformers (machines), energy convertors, transducers, vibrations and waves, time constants, and radiation are covered. PHY 1021 is to be taken concurrently.

Prerequisite: PHY 1010

PHY 1021 UTC PHYSICS II LABORATORY **1 Credit**
2 Laborato ry Hours

A laboratory course utilizing several application modules from the concepts covered in PHY 1020.
Corequisite: PHY 1020

PHY 1030 INTRODUCTION TO ASTRONOMY I: THE SOLAR SYSTEM **3 Credits**
3 Class Hours

Introduces the science of astronomy using the Earth-outward approach. Topics include the history of astronomy: Newton's Laws: gravitation: properties of light: kinds of telescopes and their uses; the moon; eclipses: the Sun and its planets: asteroids, comets, and other interplanetary objects. This course may not transfer without the associated laboratory.
Prerequisite: DSR 0853 or equivalent skills

PHY 1031 ASTRONOMY LABORATORY I **1 Credit**
2 Laboratory Hours

A laboratory course to demonstrate physical concepts and data collection studied in PHY 1030.
Prerequisite: DSR 0853 or equivalent skills

PHY 1040 INTRODUCTION TO ASTRONOMY II: THE STARS AND BEYOND **3 credits**
3 Class Hours

A continuation of PHY 1030 that moves the study of astronomy outward from the solar system to our galaxy and distant galaxies. Topics include stars and stellar properties, nebulae, star clusters, galaxies and galactic distributions, pulsars, quasars, neutron stars, black holes, and cosmology. This course may not transfer without the associated laboratory.
Prerequisite: PHY 1030 or permission of the instructor

PHY 1041 ASTRONOMY LABORATORY II **1 Credit**
2 Laboratory Hours

A laboratory course to demonstrate physical concepts and data collection studied in PHY 1040.
Prerequisite: PHY 1031 or permission of instructor

PHY 1050 CONCEPTUAL PHYSICS I **3 Credits**
3 Class Hours

A practical non-mathematical introduction to the physical nature of our world. The course includes topics in mechanics, heat, waves, and sound. Practical applications are emphasized. This course may not transfer without the associated laboratory.
Prerequisite: DSR 0853 or equivalent skills

PHY 1051 CONCEPTUAL PHYSICS LABORATORY I **1 Credit**
2 Laboratory Hours

A laboratory course to demonstrate physical concepts covered in PHY 1050.
Prerequisite: DSR 0853 or equivalent skills
Corequisite: PHY 1050

PHY 1060 CONCEPTUAL PHYSICS II **3 credits**
3 Class Hours

A continuation PHY 1050 that includes topics in electricity, magnetism, optics, modern physics, and astrophysics. This course may not transfer without the associated laboratory.
Prerequisite: PHY 1050 or permission of instructor

PHY 1061 CONCEPTUAL PHYSICS LABORATORY II **1 Credit**
2 Laboratory Hours

A laboratory course to demonstrate physical concepts covered in PHY 1060.
Corequisite: PHY 1060

PHY 1110 COLLEGE PHYSICS I **3 Credits**
3 Class Hours

An algebra/trigonometry-based course in the concepts and principles of the mechanics of non-deformable bodies and heat.
Prerequisite: MAT 1120 and MAT 1130, or MAT 1140
Cotequisite: PHY 1111

PHY 1111 PHYSICS LABORATORY I **1 Credit**
2 Laboratory Hours

Laboratory exercises to accompany PHY 1110.
Corequisite: PHY 1110

PHY 1120 COLLEGE PHYSICS II **3 Credits**
3 Class Hours

An algebra/trigonometry-based course in electricity and magnetism, sound, light and optics, and elements of modern physics.
Prerequisite: PHY 1110
Corequisite: PHY 1121

PHY 1121 PHYSICS LABORATORY II **1 Credit**
2 Laboratory Hours

Laboratory exercises to accompany PHY 1120.
Corequisite: PHY 1120

PHY 1140 DIRECTED STUDY I **1 Credit**

Designed to give the student additional work in physics. Topics covered are chosen based upon students' backgrounds and curriculum needs.
Prerequisite: Approval of department head

PHY 1150 DIRECTED STUDY II **1 Credit**

This course is a continuation of PHY 1140.
Prerequisite: Approval of department head

PHY 1160 DIRECTED STUDY III **1 Credit**

This course is a continuation of PHY 1150.
Prerequisite: Approval of department head

PHYSICAL SCIENCES

PSC 1010 PHYSICAL SCIENCE I **3 Credits**
3 Class Hours

Begins an overview of the physical sciences which covers the basic principles of physics, chemistry, astronomy, meteorology, and geology. Topics include Newton's Law of Motion, the structure of matter, topics in applied physics, basic and applied electricity and magnetism, wave motion, sound, electromagnetic waves, and basic optics. This course may not transfer without the associated laboratory.
Prerequisite: DSR 0853 or equivalent skills

PSC 1011 PHYSICAL SCIENCE LABORATORY I **1 Credit**
2 Laboratory Hours

A laboratory to demonstrate the concepts studied in PSC 1010.
Prerequisite: DSR 0853 or equivalent skills
Cotequisite: PSC 1010

PSC 1020 PHYSICAL SCIENCE II **3 Credits**
3 Class Hours

A continuation of PSC 1010. Topics include radioactivity, basic principles of chemistry, an introduction to organic chemistry and biochemistry, astronomy, geology, meteorology, energy, and the environment. This course may not transfer without the associated laboratory.
Prerequisite: PSC 1010 or permission of instructor

PSC 1021 PHYSICAL SCIENCE LABORATORY II **1 Credit**
2 Laboratory Hours

A laboratory to demonstrate the concepts studied in PSC 1020.
Corequisite: PSC 1020

POLICE SCIENCE TECHNOLOGY

PST 1000 INTRODUCTION TO CRIMINAL JUSTICE **3 Credits**
3 Class Hours

Studies the administration of criminal justice: their purposes, goals, and functions. Covers evaluation of law enforcement responsibilities, techniques, and methods of how police patrol is conducted. Students are provided with a basic understanding of the criminal justice components, including history of law enforcement: DUI enforcement; officer survival; police corruption; sects, cults, and deviant movements; police administration; firearms; and defensive tactics.

PST 1005 INTRODUCTION TO CRIMINOLOGY **3 Credits**
3 Class Hours

Studies societal problems including deviant behavior, its causes, patterns, treatment and prevention.

PST 1010 CRIMINAL LAW AND PROCEDURE **3 Credits**
3 Class Hours

Provides a study of trial procedures, a history of constitutional rights, rules of evidence admissibility, types of evidence, and laws of arrest, search and seizure.

PST 1015 SURVEY OF CORRECTIONS INSTITUTIONS **3 Credits**
3 Class Hours

Introduces students to the concepts and practices of administration operation and management of modern correctional institutions for juveniles and adults.

PST 1020 POLICE ADMINISTRATION **3 Credits**
3 Class Hours

Studies the principles of organization and personnel management functions of the police agency. Topics include policy procedures, operational duties and commands, and evaluation of the research, planning, and development processes.

PST 1025 COMMUNITY-BASED CORRECTIONS **3 Credits**
3 Class Hours

Focuses on alternatives to criminal incarceration including diversion programs such as pre-trial intervention, substitutes for jail, short-term treatment and deferred prosecution programs. Studies the various aspects of resocialization and reintegration into the community.

PST 1030 CRIMINAL EVIDENCE **3 Credits**
3 Class Hours

Develops an understanding of the types, proper treatment and disposition of criminal evidence. Also studies the problems of admissibility in court proceedings. Other topics include rules for obtaining the evidence, types of evidence, principles of exclusion, evaluation and examination of the evidence, proof, competence of witnesses, hearsay rule, opinion, pre-trial discovery, and testimony in court.

PST 1040 UNARMED DEFENSIVE TACTICS **3 credits**
3 Class Hours

Introduces students to a complete basic police defensive tactic system through physical practice of tried and proven uncomplicated movements and control of distance. Emphasis is placed on learning to apply five basic physical control principles to an asaultive or resistive subject. Physical practice gradually increases static, fluid, and dynamic stages of physical interaction. Mental conditioning for survival and a use-of-force continuum are presented. Students correctly demonstrate basic physical control principles.

PST 1050 TACTICAL SHOTGUN **3 Credits**
3 Class Hours

Develops the student's knowledge and operating skills of "tactical response shotgun." Special emphasis is placed on safety, gunhandling, ammo selection, position shooting, marksmanship and tactical movement. Upon completion, the student will be able to explain and demonstrate the safe and proper use of the "tactical shotgun" and have a working knowledge of weapon function, ammunition selection, shotgun wounding characteristics, various applied shotgun techniques, and basic mechanical troubleshooting for the shotgun.

PST 1060 BASIC SURVEILLANCE TECHNIQUES **3 credits**
3 Class Hours

Examines basic police surveillance and counter-surveillance procedures and methods, including foot and vehicle; one-, two- and three-person or ABC surveillance; aerial platform; and electronic and stationary surveillance operations. Hands on training includes these topics: definition and history of surveillance, four basic methods of surveillance, foot surveillance operations, vehicle surveillance procedures, stationary surveillance methods, aerial platform surveillance, counter-surveillance operations, detecting and eluding surveillance operatives, and presentation of surveillance evidence in court.

PST 1070 OFFICER SURVIVAL **3 credits**
3 Class Hours

Studies the basics of police work needed to survive both mentally and physically. The student gains an understanding of basic officer survival tactics and techniques and will be able to explain and demonstrate proper survival techniques used during field interviews, unknown risk calls and traffic stops. Also, provides a working knowledge of survival skills used during domestic calls, crimes in progress, and high risk traffic stops.

PST 1080 INTERVIEWING AND INTERROGATION TECHNIQUES **3 Credits**
3 Class Hours

Provides a study of the techniques utilized in interviewing victims, witnesses, and subjects of interrogations. Topics include preparation and strategy, legal aspects, interpretation of verbal and physical behavior, causes of denial, interviewing, establishing credibility, reducing resistance, obtaining the admission, and the use of video equipment.

PST 1090 TRAFFIC ACCIDENT INVESTIGATION **3 Credits**
3 Class Hours

Studies traffic collisions using scientific methods of vehicle speed calculation, timed distance speed, report writing, and diagramming. Explores the legal, statistical and professional aspects of this interesting field. Includes dynamic vehicle experiments and practical exercises in gathering facts for traffic investigators.

PST 2000 DRUG IDENTIFICATION AND EFFECTS **3 credits**
3 Class Hours

Provides students with the fundamentals for identifying both the appearance and effects of controlled substances. Students receive guides to controlled substances: their color, trade name and drug code. Gives critical examination of the physiological, sociological, psychological, and legal aspects of drug abuse, and many complexities that have developed as a direct or indirect result of their abuse in our society.

PST 2005 CONSTITUTIONAL RIGHTS OF PRISONERS **3 Credits**
3 Class Hours

Studies the legal rights of prisoners including constitutional amendment rights, legal advice and counsel, civil rights, equal protection of the laws and disciplinary proceedings.

PST 2010 CRIMINAL INVESTIGATION **3 Credits**
3 Class Hours

Studies the fundamentals of criminal investigation including crime scene search and recording; collection and preservation of evidence; a survey of related forensic science; interviews and interrogations; and methods of surveillance. Techniques of case preparation and presenting the case to court are also studied.

PST 2015 CORRECTIONAL MANAGEMENT **3 Credits**
3 Class Hours

Examines the organizational structure, training techniques, and roles of correctional administrators including supervision and a study of non-traditional procedures such as community-based programs.

PST 2020 POLICE FIREARMS AND DEFENSIVE TACTICS **3 Credits**
3 Class Hours

Introduces students to police combat firearms training, firearms tactics, deadly force policies and shoot/don't shoot decisions. Course also covers practical, safe operation and firing of handguns; basic defensive tactics, including hand and foot strikes; pressure points and control tactics; basic baton and handcuffing techniques; and use-of-force policies, including different deadly force policies. Students learn how to safely operate and fire a handgun and make use-of-force decisions in both firearms and defensive tactics. Upon completion, students are able to handcuff using proper techniques.

PST 2025 PROBATIONS, PARDONS AND PAROLE **3 Credits**
3 Class Hours

Provides a study of the functions and duties of a probation and/or parole officer with emphasis on the historical aspects, philosophies and standards associated with probation, pardon and parole.

PST 2030 SEMINAR IN POLICE SCIENCE TECHNOLOGY **3 Credits**
3 Class Hours

Provides an opportunity for Police Science Technology students to study the role of law enforcement and corrections in a seminar setting. Also includes off-campus experiences which involve supervised field activities, field site visits and extensive research activities.

PST 2035 JUVENILE PROCEDURES **3 Credits**
3 Class Hours

Introduces students to the concepts of youth crimes and techniques practiced by police and courts in prevention and control. Studies the development and trends in juvenile court procedures.

PST 2040 VIP EXECUTIVE PROTECTION **3 Credits**
3 Class Hours

Examines the basic procedures and methods currently used in VIP protection operations, both in the U.S. and internationally. Topics include the organization and operation of a VIP protective detail, foot and motorcade procedures, special operations concerning VIP protective aerial details, basic counter-surveillance and counter sniper operations, emergency driving procedures, low profile unarmed defensive training, and advance team duties and operations. Hands-on training includes: definition of a protective operation and detail; history of VIP protection; employment and training market: foot and motorcade procedures and operations; basic bomb idenufication and search procedures; counter-surveillance and sniper operations: duties of the

VIP detail member; advance arrangement and support operations: emergency driving operations: weapons and special training of VIP protective detail: detecting and eluding surveillance operatives: close-in protective procedures; and special access procedures, badges and identifications.

PST 2050 POLICE TACTICAL TRAINING (SWAT) **3 credits**
3 Class Hours

Provides an overview of the historical development of special weapons and tactical teams. Techniques of urban and rural movements are discussed and practiced. Breaching techniques and forced entry methods are also covered. Methods of surreptitious and dynamic entry and clearing and hostage rescue are practiced with tactical diagramming and aid planning.

PST 2060 EVIDENCE PHOTOGRAPHY **3 Credits**
3 Class Hours

Studies photographic aspects used in criminal investigation with emphasis on types of cameras and lighting for purpose of recording evidence.

PST 2070 BUSINESS AND INDUSTRIAL SECURITY **3 credits**
3 Class Hours

Studies the functions and concepts of security personnel forces of industrial plants, airports, hospitals, and commercial stores.

PSYCHOLOGY

PSY 1111 INTRODUCTION TO PSYCHOLOGY **3 credits**
3 Class Hours

Introduces the fundamentals of human behavior. Major topics include biological bases of behavior, sensation and perception, motivation, learning and memory, maturation and development, personality, and social psychology. On completion of the course, the student should be able to utilize basic psychological principles to achieve a better understanding of self and others.
Prerequisites: DSE 0833 and DSR 0853, or equivalent skills
Note: PSY 1111 meets the requirement for a Social Sciences elective.

PSY 1115 PSYCHOLOGY OF ADJUSTMENT **3 credits**
3 Class Hours

Studies personal and social adjustment in modern society. Topics include maturing self-concept, healthy interpersonal relationships, constructive management of emotion and stress, and prevention of maladjustment.
Prerequisites: DSE 0833 and DSR 0853, or equivalent skills
Note: PSY 1115 meets the requirement for a Social Sciences elective.

PSY 2111 PSYCHOLOGY OF HUMAN GROWTH AND DEVELOPMENT **3 Credits**
3 Class Hours

Survey of the biological and environmental factors influencing the physical, intellectual, social, emotional, and language development from birth until death. Explores causes and results of interruption in or interference with the developmental process.
Prerequisites: DSE 0833 and DSR 0853, or equivalent skills
Note: PSY 2111 meets the requirement for a Social Sciences elective.

PSY 2113 SOCIAL PSYCHOLOGY **3 Credits**
3 Class Hours

Studies the individual in society. Explores topics of social behavior: conformity, interpersonal relationships, perceptions, prejudice, altruism, aggression, and attitude formation. (This course is the same as SOC 2113.)
Prerequisites: DSE 0833 and DSR 0853, or equivalent skills
Note: PSY 2113 meets the requirement for a Social Sciences elective.

REMEDIAL ENGLISH

RSE 0733 BASIC WRITING **4 Credits**
4 Class Hours

Students study the parts of speech, subject-verb agreement, pronoun usage, punctuation, spelling, and practice writing simple, compound, and complex sentences. Students also write topic sentences in preparation for writing effective paragraphs and practice various methods of paragraph development in a minimum of eight writing assignments, culminating in a fully developed multi-paragraph essay. Writing skills may be further improved through a computer-assisted laboratory.

REMEDIAL MATHEMATICS

RSM 0703 BASIC MATHEMATICS **3 Credits**
3 Class Hours

Studies mathematics competencies that includes whole numbers, fractions, decimals, ratio and proportion, percents, and topics in algebra that include signed numbers, exponents, algebraic expressions with sums and differences, and solving simple algebraic equations.

REMEDIAL READING

RSR 0753 BASIC READING **4 credits**
4 Class Hours

Helps improve students' reading comprehension. Topics will include vocabulary improvement, literal reading comprehension, (recalling story detail, recognizing sequence, identifying main ideas, identifying major and minor support) and inferential reading comprehension (drawing conclusions, making inferences, recognizing implied main ideas).

SOCIOLOGY

SOC 1111 INTRODUCTION TO SOCIOLOGY **3 credits**
3 Class Hours

Introduces the study of society, social groups, and social interaction. Topics include culture and society, socialization, social stratification, minorities, education, religion and social change.
Prerequisites: DSE 0833 and DSR 0853, or equivalent skills
Note: SOC 1111 meets the requirement for a Social Sciences elective.

SOC 1112 SOCIAL PROBLEMS **3 credits**
3 Class Hours

Focuses on issues and topics identified as social problems in American society, such as crime, drug and alcohol abuse, environment, changing family and gender relationships, poverty, and violence.
Prerequisites: DSE 0833 and DSR 0853, or equivalent skills
Note: SOC 1112 meets the requirement for a Social Sciences elective.

SOC 1120 INTRODUCTION TO ANTHROPOLOGY **3 Credits**
3 Class Hours

Introduces the study of human culture. Focuses on human adaptation and diversity, development and variety of economic, political, religious, family and expressive institutions.
Prerequisites: DSE 0833 and DSR 0853, or equivalent skills
Note: SOC 1120 meets the requirement for a Social Sciences elective.

SOC 2000 OBTAINING GAINFUL EMPLOYMENT **1 Credit**
1 Class Hour

Provides students the opportunity to develop a comprehensive plan for successful career employment. Selected topics include resume preparation, interviewing techniques, dressing for success, networking, and employment communications.

SOC 2111 HUMAN RELATIONS **3 credits**
3 Class Hours

Studies the importance of human relations in formal and informal organization. Examines the interactions among individuals, groups, and levels within the associations or organizations that make up society. Such topics as perception, attitudes and morale, communication, leadership, and motivation are developed in class discussion and case studies.

Prerequisites: DSE 0833 and DSR 0853, or equivalent skills
Note: SOC 2111 meets the requirement for a Social Sciences elective.

SOC 2112 MARRIAGE AND FAMILY **3 Credits**
3 Class Hours

Studies the social, cultural, and personal factors relating to mate selection and family life. Assists students in understanding the values, marriages, and families of contemporary Amen-ca. Topics discussed include human intimacy, family relations through the life cycle, kinship, child rearing, sources of strain and violence, and sources of bonding in family life.

Prerequisites: DSE 0833 and DSR 0853, or equivalent skills
Note: SOC 2112 satisfies the requirement for a Social Sciences elective.

SOC 2113 SOCIAL PSYCHOLOGY **3 Credits**
3 Class Hours

Studies the individual in society. Explores topics of social behavior: conformity, interpersonal relationships, perceptions, prejudice, altruism, aggression, and attitude formation. (This course is the same as PSY 2113.)

Prerequisites: DSE 0833 and DSR 0853, or equivalent skills
Note: SOC 2113 meets the requitement for a Social Sciences elective.

SOC 2150 LITERACY IN THE WORKPLACE **3 Credits**
3 Class Hours

Provides students with fundamentals of literacy tutoring including Laubach Literacy Action and Literacy Volunteers of America curricula. Opportunities are offered to tutor students and adults with Metro schools and Nashville READ.

SPANISH

SPA 1111 SPANISH I **4 Credits**
4 Class Hours

Develops the student's ability to use Spanish. Students develop proficiency in hearing, speak-ing, reading, and writing elementary Spanish.

Prerequisite: DSE 0833 or equivalent skills
Note: SPA 1111 meets the requirement for a Humanities elective.

SPA 1112 SPANISH II **4 Credits**
4 Class Hours

Refines the student's ability to use Spanish. Students improve proficiency in hearing, speaking, reading, and writing elementary Spanish.

Prerequisite: SPA 1111 or permission of instructor

SPEECH

SPE 1111 SPEECH **3 Credits**

3 Class Hours

Introduces students to the fundamentals of speech. Impromptu speeches, informative speeches, and a formal proposal give students experience in oral communication, particularly as it relates to business. Students also take part in mock job interviews.

Prerequisite: ENG 1111

PERSONAL FINANCE

SSC 1111 PERSONAL FINANCE **3 Credits**

3 Class Hours

Acquaints the student with the importance of building an economic foundation and achieving goals through planned allocation of income. The understanding of budgeting, insurance, taxation, credit, investments, housing, estate planning, and their effects on an individual's well-being are presented from the standpoint of conservation of individual resources. The primary goal of the course is to assist the student with developing financial life skills and knowledge necessary to function more effectively in society.

Prerequisites: DSE 0833 and DSR 0853, or equivalent skills

Note: SSC 1111 meets the requirement for a Social Sciences elective.

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Cerufied Professional Secretary, 1992

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First Class Radio-Telephone License, 1976
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Certified Photo Finishing Engineer, 1994

ARTS AND SCIENCES DIVISION

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B.A., 1966, Murray State University
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A.S., 1992, Nashville State Technical Institute

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B.S., 1973, Murray State University
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B.A., 1970, James Madison University
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B.S., 1969, University of Tennessee
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Registered Occupational Therapist, 1960

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BUSINESS AND INDUSTRY TRAINING DIVISION

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SPECIAL INTEREST AND OFF-CAMPUS COURSES

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State Cerufication in Guidance and Counseling, 1975

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ADMISSIONS

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Certified Clinical Mental Health Counselor, National Academy of Certified Mental Health Counselors, 1981

National Certified Counselor, National Board for Certified Counselors, 1986

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B.S., 1985, Tennessee Technological University

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B.A., 1980, Campbellsville College

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California Teaching Credential, 1990

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Cecil H. Ivy — **Shipping and Receiving Clerk**

PURCHASING AND TRAVEL

Howard E. Witherspoon — **Buyer**

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B.A., 1986, Georgia State University

PHYSICAL PLANT

Russell W. Christopher — **Director**

B.S., 1965, Miami University

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A.A., 1976, Western Kentucky University

GROUNDS, LANDSCAPING AND CUSTODIAL

Jim Wharton — **Custodial Supervisor**

James M. Bond — **Custodian**

Eddie L. Brown — **Custodian**

Joe C. Bush	Custodian
Milton Howe	Custodian
Flora L. Morton	Custodian
Carolyn Owens	Custodian
Portia A Reed	Custodian
Gary T. Shannon	Custodian
Sallie L. Short	Custodian
Jesse Smith, Jr.	Custodian
Ollie M. Trotter	Custodian

MAINTENANCE AND OPERATIONS

Willard J. Frazier	Maintenance Supervisor
James W. Bryant	A/C Heating Mechanic III
Charlie T. Dickson	Maintenance Worker
Ray T. Wall	Maintenance Worker

SAFETY AND SECURITY

Benjamin H. McHenry	Director
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Jeffrey Men Isbell	Security Guard I
Jeffrey L. Myers A.S., 1982, Aquinas Junior College	Security Guard I
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