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STCC

South Texas Community College

3201 W. PECAN BLVD.
McALLEN, TEXAS 78501
(210) 618-8323

Admissions and Records





**Texas State
Technical College**

H A R L I N G E N

**1994 - 1996
C A T A L O G**

**Produced by Public Information Office
1994**

Disclaimer: While this catalog was prepared on the basis of the best information available at the time, Texas State Technical College reserves the right to change any information, including statement of fees, course offerings and admission and graduation requirements, without notice or obligation, in keeping with the policies of the Board of Regents and in conformance with the laws of the State of Texas.

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Farm and Ranch Management			
Food Service Technology			

President's Message



J. Gilbert Leal, Ph.D.
President

Welcome to Texas State Technical College...

Texas State Technical College has provided quality education while preparing students to meet the challenges of the future. Our success in this effort can be measured by the continued demand for Texas State Technical College graduates from business and industry, and by the accomplishments of those who decide to continue their education at an upper-level college or university.

The faculty and staff of Texas State Technical College are committed to providing students with quality instruction and services, designed to create the opportunity for you to reach your educational goals.

Education is a discovery process...a process that leads to success. In today's world of technological change, success happens to those who meet the future with a good academic and technical education.

We are proud of Texas State Technical College and invite you to share the excitement and opportunity of the future with us. Fulfilling your educational goals is a challenge. It is a challenge you and Texas State Technical College will meet together. Welcome to your future.

Where to Write or Telephone

The address for TSTC is :
Texas State Technical College
2424 Boxwood St.
Harlingen, Texas 78550-3697.

The general campus telephone number is
(210) 425-0600.

To obtain an Application Packet and other general information, send your request to the address above, Attention: Admissions, or telephone (210) 425-0664.

If you would like more information or have questions about specific programs, address your correspondence to the attention of these departments at the address above, or call directly to the telephone number listed.

Admissions:

Admissions Information Desk, 425-0664.
Office of Admissions and Records, 425-0663.

Books and supplies:

Bookstore, 425-0657

Campus housing:

Office of Campus Housing, 425-0662.

Campus tours:

Director of Student Life, 425-0675.

Counseling and guidance in selecting a major:

Counseling and Testing Office, 425-0676.

Continuing education:

Office of Adult and Continuing Education
425-0730.

Employment of graduates:

Placement Office, 425-0629.

Financial assistance:

Financial Aid Office, 425-0670.

Holding meetings, etc., on the TSTC campus:

Conference Center Coordinator, 425-0642.

Industrial training or other special training program:

Office of Economic Development &
Industrial Training, 425-0608.
Conference Center Coordinator, 425-0642.

Library materials:

Library, 425-0631.

Speakers or presentations about TSTC:

Campus Information Office, 425-0775.

Student records:

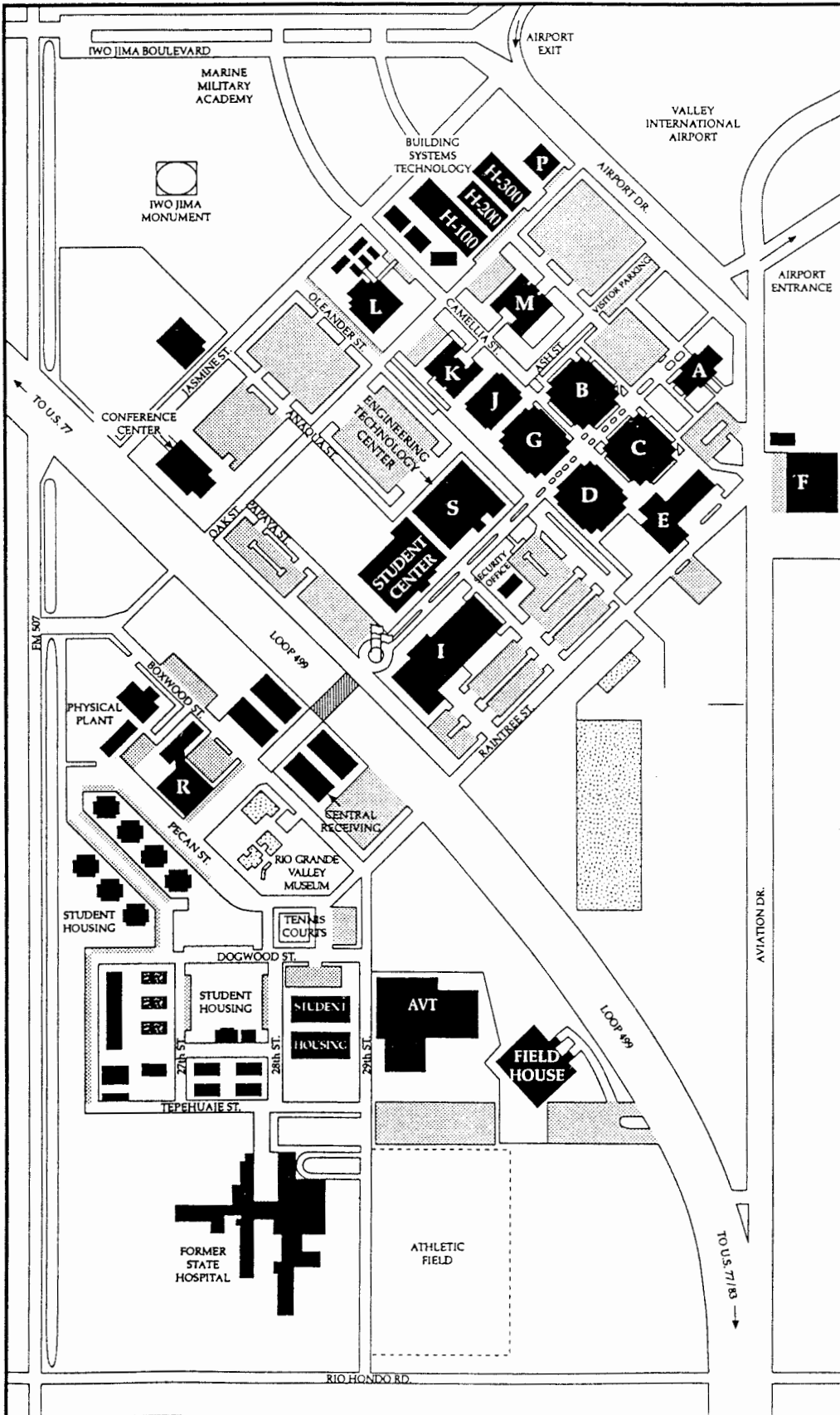
Office of Admissions and Records, 425-0663.

Veterans benefits:

Veterans Affairs Office, 425-0671.

Programs of Study:

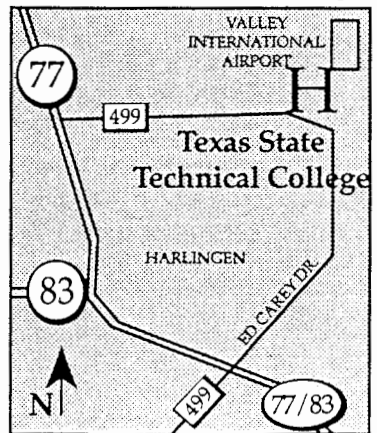
Air Conditioning and Refrigeration
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Automated Manufacturing Technology, 425-0747.
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Biomedical Equipment Technology, 425-0725.
Building Construction Technology, 425-0724.
Business Skills, 425-0726.
Chemical Technology, 425-0736.
Computer Maintenance Technology, 425-0738.
Computer Science Technology, 425-0755.
Dental Laboratory Technology, 425-0739.
Drafting and Design Technology, 425-0742.
Electronics Servicing, 425-0745.
Electronic Technology, 425-0764.
Emergency Medical Technology, 426-0732.
Farm and Ranch Management, 425-0752.
Food Service Technology, 425-0753.
Health Information Technology, 425-0673
Industrial Maintenance Mechanics, 425-0747.
Information Management Technology, 425-0636.
Machining Technology, 425-0761.
Medical Information Specialist/Transcriptionist,
425-0762.
Nurse Assistant, 425-0765.
Surgical Technician, 425-0766.
Welding Technology, 425-0707.



CAMPUS SERVICES	BUILDING
Admissions.....	A
Administration.....	I
President.....	I
Instruction.....	I
Administrative Services.....	I
Business Services.....	Student Center
Student Services.....	Student Center
Adult Cont. Education.....	Conf. Center
Bookstore.....	Student Center
Business Office.....	A
Cafeteria/Dining.....	Student Center
Campus Housing.....	R
Campus Information (Recruiting).....	P
Counseling.....	Student Center
Financial Aid.....	A
Human Resources (Personnel).....	I
Information Desk.....	A
Instructional Development.....	B
Intramural Sports.....	Field House
JTPA Office.....	A
Library.....	B
Media Center.....	B
Nurse.....	Student Center
Placement.....	B
Public Information/Development.....	P
Receiving/Shipping.....	Receiving
Security.....	Security Office
Support Services.....	A
Testing.....	Student Center
Veterans' Affairs Office.....	A

PROGRAMS OF STUDY	BUILDING
Air Conditioning & Ref.....	H-100/200
Associate Degree Nursing.....	D
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Automated Manufacturing Tech.....	S
Automated Office Technology.....	C
Automotive Technician.....	E
Aviation Maintenance Technology.....	AVT
Biomedical Equipment Technology.....	D
Building Construction Technology.....	H-300
Business Skills.....	C
Chemical Technology.....	J
Computer Maintenance Technology.....	G
Computer Science Technology.....	G
Dental Laboratory Technology.....	D
Drafting & Design Technology.....	S
Electronic Technology.....	G
Electronics Servicing.....	G
Emergency Medical Technology.....	PB8
English Department.....	K
Farm & Ranch Management.....	M
Food Service Technology.....	M
Health Information Technology.....	L
Information Management Tech.....	S
Instrumentation Technology.....	J
Machining Technology.....	I
Math/Physics Department.....	K
Medical Information Specialist /Trans.....	L
Nurse Assistant.....	L
Surgical Technician.....	L
Welding Technology.....	I

Existing TSTC Buildings	Parking
Buildings Under Construction	Non TSTC Buildings



General Information



Texas State
Technical College

General Information

History

The James Connally Technical College was originated by the 59th Texas Legislature. Governor John Connally signed the bill on April 22, 1965, which authorized the Board of Directors of Texas A & M University to establish "a coeducational institution which may offer courses of study in vocational-technical education for which there is a demand within the State of Texas." The closing of James Connally Air Force Base in Waco provided excellent facilities for developing a variety of educational programs authorized in the 1965 bill.

The Harlingen campus was founded in 1967 as an extension of the the James Connally Technical College in Waco. The extension used a section of the former Harlingen Air Force Base and city-owned building to offer technical development classes. Those classes filled a widely recognized need for technical training in the Rio Grande Valley.

The separation from Texas A & M University came by an act of the 61st Legislature, effective September 1, 1969. The name was then changed to Texas State Technical Institute and a Board of Regents was appointed as its governing body.

Another dimension of the TSTI-Harlingen campus was added in 1983 with the establishment of the McAllen Campus center. The extension was established by passage of House Bill 178 by the 68th Texas Legislature. Buildings and facilities have been provided through the city of McAllen. Programs offered at the McAllen Campus are designed to meet the particular employment needs of McAllen, Hidalgo County and the surrounding area.

In September of 1991, TSTI's name was officially changed to Texas State Technical College. In September of 1993, the McAllen Campus separated from the TSTC System and became South Texas Community College.

Today, the TSTC System now has four campuses located in Waco (1965), Harlingen (1967), Sweetwater (1970) and Amarillo (1971), with extension centers located in Abilene (1985), Breckenridge (1989), Brownwood and Marshall

(1991). The independent status of TSTC is a direct result of its success in establishing high-quality occupational education needed by business and industry in Texas. Support and response from industry, business and government assure continued growth and development of TSTC and its services to students.

Role and Mission

The Texas State Technical College System is a coeducational two-year institution of higher education offering courses of study in technical-vocational education for which there is demand within the State of Texas.

The Texas State Technical College System shall contribute to the educational and economic development of the state of Texas by offering occupationally oriented programs with supporting academic coursework, emphasizing highly specialized advanced and emerging technical and vocational areas for certificates or associate degrees.

The Texas State Technical College System is authorized to serve the State of Texas through excellence in instruction, public service, faculty and manpower research and economic development. The system's economic development efforts to improve the competitiveness of Texas business and industry include exemplary centers of excellence in technical program clusters on the system's campuses and support of educational research commercialization initiatives. Through close collaboration with business, industry, governmental agencies and communities, including public and private secondary postsecondary educational institutions, the system shall facilitate and deliver an articulated and responsive technical education system.

In developing and offering highly specialized technical programs with related supportive coursework, primary consideration shall be placed on industrial and technological manpower needs of the state. The emphasis of each Texas State Technical College System campus shall be on advanced or emerging technical programs not commonly offered by public junior colleges.

Expanded Statement of Purpose

The expanded purpose of TSTC rests in serving as the state's premier provider of advanced technical education, training programs and technical assistance to industry. TSTC is responsible for developing and delivering exemplary instructional programs for the application and commercialization of current and emerging technologies. These programs require both research and development, as well as critical massing of instructional resources for educational effectiveness and cost efficiency. As a result, students are able to demonstrate their competence in and mastery of technical curricula and interpersonal skills, as well as the abilities to think critically, make decisions and communicate effectively. Employer satisfaction with the level of TSTC graduate technicians' knowledge, skills and attitudes is demonstrated by placement of graduates in responsible business and industry positions.

As increased need for technicians in specific technology develops, TSTC is empowered to disseminate and diffuse prototype instructional programs to community and junior colleges throughout the state and nation to meet workforce demands for occupational specialists. This diffusion of programs is evidenced through joint ventures and articulation programs with these institutions and through the development and delivery of itinerant technical education and training services throughout the state.

In addition to its technical education programs, TSTC also provides technical training programs to business and industry, as well as training programs for community and state economic development. These programs include new plant start-up and expansion training, re-training for displaced workers, specialized contract (technology transfer) training and workplace literacy for industry, safety training and employee training for other state agencies. TSTC works with the Texas Department of Commerce to develop and provide regional economic development training for rural communities.

In an effort to reach potential high school dropouts and to provide direction for secondary students enrolled in high school general education courses, TSTC coordinates technology-related instruction at the high school level with its Associate Degree programs. The success of these

efforts is manifested by the increased number of high school students who complete their high school education and who either continue their education or are able to find employment.

Furthermore, in response to increased numbers of under-prepared students, TSTC provides pre-technical training for the development of entry-level skills necessary for successful outcomes in technical education. This effort permits these students the opportunity to successfully complete a TSTC program of technical education.

Precepts

The following precepts have evolved from TSTC's historical development and its legislative mandate. These precepts reflect the values and culture of TSTC. They also provide the foundation for and give direction to the vision and strategic goals of the institution.

- * TSTC, as a technical college, is a unique, special-purpose institution among the higher education community in Texas.
- * TSTC utilizes an instructionally intensive teaching format which stresses hands-on laboratory experience.
- * TSTC stresses primary service to full-time students, but also offers opportunities for part-time students.
- * TSTC is a residentially-based institution, providing technical education to students from all areas of Texas.
- * TSTC stresses one- and two-year technical and vocational Associate Degree and Certificate programs that are unique in nature.
- * TSTC is a system of technical colleges and centers.
- * TSTC stresses programmatic, facility, resource and personnel development of its primary campuses—Harlingen, Waco, Sweetwater and Amarillo—to assure a strategic massing of resources sufficient to assure excellence in technical education.
- * TSTC directly and actively supports economic development efforts at the state, regional and local levels through education.
- * TSTC stresses the teaching and learning of those attitudes and values associated with a productive work culture.
- * TSTC seeks active involvement and input from business and industry to assure curricula

relevancy and the need for new programs and courses.

* TSTC stresses excellence in all programs, Certificate and Associate Degree, as well as in short-term training for industry.

Vision

The vision statement for TSTC reflects more than TSTC's purpose. It is the image of TSTC's full potential; an image that is dynamic and requires constant growth on the part of all persons who may become a part of this vision.

Texas State Technical College will be a "world-class" collegiate leader in technical education offering Texas and Texans unique learning opportunities designed to maximize student acquisition of knowledge, values, attitudes and skills needed for the development of a "quality workforce."

Goals

TSTC has established six goals which provide the focus and direction for the establishment of strategic objectives which in turn specify what is to be done for the goals to be achieved and for the vision and purpose to become a reality:

- I. Quality: To provide exemplary technical programs, services and instruction.
- II. Opportunity: To provide statewide student access to TSTC programs and services.
- III. Cooperation: To provide an articulated technical education and training system for Texas.
- IV. Commitment: To provide an education delivery system of programs and services support of Texas economic development.
- V. Management: To provide an organizational structure and culture supportive of responsive and responsible decision making.
- VI. Investment: To provide resource attainment and image development for "world class" status.

Location

TSTC-Harlingen is located in semi-tropical Cameron County, the southernmost county in Texas. The campus serves a population of more than 750,000 in the immediate commuting area of South Texas. This location also attracts students from other Texas cities and northern Mexico.

Within 45 minutes of the Harlingen campus is South Padre Island, recognized for its excellent recreational facilities. Also nearby is the city of Brownsville and the international border with Mexico.

The address is:

TSTC Harlingen
2424 Boxwood St.
Harlingen, Texas 78550-3697.
(210) 425-0600.

Buildings and Facilities

TSTC-Harlingen is a modern 112-acre campus consisting of 22 instructional facilities equipped for learning. The most recent campus additions were the George F. Young Engineering Technology Center and the Central Chilling Plant, which were completed in 1992. Currently under construction and scheduled for completion during Summer 1994 are the Aviation Technology Building and Student Efficiency Apartments. The next planned academic facilities are the Health Sciences Technology Center, a new Autobody/Automotive Technology Building and an Academic Studies Building.

Students may choose a total residential life in campus housing on the Harlingen Campus. Other buildings include the Student Services Building, the Student Center (Recreation, Testing, Counseling, Student Nurse, Bookstore, and Cafeteria) and Gymnasium. Recreation facilities include tennis courts, softball diamonds, football fields, outdoor basketball courts and soccer field. The Campus Master Plan calls for the addition of several new buildings in the near future.

Accreditation and Associations

TSTC-Harlingen is accredited by the Commission on Colleges of the Southern Association of Colleges and Schools to award the Associate of Applied Science degree. It operates under the auspices of the Texas Higher Education Coordinating Board.

TSTC is also a member of the American Association of Collegiate Registrars and Admissions Officers and is listed in that association's Report of Credit Given. In addition, TSTC is a member of the Association of Texas Colleges and

Universities. The Health Information Technology program is accredited by the Committee on Allied Health Education and Accreditation in cooperation with the Council on Education of AMRA.

This information can be reviewed by any interested party in the Library.

Instruction

The goal of TSTC is to prepare trained employees for tomorrow's jobs. This is achieved through a curriculum designed to give students the technical knowledge and skills needed in business and industry.

To achieve this, faculty members are highly qualified and have years of business and industrial experience in their fields of specialization. The laboratories and shops on campus are equipped to provide students with the opportunities to apply technological principles and technical knowledge to problems related to their areas of study.

Associate of Applied Science Degree Programs

Associate Degree programs are designed to train technicians, the personnel who work between the professional and the skilled craftsman. Graduates of these programs receive Associate of Applied Science degrees.

Because technicians must be able to understand the profession and translate ideas into actual processes, the technical programs of study provide additional theory and laboratory classes as well as laboratory and shop experience. The curricula are generally based on mathematics and the sciences.

Certificate Programs

Certificate programs are designed to produce the skilled workers needed by modern industry. Graduates are awarded certificates acknowledging completion of their programs.

Skill programs emphasize laboratory and shop experience rather than theory classes.

Day and Evening Programs

The entire curricula of all programs of study are taught during day classes. Selected courses

from the curriculum are offered as evening classes, which are announced when available.

In addition, the Continuing Education Department of the Special Instructional Programs Division offers a variety of non-credit evening classes in response to community needs and requests. More information is included in the Special Instructional Programs section of this catalog.

School-Industry Cooperative Committees and Advisory Committees

School-Industry Cooperative Committees are established to assist TSTC faculty by providing the information necessary for curriculum design and determining course content for each instructional program. Members of these committees are selected from industries across the State of Texas.

From these members, advisory committees are established to annually evaluate the teaching, curriculum and facilities in each program and to make recommendations for improvements. As a result of the advice and assistance rendered by these committees, TSTC's students receive excellent training and, upon graduation, possess the knowledge and skills required by industry.

Special Instructional Programs

In addition to regular credit programs, TSTC offers a number of special instructional programs to provide opportunities for those who wish to increase their business and professional skills or to acquire new skills.

Services offered by the Special Instructional Programs Division include:

- *Developing training or retraining programs in response to requests or needs of businesses or other institutions and agencies.
- *Offering specialized training such as clinics, seminars, workshops and short courses.
- *Providing training for industrial start-up or expansion projects.
- *Offering continuing education to community residents for professional development, personal improvement and recreational interests.

Cooperative Education

Cooperative Education is a training program that provides students with an opportunity to integrate formal laboratory classroom work with planned and supervised experience in industry, business or government. Students are given the chance to earn a salary to finance their education. This program allows students to participate in off-campus work experiences that are integrated with, and supplemental to, their education and career goals.

TSTC has identified industries and businesses that are interested in participating in the Cooperative Education Program. After students are recruited from one of the accredited programs and their applications for co-op admission processed accordingly, arrangements are made for an interview with prospective companies. Upon being hired, the student pays tuition and fees for the course. By combining practical on-the-job training with classroom learning at TSTC, students are better prepared to meet the challenges of changing technology in today's workforce. For more information, contact the Director of Cooperative Education.

College Connections

As part of the College Connections program at TSTC, high school students may enroll for college courses while still in high school, with their principal's permission. Students must have completed their junior year to be eligible.

Course credits are recorded toward high school graduation requirements, while at the same time college credits are "banked" until completion of one full quarter of resident TSTC study, at which time they are entered on the respective college transcript. For more information on College Connections, contact the Director of Collaborative Projects.

Tech Prep

TSTC is part of the Rio Grande Valley Tech Prep Consortium, which includes 23 school districts, six colleges and universities and numerous business, government, professional, community and labor organizations. The Tech Prep mission is to provide high school and post secondary students with advanced skills for tomor-

row's jobs, and a more effective technical curriculum and post secondary opportunities to ensure their quality of life.

The consortium is implementing curriculum in Engineering/Manufacturing Technologies, Allied Health/Nursing Technologies and Business/Office Technologies. Tech Prep students earn 10 to 15 college credit hours for work done in high school without charge to the students. Central Power and Light Company has funded scholarships for students pursuing Tech Prep majors at TSTC.

A direct linkage to Tech Prep is the Manufacturing Technologies Laboratory (MTL) Program, which offers a new educational approach to career planning. For all students in grades K-12, the MTL program focuses on interdisciplinary study, hands-on learning and the development of work skills relevant to today's jobs. The MTL program exposes all students to technology education.

These two programs (Tech Prep and the MTL) working together, provide a real-world K-14 educational experience for all students that will result in an increased understanding of what technical competency means in relation to their job futures and career choices. For more information, contact the Director of Tech Prep.

Individualized Instruction

Some programs of study at TSTC are offered with individualized instruction. In these programs, the student may elect to complete course requirements at his or her own pace. The student enrolls for an agreed number of contact hours and is awarded credit when course objectives are met.

Individualized instruction allows the student to advance through the program requirements at a level that is comfortable to him or her. This may be slower or faster than would be required if the student were enrolled in regular courses.

Automated Manufacturing Technology, Automated Office Technology and Welding Technology may be taken as individualized programs. Interested students should consult the program chairman for more information.

Technical Research

TSTC conducts a continuous research program on the manpower development and utilization needs of Texas industry. The goal of this research is to identify the industrial manpower training and retraining needs for the present and future. These

findings form the basis to either create new curricula or to update and modify existing ones.

TSTC Rights

Texas State Technical College reserves the right to limit the enrollment of any program and to make any changes in the provisions of this catalog document when such action is deemed to be in the best interest of the student or TSTC. These provisions may include, but are not limited to, organization, fees, program offerings, curricula, courses and requirements.

Affirmative Action

TSTC is an equal opportunity educational institution and employer and is dedicated to a policy of non-discrimination in employment or training. Qualified students, applicants or employees will not be excluded from any course or activity because of age, race, creed, color, sex, religion, national origin or handicap.

The institution also complies with the specification for employment as contained in the Texas Equal Opportunity Plan.

School Calendar

1994-95 School Year

Fall 1994

September 5, 1994	Holiday
September 6-7, 1994	Registration
September 8, 1994	First Class Day
November 23, 1994	End of Quarter
November 24-25, 1994	Holidays
November 28 - December 2, 1994	Quarter Break

Winter 1994

December 5, 1994	Registration
December 6, 1994	First Class Day
December 23, 1994 - January 1, 1995	Holidays
January 2, 1995	Student Holiday
February 27, 1995	End of Quarter
February 28, 1994 - March 5, 1995	Quarter Break

Spring 1995

March 6, 1995	Registration
March 7, 1995	First Class Day
April 14, 1995	Holiday
May 23, 1995	End of Quarter Break
May 29, 1995	Holiday
May 30, 1995	Quarter Break

Summer 1995

May 31, 1995	Registration
June 1, 1995	First Class Day
July 3 - 7, 1995	Student Holidays
August 22, 1995	End of Quarter
August 23 - September 1, 1995	Quarter Break

Fall 1995

September 4, 1995	Holiday
September 5 - 6, 1995	Registration
September 7, 1995	First Class Day
November 22, 1995	End of Quarter
November 23 - 24, 1995	Holidays

Admissions & Records



**Texas State
Technical College**

Admissions and Records

Admission to TSTC is based on the qualifications of each applicant without regard to the individual's sex, race, color, creed, age, religion, handicap or national origin. All students seeking admission to any regular TSTC program must submit the following items to the Office of Admissions and Records:

1. Completed application for admission, which includes the student statistical information and health services forms. An application is valid only for the registration date and major indicated on it. If a prospective student wishes to change the registration date or major, the student must submit this information in writing to the Admissions Office before the registration date.
2. Report of scores from the Campus Placement Test. Arrangements to take the test may be made at the Office of Guidance and Counseling. Scores of the test are used to provide guidance information to the prospective student. A nominal fee is charged.
3. One or more of the following documents is required: (a) official high school transcript reflecting completion of regular curriculum and graduation date. (b) high school equivalency (GED) scores. (English version) (c) official college transcript(s). A student who has attended any post-secondary institution must submit a transcript from that institution whether or not any credits were earned.

NOTE: For a student to be admitted by individual approval, the following steps must be taken:

1. The student must show proof of demonstration of the Ability to Benefit from the college's educational programs.
2. The student must be 17 years old but not yet 18 years old, the student must obtain a letter from the last secondary school attended, stating that the student will not or may not return to that school and that it would be to the student's advantage to attend TSTC.
3. The student must provide adequate documentation, through appropriate testing results, that indicates that he or she possesses the skills necessary to enter the program of study selected. The student must achieve

appropriate scores on the Campus Placement Test.

The Office of Admissions and Records maintains continual communication with the prospective student as to the status of these requirements.

Failure to submit required documents within a reasonable time after registration may result in termination. Any student who has not submitted all required documentation due to special circumstances may be accepted by the Director of Admissions as a provisionally admitted student for one quarter.

Ability to Benefit

Effective Spring, 1991, all new students must have proof of high school graduation or GED. If not, admission to the college may be granted only if the student:

1. takes the TASP and passes all portions of the test prior to enrolling, or
2. enrolls as an undeclared major.

Immunization

All non-resident and foreign students must provide written proof from a medical office of:

1. a negative tuberculin skin test or chest x-ray.
2. a polio immunization if the applicant is under 19 years of age.
3. a diphtheria/tetanus injection within the last ten years.
4. a completed medical history form, which is included in the application for admission.

Student File Number

The student's Social Security number is used as the file identification number and is part of the application for admission and other forms used as part of the registration process. A prospective student who does not have a Social Security number should apply to the local Social Security Office to secure a number to complete the application for admission. Foreign students are assigned a school I.D. number for processing of the application.

Technical and Skill Program Admission Requirements

In addition to fulfilling general admission requirements, the student must also be admitted to one of the Associate Degree technical programs or Certificate skill programs offered. Specific admission requirements are stated in the programs of study section of this catalog.

The student who needs to develop basic skills, such as mathematics and reading, may be required to enroll in remedial studies prior to enrolling in certain general education courses. These students will be identified through testing and notified of their need to enroll in remedial studies. Requirements may vary among programs of study.

Remedial courses do not count toward graduation requirements.

Allied Health Programs Clinical Requirements

Before enrolling in clinical or cooperative study, a student in any of the allied health programs must have on file with the TSTC nurse all of the following material:

1. results of a prescribed physical examination.
2. proof of required immunizations.
3. all students enrolled in health related courses which have or will have direct patient contact, especially contact with patients' blood, must have the Hepatitis B vaccine.
4. proof of liability insurance of at least \$1 million (available through TSTC).
5. proof of health and accident insurance

These programs include Biomedical Equipment Technology, Emergency Medical Technology, Health Information Technology, Medical Information Specialist/Transcriptionist, Nurse Assistant, Surgical Technician and ADN.

Special Instructional Programs Admissions

Admission requirements for special instructional programs vary. More information is included in the Special Instructional Programs

section in this catalog, or through the Office of Special Programs.

Notification of Acceptance

After the applicant has met the general admission requirements, he or she will be notified of acceptance by the Director of Admissions.

Registration Procedures

All students must register when first entering TSTC and thereafter at the beginning of each term of attendance. Early registration periods for new and returning students are designated in advance of each quarter term. Regular registration dates are also designated. To register, the student must:

1. Obtain a schedule of courses and a registration permit.
2. Obtain assignment to student housing, if applicable.
3. Turn in all registration papers to the Office of Admissions and Records.
4. Pay fees. The Student Fees, Campus Housing and Financial Aid sections of this catalog include more information.
5. Comply with the "Ability to Benefit."
6. Comply with the "Residency" requirement.

Transfer Students

At least two weeks before registration, transfer credit must be evaluated and substitutions authorized by the program chairman. The request is then submitted to the Office of Admissions and Records for approval by the Director of Admissions.

Credit may be given for work successfully completed at other educational institutions. Transfer credits to be substituted for courses shown in this catalog require the written approval of the program chairman in the technical field of study. In related instruction courses, the additional approval of the program chairman offering the course is also required.

A transfer student must have an official transcript from the last institution in which he or she was enrolled sent directly to the TSTC Office of Admissions and Records. A transfer student must have been in good standing and be eligible to return to that institution.

Evaluation and guidance tests for a transfer

student are the same as for any student entering for the first term.

Residence Status for Students

Proof of residency must be provided prior to registration, at the time of application to TSTC. The student is also required to sign and submit an Oath of Residency. Any violation of this oath of residency will result in disciplinary action. A student must have lived in the state of Texas for 12 months prior to registration to be considered a Texas resident.

Resident status for the purpose of determining tuition at state institutions of higher learning is governed by Vernon's Texas Civil Statutes, Article 2654C. It is interpreted according to the guidelines adopted by the 61st Texas Legislature in 1969 and by the Texas Higher Education Coordinating Board. These guidelines will prevail in all cases of residence determination. They are available for review in the Office of Admissions and Records.

Students who are from out of state and are defined by Texas Statutes as "non-residents" must pay non-resident registration fees.

Citizens of any country other than the United States are considered under these same statutes. Specific guidelines are followed in determining residency status for Indo-Chinese refugee students. These guidelines are also available in the Office of Admissions and Records.

Admission of Foreign Students

Foreign students will be considered for admission upon submission of:

1. Application for Admission, which includes the student statistical information and health services forms. This is recommended to be on file at least 90 days before enrollment to allow for processing the I-20 form and submitting the M-1 visa.
2. Report of scores from the Campus Placement Test.
3. Immunization records.
4. Complete transcript of secondary or college work. The transcript must be an English translation.

5. Scores of the Test of English as a Second Language (TOEFL). Minimum acceptable score is 500. Additional information concerning the TOEFL may be obtained by writing to TOEFL, P.O. Box 899, Princeton, New Jersey 08504.

6. Affidavit of support guaranteeing the student's ability to pay expenses and a statement from a bank or reliable institution documenting availability of funds. This form (affidavit) must have attached to it a conversion of monetary equivalencies in American dollars and cents, and it must be notarized on their country's equivalent of a notary public who should sign and stamp, or impress their seal.

Upon successful completion of these documents, the I-20 form will be processed and mailed to the applicant with the acceptance letter. The applicant must take the I-20 form, acceptance letter and affidavit of support to the nearest United States Embassy to obtain the M-1 student visa.

Foreign students must also abide by the following regulations:

1. The foreign student must carry medical and hospitalization insurance.
2. The foreign student is not eligible for financial aid or employment privileges.
3. The foreign student must be enrolled on a full-time basis and maintain satisfactory progress as defined under the Scholastic Regulations section of this catalog.
4. All foreign students must comply with TSTC regulations and all other laws governing United States citizens.
5. A copy of the I-94 must be on file.

Failure to comply with any of these regulations may result in termination from TSTC and deportation.

Special Note: All forms and documents required must be official documents with all necessary signatures and seals. Documents may be copies only where there are original signatures and seals. Copies of documents with copied signatures and seals will not be accepted.

Retention of Application Records

Credentials of applicants who do not register for the term indicated on the application for admission are normally retained in the Office of Admissions and Records for six months from the date of application. At the end of this time, credentials on file are discarded unless the applicant has notified the Office of Admissions and Records of continued interest in attending TSTC.

Credentials submitted to the Office of Admissions and Records become the property of TSTC and are not returned to the student or duplicated for any purpose.

Credit By Examination

Comprehensive examinations for course credit may be authorized by the appropriate department when the student appears capable of meeting course objectives due to previous training or experience and when appropriate fees are paid. The student who makes a satisfactory grade on an exam will receive the grade of "CR" (Credit) and will not be required to formally enroll in the course.

Credit for the course will be counted toward graduation, but grade points will not be assigned or included in calculating the student's grade point average.

Credit by examination will be offered by the appropriate department ~~prior to registration each quarter~~. A student cannot receive credit by examination for a course in which a letter grade of "F" was previously received.

Credit For Industrial Experience

Course credit may be given for applicable and properly validated industrial experience, subject to evaluation and approval by the program chairman and the Director of Admissions.

Credit is provisional and may be canceled if the student's work at TSTC is unsatisfactory.

Credit By Articulation

Some secondary schools have signed agreements with TSTC through which credit by articulation may be granted. This program allows

students to receive credit for successful completion of selected secondary courses. More information is available through the TSTC Coordinator of Articulation.

Military Service Training Courses

Course credit may be given for applicable and properly validated military service training, including military service schools and United States Armed Forces Institute (USAFI) courses. Credit is subject to evaluation and approval by the program chairman and the Director of Admissions.

Credit is provisional and may be canceled if the student's work at TSTC is unsatisfactory.

Student Records

A student may request copies of his or her records of TSTC coursework and activities from the Office of Admissions and Records. Copies of records from other institutions should be requested from the institution where the records were made.

Records furnished by the student for the purpose of admission or for recording supplemental work become part of the permanent student record file in the Office of Admissions and Records. These may not be reclaimed or duplicated.

Official transcripts as requested by a student or graduate are sent directly to the designated recipient (school, prospective employer, etc.). A graduate may obtain one official copy of his or her TSTC transcript without charge.

No official transcripts will be issued to the student; however, unofficial transcripts are available to all students at no charge. Official transcripts for non-graduates and additional copies for graduates cost \$2 each, payable in advance. Transcript fees may be billed to a credit card with a minimum of \$10.

The student or graduate must submit a written request for all transcript copies. No partial or incomplete records are processed, and minimum processing time is 24 hours. All coursework recorded is included as part of the record.

A student requesting copies of his or her transcript prior to the end of the current term of

enrollment and desiring that current work be included must clearly state current work as part of the transcript request. Such requests are delayed until grade reports are available after the end of the quarter.

No transcript will be issued until the student has settled all financial obligations to TSTC. Students who have not complied with all entrance requirements will not be provided with transcripts.

All student records are considered confidential and private. Staff members may review student records in an effort to aid the general well-being of the student in the presence of the professional in charge of such records.

Information in student records will not be released to anyone outside TSTC without the consent of the student; however, there are certain exceptions to this rule, which are specified in the Family Educational Rights and Privacy Act of 1974.

Family Educational Rights and Privacy Act of 1974

This act, contained in Public Law 93-380 of the Educational Amendments of 1974, is designed to protect the rights and privacy of students.

Official records are not open to the public and will not be divulged without the consent of the student. Minors attending TSTC have the same rights to privacy of their records as adult students.

If a student is a legal dependent of parents or guardians, the parents or guardians then also have the rights to access the records of their dependents.

The Buckley Amendment provides that certain directory-type information on all students may be made public. An individual student must state in writing within the first 12 class days to the Office of Admissions and Records if he or she does not wish that information to be released.

Such directory-type information may include, but is not limited to, name, address, telephone number, date and place of birth, major participation in activities, dates of attendance and degrees and awards received.

It is the policy of TSTC to not use the photograph or signature of any student for publication purposes when the student expressly requests that the photograph or signature not be used. The student is responsible for notifying TSTC by

completing the appropriate form at the Office of Admissions and Records.

The student must also notify the Office of Admissions and Records in writing if he or she does not wish for video or audio recordings of himself or herself to be used on or off campus.

Further information is available in the Student Information Package or the Office of Admissions and Records.

Withdrawing From TSTC

To withdraw from TSTC, the student must drop courses before the 10th week of the quarter, as determined by the System's schedule. After the student enrolls, the student officially remains enrolled until proper withdrawal procedures are completed. The effective date of withdrawal is the day on which the student completes and returns the withdrawal form to the Office of Admissions and Records.

Enrollment in courses may be terminated in two ways:

1. The student may drop a course by obtaining and completing a Course Schedule Change Form (Add/Drop) from the Office of Admissions and Records. Further assistance may be obtained from that office.
2. TSTC may drop a student from a course for reasons specified in the rules of the college but only through specified and approved procedures.

The effective date for termination of enrollment in matters related to records or refunds shall be the date that the withdrawal form is received by the Admissions Office, regardless of the last day of class attendance.

When a student withdraws, all library books and laboratory equipment must be returned and all financial obligations settled. Students are responsible for ensuring that checkout records in the library and in the instructional programs are clear in every respect.

Report of Grades

TSTC will send grades to the student's designated address. If a student's grades are to be sent to parents, it is the student's responsibility to give TSTC that information during registration. Address changes should be reported to the Office of Admissions and Records and updated at each

registration.

It is suggested that students and parents have a clearly understood agreement about this authorization prior to enrollment.

Change Of Grade

After the instructional programs report grades to the Director of Admissions, grades other than "IP" (In Progress) will not be changed unless an error has been made by the instructor of the course. Grade changes must be made on a "Change of Grade Form."

Scholastic Regulations



Texas State
Technical College

Scholastic Regulations

Length of Class Periods

The school year consists of four 12-week quarters. Classes are conducted for 50-minute periods with an allowance of 10 minutes for travel between classes.

Course Load

Normally, students in good standing will register for course loads equivalent to those specified for the program of study. The student may register for less than a normal load, but must register for a minimum of 12 credits to be considered a full-time student, nine credits for three-quarter time, six credits for half-time and three credits for quarter-time.

A student may register for up to 20 credits maximum with the approval of his or her faculty advisor. Enrollment for more than 20 credits requires approval from the student's program chairman.

Attendance Policy

It is the policy of TSTC that responsibility for class attendance rests with the student. Regular and punctual attendance at all classes is expected, and TSTC reserves the right to deal at any time with individual cases of non-attendance.

An absence is assessed each time a student is not in attendance during a regularly scheduled period of instruction, whether it be a theory or laboratory class. In each quarter, assessment of absences begins the first day of scheduled classes.

The course instructor determines whether an absence is excused or unexcused. An excused absence is defined as one due to illness or an emergency situation beyond the student's control. A satisfactory written explanation from an appropriate authority should be given to the instructor. An absence for any other reason is considered unexcused.

The student may be allowed to make up examinations or class assignments missed due to absence when either:

1. The student has made specific prior arrangements with the instructor, or
2. The absence was due to an illness or emer-

gency and has been excused by the instructor.

It is the responsibility of the student, not the instructor, to arrange for make-up work as soon as possible.

A student is considered to be excessively absent from a course when:

1. He or she is absent from three consecutive periods of instruction after the date enrolled.
2. Total accumulated absences equal the number of periods of instruction scheduled in two calendar weeks.
3. In the judgment of the instructor, the student is not making satisfactory progress due to absence from class and it is not feasible for the student to make up the missed work.

Students who become excessively absent will be placed on attendance probation. This action is initiated by the course instructor, who forwards an excessive absence report to the student's academic advisor.

The student must meet with his/her academic advisor, and both student and advisor must sign an Agreement to Reenter Class before the student may continue in the class.

The instructor will forward a Notice of Excessive Absence Drop to the Admissions and Records Office (or to the office of the Dean of Instructional Services) under the following circumstances:

1. If the advisor cannot locate the student within three days, the student will be permanently dropped from the class.
2. If the student meets with the advisor and does not accept the terms for reentry into class, the student will be permanently dropped from class.
3. If additional attendance problems occur after the student and advisor sign the Agreement to Reenter Class, the student will be permanently dropped from the class.

If a student is in remediation to comply with TASP requirements, the Dean of Instructional Services must approve a permanent excessive absence drop form class before the drop will be processed.

Upon receipt of the Notice of Excessive Absence Drop from the instructor (or from the Dean, for a remedial class), the Admissions and Records

Office will remove the student's name from the class roster and the excessive absence drop information will be placed in the student's scholastic record. The effective date of the Excessive Absence Drop Notice will be the date the notice is received in the Admissions and Records Office.

The student has five days after the effective date of the permanent excessive absence drop to request an appeal hearing before a committee. This action is initiated by contacting the Office of Student Services.

It is the policy of TSTC to grant an excused absence from class attendance to a student for the observance of a religious holy day when all procedures for making the request for an excused absence have been met by the student. Failure to comply with all assignments scheduled during the time of absence shall be subject to rules for grading of the program, course and instructor.

Grading System

The grading system represents varying degrees of performance and consists of the following letter grades and significance:

Letter Grade	Interpretation	Grade Points Per Hr.
A	Excellent or superior work	4
B	Above required performance	3
C	Minimal required performance	2
D	Below required performance	1
F	Failure to meet required performance	0
IP	In progress	*
W	Withdrew	*
CR	Credit	*
Audit	Audit	*

* Not calculated in Grade Point Average.

All credit hours shown reflect quarter credit hours. However, all academic courses listed with the following prefixes have been taken from the approved Texas Higher Education Coordinating Board's Common Course Manual and are equivalent to three semester credit hours each: ARTS, BIOL, ECON, CHEM, ENGL, MATH, PHYS and SOCI.

This grading system applies to all programs with the exception of Medical Information Specialist/Transcriptionist, Surgical Technician and Nurse Assistant. For these programs, the following grading scale is used:

93-100	A
86-92	B
78-85	C
70-77	D
0-69	F

Students must receive a letter grade of "C" or better in each major program of study course.

A temporary grade of "IP" may be given and indicates a student has satisfactorily completed a course with the exception of a major quiz, final examination or other work. This grade will be given only when the deficiency is due to authorized absence or other cause beyond the control of the student and when the quality or work completed has been acceptable for satisfactory completion of the course.

A student must complete work to remove an "IP" prior to the end of the next quarter. If the "IP" gradework has not been completed by the end of the next quarter, the "IP" will be changed to an "F" grade by the Office of Admissions and Records, and the course must be repeated to receive credit. The grade of "IP" may be changed to a grade other than "F" only by written authorization of the instructor to the Director of Admissions and Records. Students must repeat a course in which a letter grade of "F" was received.

Grade Point Average

The term grade point average is computed by dividing the number of credit hours for which grades were received into the total grade points earned in that quarter.

The cumulative grade point average is calculated using all grades and grade points earned since entering TSTC. All courses attempted will be shown on the official transcript. However, if a course is repeated, only the last grade will count in determination of the graduation grade point average.

Grades of "IP," "W" and "CR" will not count in determining grade point averages.

Student In Good Standing

A student is considered by TSTC to be in good scholastic standing and to be making satisfactory progress toward completion of a Certificate or Associate Degree program until his or her cumulative grade point average falls below 2.0 for two consecutive terms in a program.

Scholastic Honors

Students with cumulative grade point averages

of 4.0 will graduate with the honor of appearing on the Board of Regents Honor Roll.

Grade point averages will be calculated on all course work attempted toward graduation requirements in a specific option or program.

Scholastic Deficiency

A student is considered to be scholastically deficient in a program when his or her cumulative grade point average in that program is less than 2.0 on a maximum 4.0 system. The student may receive permission to continue enrollment in that program only under the terms of scholastic probation.

Scholastic Probation

A student who becomes scholastically deficient in a program and is permitted to re-enroll in that program is considered to be on scholastic probation. The student is removed from probation when his or her cumulative grade point average is 2.0 or higher.

If a student is enrolled under scholastic probation and does not meet the terms of probation or is earning a term grade point average of less than 2.0, he or she will not be allowed continued enrollment in that program. After counseling with career guidance staff, the student may be permitted to enroll in a new program.

Scholastic Suspension

If a student on scholastic probation does not maintain a term grade point average of 2.0 or higher or does not meet the conditions of probation, he or she will be scholastically suspended from TSTC.

Readmission and Re-enrollment

Any student who is scholastically suspended from a program will be permitted to reapply for admission after one term of scholastic suspension. Re-enrollment in a program will be permitted after career counseling.

Failure by the student to maintain a cumulative grade point average of 2.0 or higher after readmission and re-enrollment will result in scholastic suspension from TSTC.

Readmission Procedures

Former students desiring to reapply for admission to TSTC after a lapse of one term or more should write to the Director of Admissions and Records at least 30 days prior to the beginning of the term in question. If the student has attended any other institute during his or her absence from TSTC, an official transcript reflecting such attendance must be submitted.

Course Substitutions and Rearrangements

Substitutions for courses as outlined in this catalog for the various technical and skill programs of study may be allowed only within certain limits.

In all cases, a course substitution must be approved jointly by the Dean of Instruction, the Admissions Office and the major program chairman. Each case will be decided on an individual merit basis; therefore, no condition automatically guarantees that course substitutions will be officially approved. No student will be certified for graduation unless he or she has completed all courses outlined in the official course plan or has an approved course substitution authorization in his or her file. Completion of courses includes actual completion, credit by examination or transfer credit.

It is the student's responsibility to keep track of his or her progress toward completing all required courses.

Repetition of a Course

If a student repeats a course, that course may not be counted for additional credit. It is the policy of TSTC to count only the last grade received in a course, whether passing or failing, as part of a student's cumulative grade point average. However, the transcript will include all courses taken by the student while at TSTC.

After repeating a course, the student is responsible for filing a special request form in the Office of Admissions and Records so that the adjustment in the grade point average can be entered on the permanent record.

Courses in which a grade of "B" or higher is received will not be repeated. Any course

repeated in which a student has already earned a "B" will not count toward the course load status determination of that student.

Elective Courses

Electives for course credit must have the approval of the student's program chairman. Only one elective course from the approved list will be offered for each program of study per quarter.

Transfer From Major Program

A student may transfer from one program to another by securing the approval of the program chairmen concerned. The Office of Admissions and Records must be notified in writing by the program chairman of the program to which the student is transferring.

At the time of transfer, the chairman of the receiving program of study will verify the student has met program entrance requirements and indicate on the student's record those courses that are accepted toward completion of the new program of study.

A student who is on scholastic probation or has been suspended from the major program may transfer to another program. The grade point average will be treated as a first-quarter situation. However, the student must make a 2.0 grade point average or be suspended from the new program of study.

Adding or Dropping a Course

All adding and dropping of courses is initiated by the student. The student must submit an add/drop form to the Office of Admissions and Records before the ninth class day. The student should consult the responsible program chairman before adding or dropping a course.

These rules also apply:

1. No course may be added after the ninth day.
2. No grade will be issued for a course dropped on or before the ninth day.
3. The grade of "W" will be issued to the student dropping a course after the

ninth class day and through the beginning of the 10th week, as determined by the System's schedule.

4. Appropriate grades will be issued for courses dropped during or after the 10th week of any quarter. Grades of "IP," "W" and "CR" will not be issued after the 10th week.

Discontinued Programs and Courses

TSTC reserves the right, when necessary to discontinue courses or programs of study and otherwise alter the class schedule. If a class or program is discontinued, students will be notified as soon as possible so they may register for another course. No penalties for late registration apply in such cases.

Prerequisites

A student requesting that prerequisites to a course be waived must obtain written approval from the chairman of the program offering the course. The written approval must be filed in the Office of Admissions and Records before the student will be allowed to register.

Auditing a Course

A student may audit (visit) a course only with permission from the Office of Admissions and Records and from the course instructor. Audited courses will be considered in determining credit hour fees. A student can not establish credit for a course by special examination after auditing the course. Attending or doing work for a course in which a person is not properly registered is prohibited.

Graduation Requirements

Requirements for graduation include:

1. Completion of one of the regular programs leading to an associate degree or certificate as specified by the Texas Higher Education Coordinating Board.

Minimum cumulative grade point average is 2.0, with no grade less than "C" unless otherwise stated for a specific program.

2. Settlement of all financial obligations to the school. Procedures are the same as for withdrawal from TSTC.
3. Completion of the Texas Academic Skills Program.
4. Completion of an Application for Graduation at the time of registration for the student's last quarter.
5. Purchase of cap and gown at the TSTC Bookstore.

Additional Certificates and Degrees

A student may obtain additional certificates or associate degrees as a graduate of other programs or options within his or her program by completing all of the courses within the option or program of study.

Required courses that have been previously completed need not be retaken. However, elective courses may not be counted more than once in satisfaction of course requirements in any program of study or option.

Note: Students may not receive a Certificate and a Degree in the same quarter.

Student Services & Activities



Texas State
Technical College

Student Services and Activities

Student Services Division

The objectives of the Student Services Division are to:

Provide for the physical, emotional, social, cultural and spiritual needs of the students.

Provide counseling and guidance services in educational, financial, personal and career areas.

Provide assistance for students in preparation of the assumption of adult responsibilities.

Provide activities for the student body to interrelate with staff members outside the classroom.

A full-range of student services are available on the Harlingen campus.

Students at the college are involved in the institutional decision-making process by serving on the Student Services Council, Advisory Committees, Curriculum Committee, Discipline Committee, Publication Committee, Financial Committee, Library Committee and many more. Students also participate in evaluation of instruction.

Student Policies

A Student Information Package produced by the Student Services Office is the official procedure book for the College students. Each student is expected to acquire a copy of the guide through the Student Services Division and is responsible for following policies outlined in it.

Student Recreation Center

The Student Recreation Center, adjacent to Building I, is open to students for a variety of activities.

Facilities include a game room, television room and Student Congress- Student Life Office. Activities available at the Recreation Center include billiards, table tennis and foosball.

Bookstore

Student supplies are available at the the College Bookstore, located in the Student Center. The store handles books, clothing, sundries, school supplies, drafting equipment and shop tools. All

study equipment is approved for student use before being stocked.

The bookstore accepts personal checks for the amount of purchase only. All checks must include the student's Social Security number and program of study. Two-party checks are not accepted.

Sales at the bookstore are on a cash basis only. Exceptions may be made for students sponsored by certain state and federal government agencies, where payment is made directly from the agency to the College.

Full refunds for textbooks will be made during the first 12 days of the quarter. No refunds will be made for tools, supplies or notions.

Used textbooks will be bought back only during final exam week. No buy-backs are accepted after registration begins. The bookstore will buy back current textbooks for half of the purchase price. Workbooks are not repurchased.

Identification Cards

All students are required to purchase identification cards at the time of registration. Students should carry the cards at all times because they must be presented when cashing checks, paying fees and checking out library books.

A fee will be required for all duplicate cards. Misuse of identification cards may result in disciplinary action.

Student Government

The Student Congress is the student governing body of the College. It represents the students and advises the College administration on items of student concern.

The Congress has the responsibility to investigate conditions or circumstances involving student activities or individuals students which may not appear to be in the best interests of the student body.

In addition to the legislative body, the Student Congress has an Executive Committee and a Judicial Department. It may also appoint ad hoc committees as needed for special purposes.

More information on the Student Congress is available through the Student Life Office.

Clubs and Professional Societies

Students are encouraged to organize clubs with the help and guidance of a faculty advisor. The clubs can be related to professional fields, interests or hobbies. All organizations must be approved annually by the Dean of Students.

Social Activities

Social life at the College is both rewarding and beneficial. A number of social activities are scheduled on and off campus throughout the year.

Techsan Day is an annual festivity that is the only campus-wide, fund-raising event for clubs and organizations. Students participate in various games of skill and fun, such as jalapeno eating, tug-of-war and volleyball.

Campus clubs and organizations frequently host parties, dances and other events. All social functions held in conjunction with an approved club or organization, whether held on or off campus, must comply with the College policies and have prior approval of the Dean of Students.

Intramural and Recreational Sports

The Intramural Recreational Sports Department sponsors a variety of team and individual sports. This exposure and involvement in healthful activities are designed to promote friendship and develop lifetime sport skills that will be beneficial to participating students. More information is available through the Supervisor of Intramurals and Student Publications.

Student Publications

Students interested in writing, photography and journalistic projects are encouraged to become involved with the the College yearbook and the student newspaper. More information is available through the Supervisor of Intramurals and Student Publications.

Student Health Services

A nurse is on duty during class hours to provide medical services to students when needed.

During other times, first aid assistance is available through Campus Security.

Hospitalization or physician's services are not provided. However, students needing these services will be assisted in obtaining them.

The Texas Immunization Law requires that all non-resident and foreign students must be immunized or must have begun immunization against polio, diphtheria and tetanus before entering the College. Scheduled "clinics" for all students in need of vaccinations will be posted annually.

Religious Activities

There are several churches of various denominations near the campus which serve the spiritual needs of the students. More information on religious activities and organizations is available through the Director of Student Life.

Student Mail

Campus housing residents receive mail through the College post office. Mail box numbers are allotted when room assignments are made.

Mail should be addressed:

Student's Name

TSTC-Harlingen

610 Dogwood

Student Housing Apt. Number

Harlingen, Texas 78550-3697.

Student Insurance

In spite of the College's strict safety precautions, there are certain risks involved in working with mechanical and electrical equipment. Therefore, it is recommended that students have accidental insurance coverage.

More information on the student accident insurance offered at the College is available from the Student Life Office.

Testing and Counseling

Testing and counseling services are provided to assist students in obtaining maximum results from educational opportunities. Students must take the Campus Placement Test upon being accepted for admission. Additional testing may be administered at the request of the student or advisor.

Professional counselors are available to discuss personal, social, educational and career concerns with students.

Each entering student is introduced to the College's policies and procedures to help him/her adjust to the new educational environment. This introduction also helps students face challenges that may confront them in preparing for employment.

The Texas State Education Code requires that all students who enter public institutions of higher education must be tested for reading, writing and mathematics skills. The principal evaluation tool of the program is the TASP test, a basic skills examination administered several times a year.

Although the TASP test can not be used as an admission requirement, it must be taken by all degree students before reaching nine college semester credit hours. Those failing any of the test's three sections (reading, writing, mathematics) must take appropriate remedial course work until they pass all sections of the TASP test. Students may continue their major course work while enrolled in remedial courses and may retake failed TASP sections at any scheduled administration of the test. However, students can not graduate from the Associate Degree program until they have passed all three TASP sections.

The TASP Test Registration Bulletin is available in the Counseling Office. Students registering for the test are required to pay a fee of \$26.

The Pre-TASP test serves as the Campus Placement Test. It is administered and scored by qualified college personnel on Tuesdays at 6 pm, Wednesdays at 1 pm and Fridays at 8:30 am.

The Dental Laboratory Technician's Test is offered by appointment for students enrolling in the Dental Laboratory Technology program.

All testing dates and times should be confirmed through the counselors.

Tutorial Services

The Tutoring Center assists students who need help in their studies. A full-time professional staff member and peer tutors are available to assist in mathematics, reading and English. Peer tutors, who are selected from the top academic students in their respective programs, are available in technical areas including computer programming, drafting, electronics, medical records and automated office skills.

Students may take advantage of tutorial services through instructor referrals, by dropping in when

they need special assistance or on a regular schedule.

Special Support Services

The Special Support Services program reflects the College's commitment to meeting the special needs of individual students. Through this program, the College provides assistance to students who are single parents, educationally disadvantaged, handicapped, enrolled in non-traditional programs or have limited English proficiency. Some of the agencies that work with the College and its students through this program are the Texas Rehabilitation Commission, Texas Department of Human Resources, Commission for the Blind, Private Industry Councils, Family Crisis Center, Motivation, Education and Training Inc. and Su Clinica Familiar.

The Special Support Services program also sponsors day-care services for full-time students who are parents of young children. Parents who meet requirements receive subsidized day-care services at area day-care centers.

Library

The College Library is designed to help students find the latest information in their courses of study. Library materials offer the student the means to independently pursue ideas and answers or to examine different aspects of subjects already discussed in the classroom.

Most of the 16,000 volumes in the Harlingen campus library relate directly to courses taught at the College. The library currently subscribes to more than 400 magazines and newspapers and has over 100 magazine titles on file in bound volumes and on microfiche. It also has cassette tapes, filmstrips and other audio visual materials in addition to adding machines, drafting tables and typewriters.

A trained staff of professional librarians is available at all times to aid students in locating and using library materials.

Placement Office

The Placement Office assists faculty members, who have the primary responsibility for placement, in locating employment for College gradu-

ates. This is accomplished through a variety of activities, such as scheduling on-campus interview sessions and special "career fairs" for employers. The staff also coordinates communication between industry and the College and helps students find part-time employment while still in school.

The College places high priority on finding jobs for graduating students. The philosophy of the College is that its job is not complete when the student completes his or her studies, but continues through assistance in securing employment. Follow-up studies are conducted to determine the effectiveness of training and placement.

The Placement Office is committed to a policy of equal opportunity in employment and does not discriminate on the grounds of race, color, creed, religion, national origin, sex, age or handicap. Facilities and placement services are available only to employers whose practices are consistent with this policy.

Office of Veterans Affairs

The Office of Veterans Affairs assists eligible veterans and their dependents or survivors in obtaining educational benefits. Through this office, the veteran can gain assistance in dealing with any problem associated with the College, registration and Veterans Administration procedures. The Veterans Office is a division of the Financial Aid Office. More information is included in the Financial Assistance section of this publication.

Student Conduct

Every student is expected to maintain absolute integrity in all scholastic work. Any attempt on the part of the student to receive credit for work other than his or her own, whether by cheating, plagiarizing or through collusion, will be the basis for disciplinary action. An accessory to any act of cheating shares the guilt with the principal and is dealt with in a similar manner.

The College forbids the consumption or possession of alcoholic beverages on the campus at any function sponsored by a campus organization. Insubordination, willful disobedience, gambling or misconduct due to drinking or other causes, either on or off campus, will result in disciplinary action or dismissal of the student or students involved.

The College absolutely prohibits the unlawful manufacture, distribution, use, dispensation or possession of a controlled substance on the College property, or while participating in a the College activity off the premises.

The College reserves the right to require the withdrawal of any student at any time if the student's actions are deemed to be contrary to the best interest of the student body or the College. Students are expected to follow ordinary rules of propriety and decorum at all times.

Readmission of dismissed students will be permitted only when the College is convinced that such action will be to the mutual interest of the student and the College.

Student Fees



Texas State
Technical College

Student Fees

This section contains a schedule of estimated fees. All fees are subject to change without notice to meet legislative or economic requirements. All fees may be charged to a credit card with a minimum of \$10.00.

Tuition

Resident of Texas: \$14.00 per credit hour with a minimum of \$70.00. No additional tuition will be charged for adding courses that do not exceed a total of five credit hours per quarter.

Non-resident of Texas: \$80.00 per credit hour.

Resident of Arkansas, Oklahoma or New Mexico: \$16.50 per credit hour with a minimum of \$70.00

Resident of Louisiana: \$14.00 per credit hour with a minimum of \$70.00.

To compute tuition, the number of credit hours taken is multiplied by \$14.00 for Texas residents and by \$80.00 for non-residents. Information on determining resident and non-resident status is included in the Admissions and Records section of this catalog.

Student Service Fee

\$4.80 per credit hour.

To compute the student service fee, the number of credit hours taken is multiplied by \$4.80. There is a \$100.00 maximum charge.

Building Use Fee

\$4.50 per credit hour. To compute the building use fee, the number of credit hours taken is multiplied by \$4.50. There is no maximum charge.

Student Union Fee

\$1.00 per credit hour up to 15 hours. To compute the student union fee, the number of credit hours taken is multiplied by \$1.00. There is a \$15.00 maximum charge.

Equipment Usage Fee

\$2.00 per credit hour for classes with labs. To

compute the equipment usage fee, determine the number of credit hours for classes with labs, then multiply the amount by \$2.00. There is no maximum charge.

Identification Card

\$2.00 per quarter. Replacement ID is \$2.00 per quarter.

Parking

Full-time permit: \$5.00 per quarter.

Night permit: \$2.50 per quarter.

Additional permit: \$1.00 per quarter.

These fees cover all motor vehicles, including motorcycles. All vehicles operated on campus must be registered in the Office of Campus Security as part of the registration procedure or within 48 hours of arrival on campus.

Vehicles must be operated in compliance with published regulations, which are available during registration and at the Campus Security Office.

Campus Housing

Married Student Housing

A student who is accompanied by his or her legal spouse and/or dependent children may live in married student apartments. Monthly rates for married student apartments are:

One-bedroom: \$230 per month.

Two-bedroom: \$242 per month.

Three-bedroom: \$259 per month.

Monthly payments are due in advance, on or before the first day of each month.

A married student who is not accompanied by spouse or dependent children must live in single student apartments. Family dorm occupants are required to show proof of marriage.

Single Student Housing

All single students and unaccompanied married students must live in single student apartments. The College offers three types of housing for single students:

Two-bedroom, air-conditioned apartment with full kitchen; for four students: \$390 per quarter.

Efficiency, air-conditioned dorm with kitchenette; for two students: \$425 per quarter.

Efficiency, air-conditioned dorm with microwave and refrigerator; for two students: \$425 per quarter.

Costs are per student, payable in advance each quarter unless the student is on the installment plan. All apartments are furnished, but students must provide linens and cooking utensils.

Meal Plan

Students have three options for obtaining their meals. The student may:

1. Participate in the board plan for the entire quarter. There are two types of meal plans available at the College Cafeteria: two meals a day (10-meal plan) or three meals a day (15-meal plan) each weekday when classes are in session.

10-Meal Plan (10 meals/week)	\$395.00
Tax	\$32.58
Total	\$427.58
15-Meal Plan (15 meals/week)	\$435.00
Tax	\$35.88
Total	\$470.88

2. Pay cash at the College Cafeteria.

3. Cook meals in the on-campus apartment kitchen.

Students who do not live in campus housing may also purchase one of the two meal plans available and eat in the College Cafeteria.

Serving Hours: Breakfast 7 am - 10:45 am
Lunch 11 am - 2 pm
Dinner 4:30 pm - 6 pm

10-meal plan = breakfast and lunch only

15-meal plan = breakfast, lunch and dinner

You must have your meal card. **NO CARD-NO MEAL.** Meals furnished under this contract are not transferable from one person to another, nor will credit (extra meal) be given for meals misused by the participant.

Student Malpractice Insurance

Students enrolled in allied health programs are required to pay for malpractice insurance. Contact the Program Chairman or Business Office for more information and pricing.

Specialist Certification Fee

Students who choose an Early Exit option in their program of study must pay a \$5.00 Specialist Certification fee.

Graduation Fee

The graduating student pays a \$20.00 fee during his or her final quarter. The fee does not include the cost of cap and gown purchase.

Transcript Fee

\$2.00 per copy. The first copy is free to graduates.

Credit By Examination

\$14.00 per credit hour to be paid in advance of the scheduled examination.

Pre-TASP Fee

\$3.00 to be paid in advance of the scheduled examination.

Installment Payment Plans

One type of installment plan is available for payment of tuition and fees.

1. Payment in three installments: 50 percent of the charges plus a \$10.00 processing fee will be due. The remaining charges will be divided into two equal payments. The first of these payments will be due prior to the fifth class week. The final payment will be due prior to the ninth week.

A student who elects to pay in installments will:

1. Be responsible for making payments on or before the due dates established at the time of registration.
2. Be unable to obtain official copies of his or her student records until the debt is paid in full.
3. Be responsible for payment of the remaining balance due upon withdrawal from the College.
4. Run the risk of either being dropped or barred from attending classes until the debt is

- paid or acceptable arrangements are made with the Business Office in securing payment.
5. Pay a \$10.00 fee per quarter.
 6. Pay late fee of \$2.50 per day for payments made after the installment due date.

Duplicate Statements

Duplicate statements are available at a cost of \$2.00 per copy.

Bookstore

The Bookstore provides required textbooks, tools, software and supplies, as well as a variety of notions and graduations announcements, gowns and rings.

Hours of operation are normally Monday through Thursday, 7:45 a.m. to 5:30 p.m. and Friday, 7:45 a.m. to 1:00 p.m. During peak periods, hours are extended into the evening and on Saturdays. Fliers are posted on campus listing dates and hours the Bookstore will open.

The Bookstore accepts cash, Master Card or VISA charge cards, personal checks (for the amount of purchase), or students may charge their bookstore purchases to their financial aid accounts.

Textbooks can be re-sold to the bookstore at the end of each quarter during established "buy-back" days. The purchase price of the textbooks is determined by a wholesale buyer depending on the demand for that particular text. The best purchase price is 50 percent of the current list price (regardless of whether you bought the book new or used). Books with filled-in pages, study guides and workbooks can not be re-sold to the Bookstore.

Full refunds for textbooks can be requested during the first nine class days of the quarter with appropriate proof of purchase, and if the text(s) are in their original condition. After the first nine class days, texts may be returned at 50 percent of the purchase price with appropriate proof of purchase.

Tools, supplies and notions are non-refundable. Only defective items may be refunded if returned within two weeks and accompanied by proof of purchase.

Refunds

A student who withdraws from the College becomes eligible for a refund based on the date the withdrawal (add/drop) form is completed and returned to the Admissions Office as specified in the withdrawal procedure in the Admissions section of this catalog. The amount of the refund is determined by the date the withdrawal form is returned to the Admissions Office, and not by the last day of attendance.

The College charges mandatory and non-mandatory fees. Mandatory fees include tuition, student service, building use, equipment usage, I.D. card and student union fees. With the exception of the I.D. card, these fees are refundable depending on whether a student drops a class or withdraws from the College as indicated below. Non-mandatory fees include parking, insurance, housing and meal plan fees. The housing and meal fee refunds are pro-rated based on the date of withdrawal. Parking and insurance fees are non-refundable. Students requesting a refund of housing and meal plan fees should notify the student receivable office as soon as possible.

Students who drop a course but remain enrolled in the college may be eligible for a refund only if the course is dropped within the first nine days of the quarter (or within the first four days of a six-week summer course) and if the student's course load does not drop below the minimum fee requirements.

Students who withdraw from the College may be eligible for a refund as follows:

	12-week term	6-week term
Prior to the first class day	100%	100%
First class day	80%	80%
Second class day	80%	80%
Third class day	80%	80%
Fourth class day	80%	50%
Fifth class day	80%	50%
Sixth class day	70%	50%
Seventh class day	70%	0%
Eighth class day	70%	0%
Ninth class day	70%	0%
Tenth class day	70%	0%
11th-15th class day	50%	0%
16th-20th class day	25%	0%
After 20th class day	0%	0%

A refund of non-refundable fees can be approved in cases where the student is not accepted by the college or when classes are cancelled. No other provisions are provided for refunding these fees.

The College reserves the right to withhold refunds in cases where the student is suspended

for disciplinary reasons. No refunds will be processed until sufficient time has elapsed for checks and money orders to clear banks.

Refunds are mailed within 10 days from receipt of the official withdrawal notice. Cash refunds are not permitted.

Financial Aid Refunds

Students who withdraw and have received Title IV aid in their first quarter will receive a refund based on pro-rata refund requirements from Federal guidelines. The day-by-day refund schedule percentages will be prepared quarterly based on that quarter's start date. This refund applies to all refundable tuition, student service fees and room/board fees. No refunds are given after sixty percent of the quarter has elapsed.

Refunds will be based on the "Effective Date" recorded on the withdrawal form submitted to the Office of Admissions. Proper withdrawal procedures must be followed to receive any refund.

Any money refunded will be returned to the appropriate Title IV program and not directly to the student.

Personal Check Policy

Customers may make payments with personal checks written for the exact amount of charges at the College locations, such as the bookstore, food service, etc. All checks must be made payable to Texas State Technical College and presented with a valid Texas driver's license and the College identification card.

Students and staff members may cash personal checks for a maximum of \$50 over the exact amount of charges at the College Cashier's Office.

Any student or staff member who presents a personal check to the College that is refused for payment by the bank will be charged a penalty of \$15.00, plus any bank service charges. The person will thereafter be required to pay all charges and fees by cash, money order or cashier's check, unless the check refusal is due to admitted error upon the part of the bank.

A student who does not redeem the check promptly after notification of its return will be subject to dismissal from the College, and reported to the district attorney's returned check department.

Campus Housing



Texas State
Technical College

Campus Housing

The college considers campus housing an added service for its students. Occupancy in student apartments is purely voluntary on a first-come, first-served basis. The facilities are conveniently located on campus within walking distance of classroom buildings, laboratories and recreation facilities.

Housing and cafeteria facilities are owned and operated by the college on a self-sustaining basis to offer its students room and board accommodations at lowest possible cost.

Housing Reservations

Because facilities are limited, the prospective student should complete a campus housing application as soon as possible, at least one quarter in advance of the expected enrollment date. The application must be completed and returned with a \$100 deposit to the Business Office. The deposit can be made by check or money order payable to Texas State Technical College.

The deposit must be paid before the student is placed on the housing waiting list. If the student decides not to enroll or live in campus housing, the deposit will be refunded. The deposit will be retained until the student properly clears/vacates housing. Family apartments do not require a deposit until the scheduled move-in date.

Housing Assignments

Returning students have priority in housing assignments. However, they must reserve their own rooms for future occupancy at least 30 days before the end of the current quarter.

Confirmation of housing reservations for available housing will be made in writing to each applicant. When capacity is reached, additional applicants will be notified in writing that rooms are not available.

The student may request a certain apartment and/or roommate, and all possible consideration will be given to each request. The College reserves the right to assign students to specific apartments.

Students must remain in the facilities assigned

to them unless permission for change is obtained from the Campus Housing Office. No change requests will be honored until 20 class days after the beginning of the quarter. Moving without permission may result in permanent dismissal from campus housing. The Housing Office reserves the right to move students to another dorm in order to conserve energy, for safety reasons, to conduct repairs or remodel and for other reasons that are in the best interest of the college.

Housing Regulations

Housing regulations are posted in the Housing Office. Tenants may move into their assigned apartments on the first day of registration only if advance rent and room deposits have been paid and the lease agreement assigned. The tenant will terminate the lease and must vacate the dorm if he/she ceases to be a TSTC student.

When the student properly vacates his or her assigned apartment, the unused portion of advance rent will be refunded following inspection by Housing Office staff and return of all room keys. However, no refunds will be made during the last 10 school days of the quarter.

A portion of the housing deposit will be withheld to defray costs of apartment repair or replacement of lost items where tenant liability is obvious. Remaining portions of the housing deposit will be withheld to defray cost of apartment rental due.

All policies are based on a 30-day month.

All rates are subject to change without notice due to economic conditions beyond the control of the College.

Housing Fees

Please see the Student Fees section of this catalog.

Financial Aid



Texas State
Technical College

Financial Aid

The Financial Aid Office offers a variety of financial assistance programs to help eligible students pay the cost of attending the College. The money provided through these programs can be in the form of a grant, part-time employment, loan, scholarship or a combination of any of these programs.

Grants are gifts of money. They do not have to be repaid.

Employment allows the student to work and earn money he or she needs while providing the opportunity to gain work experience.

Loans are borrowed money. They must be repaid with interest.

Scholarships are provided by various organizations to help qualified students with educational expenses. They do not have to be repaid.

Further information concerning financial assistance program eligibility and requirements is available at the College Financial Aid Office.

Federal Title IV programs are not available to foreign students. Federal Title IV programs include Pell Grants, Supplemental Educational Opportunity Grants, College Work-Study Program and Guaranteed Student Loans.

State programs available are the State College Workstudy Program, Texas Public Educational Grant, State Student Incentive Grant and the State Scholarship.

The Financial Aid Office is located in the student services building, also known as Building A.

Federal Pell Grant

The Pell Grant is an entitlement program that provides a federally funded grant for every student who applies and is eligible. It is a form of a gift and does not have to be repaid.

The student must be enrolled full-time to receive the maximum amount for which the student is eligible under the Pell Grant program. Part-time students will receive prorated amounts for three quarter-time or half-time enrollment.

A student who has earned a bachelor's degree is not eligible to receive a Pell Grant, SEOG or work-study.

Federal Supplemental Educational Opportunity Grant (SEOG)

The Supplemental Educational Opportunity Grant is also a form of gift aid and is used to supplement the Pell Grant for those students who demonstrate financial need above the amount of the Pell Grant. The amount of the SEOG will vary according to a student's financial need, the amount he or she is provided from other financial assistance programs and the amount of funds available in the SEOG program.

For the SEOG, priority is given to full-time students with low family contributions. If the student has a compelling reason for attending less than full-time but at least half-time, he or she may petition to be considered for the SEOG. Some SEOG funds are made available to part-time students who qualify.

State Appropriated Scholarship Fund

The State Appropriated Scholarship Fund is awarded in the same manner as the SEOG, with the provision that the recipient be a U.S. citizen and a resident of Texas. Funding is received from the State of Texas. The scholarship will be awarded to students making satisfactory progress.

Texas Public Educational Grant (TPEG)

The Texas Public Educational Grant is awarded to resident and non-resident students, including foreign students with financial need. Priority is given to full-time students.

Federal College Work-Study Program (CWSP)

The College Work-Study Program allows eligible students to work between their class schedules. The College considers the work performed under the CWSP to be a part of the whole technical-vocational training experience.

Good work habits established here can carry over to good work habits in industry. Therefore, continuing a CWSP job is not automatic, but depends on satisfactory work performance, acceptable scholastic standing at the College and enrollment status.

The amount of a CWSP award will vary according to the student's financial need, the amount he or she is provided from other financial assistance programs and the amount of funds available in the CWSP.

For the CWSP, priority consideration is given to full-time students. If the student has a compelling reason for attending less than full-time but at least half-time, he or she may petition to be considered for the CWSP. Limited funds will be available for part-time students who qualify.

Federal Stafford Student Loan

Federal Stafford Student Loans are low-interest loans that are available to eligible students to assist in meeting the cost of attending an approved educational institution. These loans may be funded through commercial financial institutions, banks, credit unions or the State of Texas. Loans through the state are administered through the Hinson-Hazelwood Student Loan Program.

The maximum amount an eligible student may borrow is \$2,625 per year. However, the amount of the loan may not exceed the student's educational costs minus the amounts of other financial aid received, Social Security benefits and the expected family contribution as determined by the Financial Aid Office.

Repayment of Stafford Loans will begin six months after the student ceases to be enrolled on at least a half-time basis. The interest rate is eight percent per year if the student is a new borrower. Minimum monthly payment will be \$50. The minimum monthly payment will increase as the cumulative amount borrowed increases.

The student must be enrolled at least half-time and be meeting satisfactory progress requirements to be eligible for a Federal Stafford Student Loan.

Detailed information concerning interest rate, repayment, insurance, origination fees and other information is included with the loan application.

Federal PLUS Loans and Federal Supplemental Loans for Students (SLS)

Federal PLUS Loans are given to parents who want to borrow money to help finance their child's education. Supplemental Loans are given to independent student borrowers. These loans are certified by the school and are provided through a lender such as a bank, credit union or savings and loan association.

PLUS and SLS loans have variable interest rates, which are adjusted each year. For the 1992-93 award year, the interest rate was 7.51 percent. The interest rate varies between 5 percent and 12 percent per annum.

If a student is an undergraduate, he or she must apply for a Federal Stafford Loan and a Federal Pell Grant before applying for a Federal SLS Loan. A student can not borrow more than the cost of education at the school minus any other financial aid received, borrowed or available.

Federal PLUS and SLS borrowers generally must begin repaying both principal and interest within 60 days after the last loan disbursement. Unlike Stafford Loans, there are no grace periods for PLUS and SLS Loans.

Scholarships

Each year, a number of individuals, organizations and companies provide scholarships that are available to students attending the College. The amount and criteria for these awards will vary. These scholarships are advertised when available, and eligible students may apply at that time. Information is available from the Financial Aid Office and from the Program Chairmen.

Valedictorial Scholarships

The valedictorian of each high school accredited by the Texas Education Agency receives a scholarship that may be applied at any state-supported college or university, including the College. The scholarship provides exemption from payment of tuition and fees for the first year after graduation from high school.

The recipient must remain in good standing for renewal of the award each year.

Rehabilitation Scholarships

The Texas Rehabilitation Commission offers payment of tuition and other services to students who have certain physical handicaps. The Vocational Rehabilitation Division must approve the vocational objectives selected by the student before funds are awarded.

Interested applicants should contact the nearest office of the Texas Rehabilitation Commission.

Veterans Educational Benefits

The College is approved for training veterans under the provisions of the various public laws commonly called the G.I. Bill. A veteran with entitlement may receive a monthly check varying in amount with his or her course load and number of dependents. He or she is responsible for payment of tuition and fees at the time of registration.

A spouse or child of a veteran may receive benefits under certain conditions.

Veterans or their families who think they may be eligible for benefits should contact their local Veterans Administration Office or the College Veterans Affairs Office, which is a division of the Financial Aid Office.

Students receiving V.A. educational benefits must adhere to different academic and scholastic regulations than the general student population. More information on these standards is available from the Veterans Affairs Office.

Emergency Loans

Limited funds are available through the Business Office for those students who have emergency financial need and are unable to obtain assistance from other sources. The loans are awarded based on availability of funds and must be repaid within 30 days of the date the money is issued. This money is not available for payment of tuition and fees.

Emergency Tuition and Fees Loans

A limited amount of funds is available through

the Business Office for students who are unable to pay for their tuition and mandatory registration fees and are unable to obtain assistance from other sources. Funds are lent to resident and non-resident students, including foreign students, on the basis of the order in which applications are received.

The loan amount, plus an interest rate of not more than five percent per year, must be repaid within 60 days.

Applying for Financial Aid

To apply for any kind of financial aid (Pell Grant, Supplemental Educational Opportunity Grant, Texas Public Educational Grant, College Work-Study or Student Loans):

1. Apply for admission to the College, using the application for admission.
2. Complete the application for Federal Student Aid. No fee is required.
3. The student will receive a Pell Grant Student Aid Report (SAR) approximately four to six weeks after mailing the FAFSA. The student must submit all copies of the SAR to the College Financial Aid Office immediately after receiving it, along with the Financial Assistance Supplemental Application.
4. A signed copy of the student's and/or the student's parents' income tax return for the preceding year (IRS 1040, 1040A or 1040 EZ) may be required by the College Financial Aid Office.
5. After the application is processed, an award letter will be sent to the student. The award letter lists the source of aid available. It needs to be signed by the student and returned to the Financial Aid Office.
6. No money will be released to the student until the student is officially enrolled.

Deadlines

In order to assure that any aid for which a student qualifies is available at registration, applications and all required documentation must be on file in the Financial Aid Office by:

April 30	Fall Registration
	Winter Registration
November 1	Spring Registration
	Summer Registration

These are priority dates. Students who miss

these dates will not necessarily lose aid for which they qualify; however, missing the dates does mean certain types of aid may not be available when a student registers for classes in a given quarter. Awards for late applications will be subject to availability of funds.

Requirements for Maintaining Financial Aid Satisfactory Progress

Enrollment Status

Students receiving assistance from any of the financial aid programs must be enrolled at least half-time (6 credit hours). Financial aid recipients who withdraw from the college or reduce hours by dropping a course may be required to repay financial aid received.

Students are required to be registered no later than the 9th class day each quarter in order to be eligible for assistance for that quarter.

Satisfactory Progress

Students receiving financial assistance through any federal or state program must meet satisfactory progress requirements. Generally, these requirements include a minimum term GPA of 2.0 and completion of 12 credit hours of new coursework each quarter. Detailed information regarding satisfactory progress is provided in the Student Information Packet.

College Transfer Credit and General Education



Texas State
Technical College

College Transfer Credit and General Education Courses

Academic Credit

Academic classes at Texas State Technical College are now transferable to public universities, colleges and many private institutions in Texas under the common course numbering system of the Texas Higher Education Coordinating Board. South Texas universities and colleges are included.

More Information

Anyone having any questions regarding transfer credit or special partnership agreements should contact the Curriculum Office or the Counseling Department.

General Education

Core Courses

The following is a list of the General Education core courses offered by TSTC:

Humanities & Fine Arts		Semester	Hrs.
ENGL-1301	Composition I		3
ENGL-1302	Composition II		3
ENGL-2314	Technical & Business Writing		3
ENGL-2315	Technical & Business Writing II		3
ENGL-2316	Business Report Writing		3
ENGL-2322	British Literature I		3
ENGL-2323	British Literature II		3
ENGL-2326	American Literature I		3
ENGL-2327	American Literature II		3
SPAN-1300	Spanish Conversation I		3
SPAN-1311	Language Practicum in Spanish		3
SPAN-1313	Beginning Spanish		3
SPAN-1314	Beginning Spanish II		3
SPAN-2311	Intermediate Spanish		3
SPAN-2312	Intermediate Spanish II		3
SPCH-1311	Introduction to Speech		3
SPCH-1318	Interpersonal Communication		3
SPCH-2333	Discussion & Small Group Communication		3

Social & Behavioral Sciences

ARTS-1303	Art History I	3
ARTS-1304	Art History II	3
ARTS-2343	Styles in Contemporary Art	3
ECON-2301	Principles of Economics-Macro	3
ECON-2302	Principles of Economics-Micro	3
GOVT-2301	American Government I	3
GOVT-2302	American Government II	3
HIST-1301	U.S. History to 1877	3
HIST-1302	U.S. History Since 1877	3
PSYC-2301	General Psychology	3
PSYC-2315	Psych. of Human Adjustment	3
PSYC-2314	Lifespan Growth & Devel.	3
SOCI-1301	Introduction to Sociology	3
SOCI-1306	Contemporary Social Problems	3
SOCI-2319	Minority Studies	3

Mathematics & Natural Sciences

BIOL-1408	General Biology I	4
BIOL-1409	General Biology II	4
BIOL-2401	Anatomy & Physiology I	4
BIOL-2402	Anatomy & Physiology II	4
BIOL-2421	Microbiology	4
CHEM-1405	Introduction to Chemistry I	4
CHEM-1411	General Chemistry I	4
CHEM-1412	General Chemistry II	4
MATH-1314	College Algebra	3
MATH-1316	Plane Trigonometry	3
MATH-1321	Mathematics of Finance	3
MATH-1332	College Mathematics	3
MATH-1342	Statistics	3
MATH-1348	Analytic Geometry	3
MATH-2312	Pre-Calculus	3
MATH-2413	Calculus I	4
MATH-2414	Calculus II	4
MATH-2415	Calculus III	4
PHYS-114	Environmental Science	3
PHYS-1310	Fundamentals of Physics	3
PHYS-1315	Physical Science	3
PHYS-1401	College Physics I	4
PHYS-1402	College Physics II	4
PHYS-2325	University Physics I	4
PHYS-2326	University Physics II	4

Other Academic Transfer Courses

The following courses are approved for academic credit by the Texas Higher Education Coordinating Board. However, these courses are not part of the General Education core and will not satisfy the core requirements for graduation. Certain programs require these courses as part their curricula, and the course may also be taken as an elective beyond requirements of the General Education core.

ACCT-2401	Principles of Accounting I	4
ACCT-2402	Principles of Accounting II	4
BUSI-1301	Introduction to Business	3
BUSI-2301	Business Law I	3
COSC-1301	Introduction to Computing	3
COSC-1418	Computer Science Program. I	4
COSC-2418	Computer Science Program. II	4
ENGR-1304	Engineering Graphics	2
ENGR-2301	Engineering Mechanics I	3
ENGR-2302	Engineering Mechanics II	3
ENGR-2332	Mechanics of Solids	3
MATH-1324	Business Algebra	3
MATH-1325	Business Calculus	3

Resolution of Transfer Agreements

The following procedures shall be followed by public institutions of higher education in resolution of transfer disputes involving lower division courses.

1. If an institution of higher education does not accept course credit earned by a student at another institution of higher education, that institution shall give written notice to the student and the other institution that the transfer of the course credit is denied.
2. The two institutions and the student shall attempt to resolve the transfer of the course credit in accordance with Coordinating Board rules and/or guidelines.
3. If the transfer dispute is not resolved to the satisfaction of student or the institution at which the credit was earned within 45 days after the date the student received written notice of the denial, the institution that denies the transfer of the course credit shall notify the Commissioner of its denial and the reason for the denial.

The Commissioner of higher education or the Commissioner's designee shall make the final determination about a dispute concerning the transfer of course credit and give written notice of the determination to the involved student and institution.

As mandated by House Bill 2362 "relating to enhancing the transfer of student between certain public institutions of higher education," colleges and universities across Texas are converting to a common course numbering system to facilitate transfer of course. This law does not apply to vocational-technical courses. For further information regarding the transfer of courses, contact the Offices of Admissions and Records or Counseling.

Associate of Applied Science Degree Programs



Texas State
Technical College

Associate of Applied Science Degree Programs

General Information

Technical programs of study offered at TSTC award the Associate of Applied Science degree. These programs train technicians who are needed in today's industrial world to work on a level between engineers and skilled craftsmen.

The key concept in technical programs is "Applied Science." Students learn theories of related technical and scientific fields, then apply those theories in hands-on laboratories and field work. Most lab and field work relates directly to skills that graduates can apply to entry-level jobs. The majority of courses required are in the major program field, and they equip the student with specific abilities needed in that career field.

The general education core accounts for a minimum of 15 semester credit hours of the Associate Degree curriculum. This core is designed to provide students a general education in the humanities and fine arts, social and behavioral sciences and mathematics and natural sciences. From this, students develop the understanding, attitudes and values that are necessary for effective, responsible and productive living in today's society. The remainder of the courses are in the major program or support programs.

Several programs of study include cooperative education courses. Students generally alternate attendance at TSTC with one or more periods of employment in a business or industry related to their field of study.

General Requirements

The following information outlines the requirements for an Associate of Applied Science degree. Additional information can be found in the Admissions and Records and the Scholastic Regulations sections of this catalog

1. Completion of admission requirements.
2. Completion of curriculum requirements.
 - a. The student must complete the minimum credit hours as specified for the

program of study. Requirements are listed with the program of study descriptions in this catalog.

b. The student must complete a minimum of 15 semester hours of general education courses. These include:

*ENGL-1301

*a math or natural science course

*a social or behavioral science course

*any courses specified by the student's major program (these will be listed with the program of study descriptions in this catalog)

*any remaining general education hours may be satisfied by taking elective courses in the humanities and fine arts, social and behavioral sciences or mathematics and natural sciences.

3. Students must meet all scholastic guidelines and specific program requirements. Additional information is included in the Scholastic Regulations section of this catalog. Some programs of study have specific requirements. More information is listed in the respective program of study description.

4. Discharge of all financial obligations to TSTC.

5. Completion of an Application for Graduation and payment of graduation fees.

Academic Courses

TSTC offers academic and developmental courses approved by the Texas Higher Education Coordinating Board to support students seeking the Associate of Applied Science degree. More information on course content and lecture and lab hours is included in the Course Descriptions section of this catalog. Course credit for all academic courses is reported in semester credit hours.

AIR CONDITIONING AND REFRIGERATION TECHNOLOGY

Associate of Applied Science Degree

Employment in the field of air conditioning and refrigeration technology is expected to increase as more homes and commercial and industrial buildings are built. Installations of energy-saving heating and air conditioning systems in older homes and buildings will also contribute to an increase in employment. This is a wide career field dealing with the technology of refrigeration, air conditioning and heating techniques in homes, work environments, transportation, food preservation and health.

Course topics include:

- Applied electricity and electronics.
- Basic drafting.
- Design and control systems.
- Air movement and balancing.

Admission Requirements:

In addition to admission requirements listed under "Admissions and Records," it is recommended that the student have completed two units of high school math, including one unit of algebra and one unit of high school science, preferably physics or chemistry.

Degree Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
ACT-1214	Shop & Safety Skills	2	6	4
ACT-1313	Air Conditioning Electrical	1	6	3
ACT-1114	Princ. of Refrigeration	2	6	4
GT-1001	Orientation (or GT-1003)	1	0	1
DDT-116	Basic Drafting	2	3	3
		8	21	15
Quarter 2				
ACT-150	Domest. A/C/WindowA/C	2	4	3
ACT-1614	Duct Fabrication	2	6	4
ACT-1513	Residential Heating	2	4	3
ACT-1414	Heat Pumps & Cooling Syst.	2	6	4
		8	20	14

Quarter 3

ENGL-1301	Composition I	4	0	3
ACT-2114	Commercial Refrigeration	2	6	4
ACT-2214	Automatic Control Systems	3	3	4
ACT-190	Perform Contracted Jobs I	1	3	2
MTH-105	Technical Mathematics	2	3	3
		12	15	16

Quarter 4

Gen Ed (Social Sci. Elective)		4	0	3
ACT-200	Year-Round Systems	2	4	3
ACT-250	Commercial Air Conditioning	2	4	3
ACT-270	Perform Contracted Jobs II	2	6	4
GT-262 I	World of Work	2	0	2
		12	14	15

Quarter 5

Gen Ed (Math/Sci Elective)		4	0	3
ACT-300	Hydronics	3	3	4
ACT-310	Pneumatics	3	3	4
ACT-320	Gas Service Problems	2	3	3
ACT-330	Perform Contracted Jobs III	1	6	3
		13	15	17

Quarter 6

Gen Ed Elective		4	0	3
Gen Ed Elective		4	0	3
ACT-350	Heat/Cool & Ref. Load Calc.	3	3	4
ACT-360	Duct Design	3	3	4
ACT-380	Psychometrics	3	3	4
		17	9	18

Total credit hours	95
Total clock hours	1968

See the Course Descriptions section to obtain information about courses.

AUTOMATED MANUFACTURING TECHNOLOGY

Associate of Applied Science Degree

New industries requiring the knowledge, experience and products of automated manufacturing technology continue to emerge each day. Because of this, it seems certain that future needs for automated manufacturing technicians will continue to increase. Automated manufacturing technicians have the skills necessary to operate and maintain automated and computer-controlled equipment used to improve efficiency and reliability.

In this program, students will learn to:

- Program and maintain a variety of small industrial robots.
- Troubleshoot integrated automated systems.
- Install and test computerized work cells.

Admission Requirements:

In addition to admission requirements listed under "Admissions and Records," it is recommended that the applicant have a foundation in math and science, including a solid knowledge of algebra.

Degree Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
AMT-114	Mechanical Skills	2	6	4
AMT-125	Industrial Electricity	3	4	4
ENGL-1301	Composition I	4	0	3
GT-1001	Orientation (or GT-1003)	1	0	1
DDT-1503	Computer Aided Drafting I	2	4	3
		12	14	15
Quarter 2				
MATH-1314	College Algebra	4	0	3
AMT-130	Introduction to Motor Controls	3	4	4
AMT-250	Industrial Electronics I	4	4	5
SPCH-1318	Interpersonal Communications (or SPCH-2333 or SPCH-1311)	4	0	3
MGT-200	Manufacturing Process/ Machining 2	4	4	3
		17	12	18
Quarter 3				
AMT-205	Motor Control Systems	4	4	5
	Social/Behavioral Science Elective	4	0	3
MGT-2303	Introduction to CNC	2	4	3
AMT-225	Troubleshoot. Electronic Syst.	3	4	4
MATH-1316	Plane Trigonometry	4	0	3
		17	12	18

Quarter 4

AMT-315	Industrial Electronics II	4	4	5
AMT-345	Program. Logic Controllers	3	4	4
AMT-280	Computer Aided Manufacturing	2	4	3
PHYS-1401	College Physics I (or CHEM-1411)	4	4	4
		13	16	16

Quarter 5

AMT-245	Fluid Power	3	4	4
AMT-310	Industrial Computers	4	4	5
AMT-300	Total Quality Management	1	4	2
AMT-370	Statistical Process Control	2	3	3
AMT-265	Industrial Instrumentation	3	4	4
		13	19	18

Quarter 6

AMT-330	Industrial Maintenance	3	4	4
AMT-335	Computer Integr. Manufacturing	4	4	5
AMT-320	Robotics	4	4	5
	Free Elective *	2	3	3
		13	15	17

Total credit hours	102
Total clock hours	2076

Approved Electives: AMT-240, AMT-315, AMT-360, AMT-370.

*Must be outside the major department.

See the Course Descriptions section to obtain information about courses.

AUTOMATED OFFICE TECHNOLOGY

Associate of Applied Science Degree

Administrative Secretary

Secretaries are employed in all types of organizations and make up one of the largest occupations in the U.S. economy. Secretaries are generally responsible for the communications and organization of business offices. In today's automated offices, more secretaries are assuming responsibilities previously handled by managers and professionals. Administrative secretaries are expected to perform executive duties for their employers.

Course topics include:

- Oral and written communications.
- Typing; shorthand.
- Word processing; data processing.
- Proofreading; machine transcription.
- Records management and secretarial procedures.

Admission Requirements:

Students must complete the admission requirements listed under "Admissions and Records."

Degree Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
GT-1003	Introduction to College Life	0	3	1
PSYC-2301	General Psychology	4	0	3
ENGL-1301	Composition I	4	0	3
AOT-2210	Beginning SpeedWriting	2	3	3
AOT-1320	Word Processing I	2	3	3
AOT-1310	Workplace Readiness	2	3	3
		14	12	16
Quarter 2				
AOT-2220	Intermediate SpeedWriting	2	3	3
AOT-1313	Proofreading	2	3	3
AOT-1330	Word Processing II	2	3	3
ENGL-1302	Composition II	4	0	3
ACCT-2401	Principles of Accounting I	4	3	4
		14	12	16
Quarter 3				
AOT-3230	Advanced SpeedWriting	2	3	3
AOT-2111	Records Management	2	3	3
MATH-1314	College Algebra	4	0	3
SPCH-1311	Introduction to Speech Comm.	4	0	3
BUSI-2301	Business Law I	4	0	3
		16	6	15

Quarter 4

IMT-118	Intro. to Desktop Publishing	2	4	3
AOT-2512	Typing Applications (or AOT-3212)	1	4	2
AOT-3112	Machine Transcription	2	3	3
AOT-3213	Advanced Office Procedures	2	3	3
	Approved Elective	1	4	2
		8	18	13

Quarter 5

AOT-2201	Electronic Spreadsheets I	2	3	3
IMT-2513	Database Applications I	2	4	3
AOT-3352	Advanced Office Technology	2	3	3
AOT-2301	Office Automation Strategies	2	3	3
	Elective	2	3	3
		10	16	15

Quarter 6

AOT-1340	Word Processing III	2	3	3
AOT-3372	Presentation Graphics	2	3	3
AOT-3362	Office Management	2	3	3
	Approved Elective	1	4	2
	Elective*	2	3	3
		9	16	14

Total Credit Hours	89
Total Clock Hours	1812

Approved Electives: IMT-370, AOT-199, AOT-299, AOT-298, AOT-398, ACCT-2402, AOT 2612

*Must be outside the major department.

See the Course Descriptions section to obtain information about courses.

AUTOMATED OFFICE TECHNOLOGY

Associate of Applied Science Degree

Legal Secretary Option

Secretaries are employed in all types of organizations and make up one of the largest occupations in the U.S. economy. Secretaries are generally responsible for the communications and organization of business offices. In today's automated offices, more secretaries are assuming responsibilities previously handled by managers and professionals. Legal secretaries prepare legal documents and communicate with the courts.

Course topics include:

- Oral and written communications.
- Typing; shorthand.
- Word processing; data processing.
- Proofreading; machine transcription.
- Records management and secretarial procedures.
- Legal word processing; Texas legal systems.

Admission Requirements:

Students must complete the admission requirements listed under "Admissions and Records."

Degree Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
GT-1003	Introduction to College Life	0	3	1
PSYC-2301	General Psychology	4	0	3
ENGL-1301	Composition I	4	0	3
AOT-2210	Beginning Speed Writing	2	3	3
AOT-1320	Word Processing I	2	3	3
AOT-1310	Workplace Readiness	2	3	3
		14	12	16
Quarter 2				
AOT-2220	Intermediate Speed-Writing	2	3	3
AOT-1313	Proofreading	2	3	3
AOT-1330	Word Processing II	2	3	3
ENGL-1302	Composition II	4	0	3
ACCT-2401	Principles of Accounting I	4	3	4
		14	12	16
Quarter 3				
AOT-3230	Advanced Speed Writing	2	3	3
AOT-2111	Records Management	2	3	3
MATH-1314	College Algebra	4	0	3
SPCH-1311	Intro. to Speech Communications	4	0	3
BUSI-2301	Business Law I	4	0	3
AOT-2315	Introduction to the Law Office	2	3	3
		18	9	18

Quarter 4

IMT-118	Intro. to Desktop Publishing	2	4	3
AOT-2512	Typing Applications (or AOT-3212)	1	4	2
AOT-2201	Electronic Spreadsheets I	2	3	3
AOT-3112	Machine Transcription	2	3	3
AOT-2317	Survey of Legal Specialization I	2	3	3
AOT-2319	Legal Document Preparation I	2	3	3
		11	20	17

Quarter 5

IMT-2513	Database Applications I	2	4	3
AOT-3317	Survey of Legal Specialization	2	3	3
AOT-3319	Legal Document Preparation II	2	3	3
AOT-3321	Law Office Management	2	3	3
	Approved Elective	2	3	3
		10	16	15

Quarter 6

AOT-1340	Word Processing III	2	3	3
AOT-3372	Presentation Graphics	2	3	3
AOT-	Litigation	2	3	3
	Electives*	4	6	6
		10	15	15

Total Credit Hours	97
Total Clock Hours	1932

Approved Electives: IMT-370, AOT-199, AOT-299, AOT-298, AOT-398, ACCT-2402, AOT 2612

*At least one course must be outside the major department.

See the Course Descriptions section to obtain information about courses.

AVIATION MAINTENANCE TECHNOLOGY

Associate of Applied Science Degree

Aviation maintenance technicians are a vital part of the aerospace industry workforce, a group comprised of airframe and powerplant mechanics, aircraft mechanics, sheetmetal workers and aircraft electricians. These skilled workers are employed by aircraft manufacturers, contract maintenance operations, corporate aviation operations, general aviation operations and regional and major airlines. In the last several years, the aerospace industry in Texas has expanded through contract maintenance and is expected to continue to grow.

Admission Requirements:

Students must complete the admission requirements listed under "Admissions and Records."

Degree Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
GT-1001	Orientation (or GT-1003)	1	0	1
MATH-1314	College Algebra	4	0	3
ENGL-1301	Composition I	1	3	2
PSYC-2301	General Psychology	4	0	3
AER-1021	Aircraft Safety & Orientation	1	0	1
AER-1123	Federal Aviation Regulations	2	3	3
AER-1522	Ground Operation & Servicing	1	2	2
		18	8	18

Quarter 2

PHYS-1310	Fundamentals of Physics	4	0	3
AER-1023	Shop Practices	1	8	3
AER-1122	Weight and Balance	1	2	2
AER-1524	Basic Aircraft Electricity	2	8	4
		8	18	12

Quarter 3

AER-2022	Propellers and Control Systems	1	4	2
AER-2023	Engine Auxiliary Systems	2	4	3
AER-2025	Fuel Metering and Induction	3	6	5
AER-2325	Powerplant Electrical Systems	2	9	5
		8	23	15

Quarter 4

AER-2123	Gas Turbine Engines	2	4	3
AER-2124	Reciprocating Engines	2	8	4
AER-2125	Engine Overhaul	2	12	5
		6	24	12

Quarter 5

AER-2225	Powerplant Analysis & Inspection	2	12	5
AER-3027	Sheet Metal Structures	4	9	7
WLT-104	Aircraft Welding	2	3	3
		8	24	15

Quarter 6

AER-3123	Instruments, Navigation, & Comm.	2	3	3
AER-3124	Aircraft Auxiliary & Fuel Systems	2	8	4
AER-3126	Aircraft Electrical Systems	3	9	6
ENGL-1302	Composition II	4	0	3
		11	20	16

Quarter 7

AER-3022	Wood, Fabric and Finishing	1	4	2
AER-3026	Hydraulic, Pneumatic & Landing Gear Systems	3	9	6
AER-3127	Assembly, Rigging & Inspection	4	9	7
		8	22	15

Total credit hours	103
Total clock hours	2472

See the Course Descriptions section to obtain information about courses.

This program is pending approval by the Federal Aviation Administration.

BIOMEDICAL EQUIPMENT TECHNOLOGY

Associate of Applied Science Degree

The increasing use of medical electronic devices and other sophisticated biomedical equipment has created a great demand for skilled and trained biomedical equipment technicians. Biomedical equipment technicians are responsible for maintaining safe and effective operating equipment used to diagnose, prevent and treat disease and illness.

Admission Requirements:

In addition to admission requirements listed under "Admissions and Records," high school courses in algebra, trigonometry, biology, physics, chemistry or physiology are helpful in preparing for this program.

Clinical Entry Requirements:

Before enrolling in clinical or cooperative study, a student in any of the allied health programs must have on file with the TSTC nurse all of the following material.

1. Results of a prescribed physical examination.
2. Proof of required immunizations.
3. Proof of liability insurance of at least \$1 million. (available through TSTC).

Degree Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
BET-111	Introduction to BET I	1	0	1
MATH-1314	College Algebra	4	0	3
ENGL-1301	Composition I	4	0	3
EEC-1004	DC Circuits	2	8	4
GT-1001	Orientation (or GT-1003)	1	0	1
IMT-1013	Intro. to Computer Applications (or CST-205)	2	4	3
	Approved Elective	1	4	2
		15	16	17

Quarter 2

MATH-1316	Plane Trigonometry	4	0	3
EEC-1104	AC Circuits	2	8	4
EEC-1203	Digital Fundamentals	2	4	3
CMT-1603	Microprocessors I	2	4	3
BET-313	Introduction to BET II	1	4	2
		11	20	15

Quarter 3

PHYS-1401	College Physics I	4	4	4
EEC-1303	Digital Applications	2	4	3
EEC-1404	Semiconductors I	2	8	4
SPCH-1311	Intro. to Speech Communication (or SPCH-2333 or SPCH-1318)	4	0	3
	Approved Elective	1	4	2
		13	20	16

Quarter 4

BET-411	Internship I*	1	4	2
BET-424	Medical Circuits/Troubleshooting	3	3	4
BET-444	General Medical Equipment I	2	4	3
CHEM-1411	General Chemistry I	4	4	4
EEC-1503	Semiconductors II	2	4	3
		12	19	16

Quarter 5

BET-511	Internship II*	1	4	2
BET-524	Basic X-ray	3	3	4
BET-534	Physiological Instruments I	3	3	4
BET-544	General Medical Equipment II	2	4	3
ELT-321	Industrial Power Supplies	3	4	4
		12	18	17

Quarter 6

BET-611	Internship III*	1	4	2
BET-624	Physiological Instruments II	3	3	4
BET-634	Clinical Instrumentation	3	3	4
PSYC-2301	General Psychology	4	0	3
LET-1603	Fund. of Lasers & Laser Safety	3	4	4
	Elective**	2	4	3
		16	18	20

Total credit hours 101
Total clock hours 2280

Approved Electives: BET-122, BET-314, CMT-280, DDT-101, ELT-105, INT-102, INT-125.

*BET-298 may be taken in place of BET-411, BET-511 and BET-611.

**Must be outside the major department.

See the Course Descriptions section to obtain information about courses.

BUILDING CONSTRUCTION TECHNOLOGY

Associate of Applied Science Degree

Anticipated growth in business investment for new factories, office buildings, stores, hotels, power plants and other structures should continue to stimulate the demand for workers in the building construction field. Maintenance and repair work on all types of structures will also contribute to this demand. Workers in this field build, repair and modernize all types of buildings, including homes, offices and commercial structures.

In this program, students will learn to:

- Prepare building sites, construct foundations and structures.
- Frame and finish various building systems.
- Estimate cost and inspect construction jobs.
- Supervise other construction workers.

Admission Requirements:

In addition to admission requirements listed under "Admissions and Records," it is recommended students complete two units of high school mathematics, preferably one unit of algebra and one unit of geometry.

Degree Plan

Quarter 1

Course	Title	Lec	Lab	Cr
BCT-102	Building Construction Materials	2	2	3
BCT-104	Blueprint Reading & Specs.	2	3	3
BCT-106	Building Construction Surveying	1	3	2
BCT-110	Foundations	2	6	4
BCT-302	Construction Safety & Health	3	0	3
GT-1001	Orientation (or GT-1003)	1	0	1
		11	14	16

Quarter 2

BCT-112	Properties of Concrete	2	2	3
BCT-114	Principles of Building Design	2	2	3
BCT-204	Carpentry Tools & Framing I	3	6	5
MTH-103	Applied Technical Math	2	3	3
ENGL-1301	Composition I	4	0	3
		13	13	17

Quarter 3

BCT-132	Carpentry Tools & Framing II	3	3	4
BCT-202	Estimating I	2	2	3
BCT-210	Construction Materials & Tech.	2	2	3
General Education Elective		4	0	3
Elective*		2	3	3
		13	10	16

Quarter 4

BCT-133	Roofing	1	3	2
BCT-214	Interior & Exterior Finish	3	9	6
BCT-221	Brick & Block Laying	3	3	4
BCT-225	Finish Carpentry	3	4	4
		10	19	16

Quarter 5

BCT-354	Blueprint Reading & Specs. II	2	3	3
BCT-371	Estimating II	2	3	3
BCT-373	Structural Materials Problems	2	3	3
MATH-1314	College Algebra	4	0	3
Social/Behav. Sci. Elective		4	0	3
		14	9	15

Quarter 6

BCT-351	Structural Steel	3	4	4
BCT-352	Structural Concrete	3	6	5
BCT-306	Construction Inspection	2	3	3
MATH-1316	Plane Trigonometry	4	0	3
Gen. Ed. Elective		4	0	3
		16	13	18

Total credit hours 98
Total clock hours 1860

* Must be outside the major department.

See the Course Descriptions section to obtain information about courses.

CHEMICAL TECHNOLOGY

Associate of Applied Science Degree

It is expected that the demand for chemical technicians will continue to rise due to an expected growth in scientific research and development and production of technical products. Chemical technicians are employed in research, testing and quality control of a wide range of products, including petroleum, plastics, pharmaceuticals, cosmetics and many others.

In this program, students will learn to:

- Analyze various materials using standard procedures and instrumental procedures.
- Calculate and report chemical analyses.
- Use computerized testing procedures, such as atomic absorption, gas chromatography, infrared and mass spectroscopy.

Admission Requirements:

In addition to admission requirements listed under "Admissions and Records," completion of one unit of high school algebra is recommended.

Quarter 4

CHT-207	Analytical Chemistry II	3	6	5
CHT-210	Analytical Instrumentation I	2	6	4
CHT-306	Organic Polymers I	3	3	4
PHYS-1401	College Physics I	4	4	4
		12	19	17

Quarter 5

CHT-302	Analytical Instrumentation II	2	6	4
CHT-304	Unit Operations I	3	6	5
CHT-316	Organic Polymers II	3	3	4
PHYS-1315	Physical Science	4	0	3
		12	15	16

Quarter 6

MATH-1342	Statistics	4	0	3
	Elective*	2	4	3
CHT-308	Analytical Instrumentation III	2	6	4
CHT-310	Unit Operations II	3	6	5
CHT-317	Thermoplastic & Thermoset Molding	3	3	4
		14	19	19

Total credit hours	102
Total clock hours	2100

*Must be outside the major department.

See the Course Descriptions section to obtain information about courses.

Degree Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
ENGL-1301	Composition I	4	0	3
MATH-1314	College Algebra	4	0	3
PSYC-2301	General Psychology	4	0	3
CHT-120	General Chemistry I	3	6	5
GT-1001	Orientation (or GT-1003)	1	0	1
		16	6	15
Quarter 2				
SPCH-1318	Interpersonal Comm. (or SPCH-2333 or SPCH-1311)	4	0	3
MATH-1316	Plane Trigonometry	4	0	3
CHT-122	Chemical Calculations I	2	6	4
CHT-124	General Chemistry II	3	6	5
CHT-202	Organic Chemistry I	3	3	4
		16	15	19
Quarter 3				
IMT-1013	Intro. to Computer Applications	2	4	3
CHT-204	Chemical Calculations II	2	6	4
CHT-206	Analytical Chemistry I	2	6	4
CHT-208	Organic Chemistry II	3	6	5
		9	22	16

COMPUTER MAINTENANCE TECHNOLOGY

Associate of Applied Science Degree

As the economy grows and advances, more computer equipment will be used and more technicians will be needed to install and maintain it. Computer maintenance technicians keep computer hardware and related electronic equipment of all types in good working order. This includes installing computerized equipment, testing for problems when equipment fails and making repairs or redesigns when necessary.

In this program, students will learn to:

- Analyze DC and AC circuits.
- Construct and troubleshoot digital systems.
- Apply electronic skills to various computer systems and components.

Admission Requirements:

In addition to admission requirements listed under "Admissions and Records," completion of one unit of high school algebra is recommended.

Degree Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
MATH-1314	College Algebra	4	0	3
ENGL-1301	Composition I	4	0	3
EEC-1004	DC Circuits	2	8	4
GT-1001	Orientation (or GT-1003)	1	0	1
CST-205	BASIC Programming (or IMT-1013)	2	4	3
	Approved Elective	1	4	2
		14	16	16
Quarter 2				
MATH-1316	Plane Trigonometry	4	0	3
EEC-1104	AC Circuits	2	8	4
CMT-1603	Microprocessors I	2	4	3
EEC-1203	Digital Fundamentals	2	4	3
PSYC-2301	General Psychology	4	0	3
		14	16	16
Quarter 3				
PHYS-1401	College Physics I (or CHEM-105, or CHEM-1411)	4	4	4
EEC-1404	Semiconductors I	2	8	4
EEC-1303	Digital Applications	2	4	3
	Approved Elective	1	4	2
		9	20	13

Quarter 4

CMT-2004	Microprocessors II	2	6	4
CMT-2204	Computer System Maint. I	2	6	4
ELT-2003	Linear Integrated Circ.	2	4	3
GT-262	World of Work	2	0	2
EEC-1503	Semiconductors II	2	4	3
		10	20	16

Quarter 5

CMT-3004	Computer System Maint. II	2	6	4
CMT-2304	Computer Peripherals	2	6	4
CMT-3204	Computer Interfacing	2	6	4
ELT-321	Industrial Power Supplies	3	4	4
		9	22	16

Quarter 6

CMT-3104	Computer System Maint. III	2	6	4
CMT-3304	Data Communications	2	4	3
CMT-312	Computer Projects	2	6	4
ELT-3703	Optoelectronics	2	4	3
		8	20	14

Total credit hours	91
Total clock hours	2136

Approved Electives: BET-122, BET-314, CMT-280, DDT-101, ELT-105, INT-102, INT-125.

See the Course Descriptions section to obtain information about courses.

COMPUTER SCIENCE TECHNOLOGY

Associate of Applied Science Degree

Computers are used in almost every workplace, creating a great demand for computer programmers. Computer programs, or software, are the series of instructions that tell the computer what operations to perform. The computer programmer designs the set of instructions, then maintains the programs so that users get the most out of the computer. This field requires exacting, logic-oriented technicians.

In this program, students will learn to:

- Write programs in the most common computer languages.
- Analyze the needs of a company or office and design appropriate computer programs.

Admission Requirements:

Students must complete the admission requirements listed under "Admissions and Records."

Degree Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
AOT-1112	Keyboarding IA	1	4	2
CST-1214	Program Design & Dev. I	2	6	4
ENGL-1301	Composition I	4	0	3
GT-1001	Orientation (or GT-1003)	1	0	1
MATH-1314	College Algebra	4	0	3
		12	10	13
Quarter 2				
ACCT-2401	Principles of Accounting I	4	3	4
CST-1213	Computer Oper. Systems I (or IMT-1213)	2	4	3
CST-1313	Program Design & Dev. II	2	4	3
ENGL-1302	Composition II	4	0	3
IMT-1013	Intro. to Computer Applications	2	4	3
		14	15	16
Quarter 3				
ACCT-2402	Principles of Accounting II	4	3	4
CST-122	Advanced BASIC	3	7	5
CST-232	System Anal. & Design I	2	3	3
CST-1314	Programming Language I	2	8	4
		11	21	16

Quarter 4

CST-242	System Anal. & Design II	2	3	3
CST-366	Data Base	3	7	5
CST-2113	Computer Oper. Systems II	2	4	3
CST-2214	Programming Language II	2	8	4
MATH-1342	Statistics	4	0	3
		13	22	18

Quarter 5

BUSI-2301	Business Law	4	0	3
CST-124	Assembler	3	7	5
CST-352	Applications Projects I*	1	6	3
		4	4	5
		12	17	16

Quarter 6

CST-362	Prog. Maint. & Conversion	3	7	5
CST-364	Applications Projects II*	1	6	3
		4	4	5
		4	0	3
		12	17	16

Total credit hours

95

Total clock hours

2112

*CST-298 may be substituted for CST-352 and CST-364.

Approved Electives: CST-231, CST-233, CST-235, CST-236, CST-351, CST-354, CST-367.

See the Course Descriptions section to obtain information about courses.

DENTAL LABORATORY TECHNOLOGY

Associate of Applied Science Degree

The level of public awareness of dental health and preventive dentistry has increased significantly in recent years. Because of this fact, and relatively widespread dental insurance coverage, it is expected that the demand for dental laboratory technicians will continue to grow fairly rapidly. Dental laboratory technicians make dentures, retainers, crowns, inlays, bridges and orthodontic appliances using written instructions from dentists. This field is an exacting science as well as an art which requires attention to precise details.

In this program, students will learn to:

- Work with wire, plaster, porcelain, wax, plastic, gold and other metals.
- Use specialized tools to carve and shape these materials.
- Match color and placement of teeth for natural look and comfortable fit.

Admission Requirements:

In addition to admission requirements listed under "Admissions and Records," students are required to complete special tests in manual dexterity, dimensional abilities and use of tools. Applicants will be notified of testing dates.

Degree Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
ENGL-1301	Composition I	4	0	3
GT-1001	Orientation (or GT-1003)	1	0	1
DLT-101	Dental Anatomy/ Tooth Morphology	2	6	4
DLT-105	Removable Partial Denture Techniques I	2	4	3
DLT-107	Complete Denture Tech. I	2	4	3
DLT-109	Fixed Restorative Tech. I	2	4	3
		13	18	17
Quarter 2				
MATH-1314	College Algebra	4	0	3
DLT-103	Dental Materials	1	6	3
DLT-201	Removable Partial Denture Techniques II	2	4	3
DLT-203	Complete Denture Tech. II	2	4	3
DLT-205	Fixed Restorative Tech. II	2	4	3
	Speech Elective	4	0	3
		15	18	18

Quarter 3

CHEM-1405	Introductory Chemistry	4	4	4
DLT-207	Intro. to Occlusion/ Mandibular Motion	1	0	1
DLT-209	Removable Partial Denture Techniques III	2	4	3
DLT-211	Complete Dent. Tech. III	2	4	3
DLT-213	Fixed Restorative Tech. III	2	4	3
GT-205	Shop Safety	2	0	2
		13	16	16

Quarter 4

IMT-1013	Introduction to Computer Applications	2	4	3
PSYC-2301	General Psychology	4	0	3
DLT-301	Removal Partial Denture Techniques IV	2	4	3
DLT-303	Complete Dent. Tech. IV	2	4	3
DLT-313	Dental Ceramics I	2	4	3
	Free Elective*	3	0	3
		15	16	18

Quarter 5

DLT-307	Removable Partial Denture Techniques V	2	4	3
DLT-309	Complete Dent. Tech. V	2	4	3
DLT-311	Fixed Restorative Tech. IV	2	4	3
DLT-317	Dental Ceramics II	2	4	3
DLT-315	Intro. to Orthodontic Procedures	2	4	3
		10	20	15

Quarter 6

	General Education Elective	4	0	3
DLT-390	Practical Laboratory Procedures	3	9	6
DLT-399	Special Projects	3	9	6
		10	18	15

Total credit hours 99
Total clock hours 2184

*Must be outside the major department.

See the Course Descriptions section to obtain information about courses.

DRAFTING AND DESIGN TECHNOLOGY

Associate of Applied Science Degree

Industrial growth and increasingly complex design problems linked to new products and processes will greatly increase the demand for drafting services in the future. Drafters prepare detailed drawings used to manufacture or build any object or structure. These drawings are prepared from sketches, notes and discussions with designers, architects and engineers. Neatness and the ability to pay close attention to details are important qualities for drafters.

In this program, students will:

- Utilize computer graphics equipment and hand drafting tools to produce drawings and solve problems in mechanical, electronic, structural, civil, piping and architectural drafting.
- Learn principles of computer-aided drafting on various types of industry quality graphics systems.
- Learn basic principles of design as applied to printed circuit board production, electromechanical packaging, structural steel construction, architectural and civil engineering and other areas.

Admission Requirements:

In addition to admission requirements listed under "Admissions and Records," two units of high school mathematics, including one unit of algebra, is recommended.

Quarter 2				
DDT-1403	Electro-mechanical Draft.	2	4	3
MATH-1314	College Algebra	4	0	3
DDT-1203	Mechanical Drafting I	2	4	3
DDT-1503	Computer-Aided Drafting I	2	4	3
DDT-1303	Architectural Drafting	2	4	3
		12	16	15

Quarter 3				
MATH-1316	Plane Trigonometry	4	0	3
DDT-305	Dimensioning & Tolerancing	2	4	3
DDT-2203	Computer-Aided Drafting II	2	4	3
DDT-102	Basic Elec. Draft. & Theory	3	3	4
DDT-218	Facilities Layout & Design	2	4	3
		13	15	16

Quarter 4				
SPCH-1318	Interpersonal Communication (or SPCH-1311 or SPCH-2333)	4	0	3
DDT-120	Civil Engineering Drafting I	2	4	3
DDT-2303	Printed Circuit Board Design	2	4	3
DDT-333	Surveying & Related Calc.	3	3	4
DDT-375	Computer Graphics	3	3	4
		14	14	17

Quarter 5				
DDT-202	Mechanical Drafting II	3	3	4
DDT-3104	Electro-mechanical Des. Proj.	2	6	4
DDT-364	Civil Engineering Draft. II	3	4	4
GT-262	World of Work	2	0	2
DDT-385	Adv. Computer Graphics	2	4	3
		12	17	17

Quarter 6				
DDT-327	Technical Illustrations	3	3	4
DDT-380	Mechanical Drafting III	2	3	3
DDT-374	Civil Engineering Draft. III	2	4	3
PHYS-1401	College Physics I	4	4	4
PSYC-2301	General Psychology	4	0	3
		15	14	17

Total credit hours	95
Total clock hours	1992

See the Course Descriptions section to obtain information about courses.

Degree Plan				
Course	Title	Lec	Lab	Cr
Quarter 1				
ENGL-1301	Composition I	4	0	3
GT-1001	Orientation (or GT-1003)	1	0	1
DDT-1104	General Drafting	2	6	4
DDT-345	Intro. to CAD/Keyboarding	1	4	2
DDT-2103	Descriptive Geometry	2	4	3
		10	14	13

ELECTRONIC TECHNOLOGY

Associate of Applied Science Degree

There is good reason to believe the electronics industry will continue to be one of the most important industries in the future. This industry is involved in new and exciting consumer products which should continue to stimulate growth and provide a positive job outlook for the electronic industry. Electronic technicians are involved in almost every aspect of engineering and scientific work, from research to production and operation. This program offers a specialized degree in either lasers or communications.

In this program, students will learn to:

- Use electronic test instruments and hand tools.
- Analyze various types of circuits.
- Apply basic electronic theory in a wide range of areas.

Admissions Requirements:

In addition to admission requirements listed under "Admissions and Records," completion of one unit of high school algebra is recommended.

Degree Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
MATH-1314	College Algebra	4	0	3
ENGL-1301	Composition I	4	0	3
EEC-1004	DC Circuits	2	8	4
GT-1001	Orientation (or GT-1003)	1	0	1
	Approved Elective	1	4	2
ELT-1001	Intro. to Electronic Technology	1	0	1
	Social Science Elective	4	0	3
		17	12	17

Quarter 2

MATH-1316	Plane Trigonometry	4	0	3
EEC-1104	AC Circuits	2	8	4
EEC-1203	Digital Fundamentals	2	4	3
CMT-1603	Microprocessors I	2	4	3
	Approved Elective	1	4	2
		11	20	15

Quarter 3

ELT-205	Electronic Measure.	2	4	3
EEC-1404	Semiconductors I	2	8	4
EEC-1303	Digital Applications	2	4	3
PHYS-1401	College Physics I(or CHEM-1411)	4	4	4
		10	20	14

Quarter 4

EEC-1503	Semiconductors II	2	4	3
ELT-120	AC Circ. Analysis II	2	4	3
ELT-3503	Pulse & Switching	2	4	3
ELT-2503	Electronic Controls	2	4	3
LET-1603	Fund. of Lasers & Laser Safety	3	4	4
		11	20	16

Quarter 5

CST-205	BASIC Programming	2	4	3
ELT-321	Ind. Power Supplies	3	4	4
ELT-2003	Linear Int. Circuits	2	4	3
ELT-2803	Communication Circuits	3	4	4
	Speech Elective	4	0	3
		14	16	17

Quarter 6

ELT-2403	Electronic Project*	1	6	3
ELT-3703	Opto-Electronics	2	4	3
ELT-376	Telecommunications	3	4	4
LET-314	Laser Technology	3	4	4
	Free Elective**	3	0	3
		12	18	17

Total credit hours	96
Total clock hours	2172

Approved Electives: BET-122, BET-314, CMT-280, DDT-101, ELT-105, INT-102.

*ELT 199 or ELT 298 may be substituted for ELT 2403.

**Must be taken outside the major department.

See the Course Descriptions section to obtain information about courses.

FARM AND RANCH MANAGEMENT

Associate of Applied Science Degree

The successful farmer will continue to be a key person in the U.S. economy, with the advantages of outdoor living and working independently that few people are privileged to enjoy. The agriculture industry needs trained managers and workers in its many areas, such as farms, ranches, feed services, government agencies and others. In this program, students will be made aware of the modern techniques essential to profitable operation.

In this program, students will learn to

- Feed and care for cattle on the TSTC-operated ranch.
- Plant, cultivate and harvest crops, including cotton, grain, corn and vegetables.
- Operate farm implements.
- Supervise agricultural operations.

Admission Requirements:

Students must complete the admission requirements listed under "Admissions and Records."

Degree Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
ENGL-1301	Composition I	4	0	3
BIOL-1408	General Biology I	4	4	4
FRM-102	Animal Husbandry	3	4	4
FRM-123	Intro. to Farm/Ranch Equip.	2	4	3
GT-1001	Orientation (or GT-1003)	1	0	1
		14	12	15
Quarter 2				
BIOL-1409	General Biology II	4	4	4
FRM-114	Animal Reproduction	3	3	4
FRM-118	Livestock Nutrition	3	4	4
FRM-116	Management of Records	2	4	3
		4	0	3
		16	15	18
Quarter 3				
FRM-133	Livestock Science	2	4	3
FRM-214	Livestock Production	3	4	4
FRM-224	Field Crop Production	3	4	4
MTH-106	Tech. Business Math.	2	3	3
		10	15	14

Quarter 4

FRM-223	Meat Sel., Eval. & Grading	2	4	3
FRM-234	Feedlot Production	2	4	3
FRM-243	Livestock & Plant Pests Mgmt.	2	4	3
FRM-302	Forage & Pasture Production	3	4	4
		9	16	13

Quarter 5

FRM-206	Animal Genetics	3	3	4
FRM-314	Intro. to Ag. Econ.	3	3	4
ACCT-2401	Principles of Accounting I	4	3	4
DDT-107	Basic Surveying	2	3	3
		4	0	3
		16	12	18

Quarter 6

FRM-354	Soil & Water Management	3	3	4
FRM-364	Agricultural Entomology	3	3	4
CHT-110	Ag. & Soil Chemistry	3	6	5
		9	12	13

Total credit hours	91
Total clock hours	1872

See the Course Descriptions section to obtain information about courses.

FOOD SERVICE TECHNOLOGY

Associate of Applied Science Degree

Employment in the field of food service technology is expected to increase rapidly due to population growth, higher family and personal incomes and more leisure time that will allow people to dine out more often. Professionals in this field must have a wide range of skill and expertise in preparing appetizing, appealing foods. This program emphasizes perfection of cooking techniques through specialized training in planning and preparation.

In this program, students will learn to:

- Follow recipes using standard weight and measures, with kitchen tools and equipment.
- Prepare a wide variety of foods.
- Maintain quality in all cookery.

Admission Requirements:

Students must complete the admission requirements listed under "Admissions and Records."

Certificate Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
ENGL-1301	Composition I	4	0	3
GT-1001	Orientaiton (or GT-1003)	1	0	1
FST-102	Food Preparation I	2	12	5
FST-105	Food Serv. Equip. & Planning	2	3	3
FST-108	Saniation & Safety	3	0	3
		12	15	15
Quarter 2				
SOCI-1301	Introduction to Sociology	4	0	3
SPCH-1318	Interpersonal Communication	4	0	3
FST-109	Food Production & Planning	3	0	3
FST-110	Hotel, Restaurant & Inst. Meats	2	3	3
FST-111	Food Preparation II	2	12	5
FST-113	Basic Nutrition	3	0	3
		18	15	20
Quarter 3				
GT-230	Principles of Management	3	0	3
PSYC-2301	General Psychology	4	0	3
FST-107	Nutrition & Menu Planning	3	0	3
FST-203	Food Service I	1	8	3
FST-209	Food Purchasing & Handling	3	0	3
FST-308	Food Service Records	3	0	3
		17	8	18

Quarter 4				
MTH-106	Technical Business Math	2	3	3
FST-202	Baking	2	6	4
FST-305	Quantity Procedures	1	12	5
		5	21	12

Quarter 5				
FST-340	Professional Techniques for Cooks/Caterers	2	3	3
GT-262	World of Work	2	0	2
GT-1013	Computers & Technology (or IMT-1013)	2	3	3
FST-304	Food Service Management	2	8	4
	Elective*	3	0	3
		11	14	15

Quarter 6				
BIOL-1408	General Biology I	4	4	4
FST-312	Special Projects & Field Work	2	9	5
FST-314	Specialized Food Preparation	2	8	4
		8	21	13

Total credit hours	93
Total clock hours	1980

*Must be outside the major department.

See the Course Description section to obtain information about courses.

HEALTH INFORMATION TECHNOLOGY (FORMERLY MEDICAL RECORDS TECHNOLOGY) Associate of Applied Science Degree

It is expected that the demand for well trained medical record technicians will continue to exceed the supply. This demand is related to the health care needs of a growing and aging population, the development of technologically sophisticated medicine and increased scrutiny of health care costs and quality of care by health providers. Medical record technicians collect and maintain health information, such as patient records and statistics. Supervisory functions are also stressed for the needs of overlooking the work of clerks and transcriptionists in compiling, coding and storing medical records.

In this program, students will develop skills to:

- Use standardized medical record procedures, including formatting, numbering and filing systems.
- Demonstrate proficiency in the directed practice seminar.

Admission Requirements:

In addition to admission requirements listed under "Admissions and Records," it is recommended that a student have maintained a 2.0 grade point average on a 4.0 scale in high school or previous post-secondary studies, or have a score of 45 on the GED.

An interview with the program chairman is also required.

Clinical Entry Requirements:

Before enrolling in clinical or cooperative study, a student in any of the allied health programs must have on file with the TSTC nurse all of the following materials:

1. Results of a prescribed physical examination.
2. Proof of required immunizations.
3. Proof of liability insurance of at least \$1 million (available through TSTC).

Degree Plan		Lec	Lab	Cr
Course	Title			
Quarter 1				
ENGL-1301	Composition I	4	0	3
SOCL-1301	Introduction to Sociology	4	0	3
GT-1001	Orientation (or GT-1003)	1	0	1
MIS-1410	Medical Terminology	2	3	3
AOT-1112	Keyboarding IA	1	4	2
BIOL-2401	Anatomy & Physiology I	4	4	4
		16	11	16
Quarter 2				
BIOL-2402	Anatomy & Physiology II	4	4	4
ENGL-1302	Composition II	4	0	3
HIT-205	Health Info. Systems I	3	3	4
IMT-1013	Intro. to Computer App.	2	4	3
MTH-106	Technical Business Math.	2	3	3
		15	14	17
Quarter 3				
	Gen. Ed. (Math/Science Elective)	4	0	3
	Gen. Ed. Elective	4	0	3
HIT-305	Health Info. Systems II	3	3	4
HIT-265	Pathophysiology I	5	0	5
HIT-215	Basic Pharmacology	3	0	3
		19	3	18
Quarter 4				
SPCH-1311	Intro. to Speech Comm.	4	0	3
HIT-266	Pathophysiology II	5	0	5
HIT-340	Basic Coding	3	3	4
HIT-308	Directed Practice I	1	8	3
IMT-1425	Computers in Health Care	3	3	4
		16	14	19
Quarter 5				
HIT-325	Quality Assurance	3	3	4
HIT-355	Advanced Coding	3	3	4
HIT-255	Medical Legal Aspects	3	2	4
HIT-360	Medical Record Management	3	3	4
	Free Elective*	3	0	3
		15	11	19
Quarter 6				
HIT-356	Ambulatory Coding	3	3	4
HIT-345	Health Care Statistics	2	3	3
HIT-365	Directed Practice II	0	20	5
		5	26	12
	Total credit hours	101		
	Total clock hours	1980		

*Must be outside the major department.

See the Course Descriptions section to obtain more information about courses.

INFORMATION MANAGEMENT TECHNOLOGY

Associate of Applied Science Degree

As the business world moves into the "information age," the combination of technology and information in modern businesses requires trained technicians to effectively utilize automated office technology and increase business productivity and profit. Students in this program will become involved with all facets of business computers. Emphasis will be placed on installing and troubleshooting systems, training other employees on software, researching and recommending new equipment, networking and many other areas of business computer usage.

Course topics include:

- Installing and maintaining software programs.
- Mainframe and microcomputer operating systems and communications.
- Components and integration of automated work stations; networking.
- Training techniques; professional services.
- Usage of software, including word processing, data bases and spreadsheets.

Admission Requirements:

Students must complete the admission requirements listed under "Admissions and Records."

Degree Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
MATH-1314	College Algebra	4	0	3
IMT-1013	Intro. to Computer Applications	2	4	3
GT-1001	Orientation (or GT-1003)	1	0	1
AOT-1112	Keyboarding IA	1	4	2
CST-1214	Program Design & Development I	2	6	4
ACCT-2401	Principles of Accounting I	4	3	4
		14	17	17
Quarter 2				
ENGL-1301	Composition I	4	0	3
IMT-1213	Microcomputer Operating Sys.	2	4	3
IMT-2513	Data Base Applications I	2	4	3
IMT-105	Computer Concepts	3	0	3
ACCT-2402	Principles of Accounting II	4	3	4
AOT-1512	Word Processing IA	1	4	2
		16	15	18

Quarter 3

ECON-2301	Principles of Economics	4	0	3
AOT-1612	Word Processing IB	1	4	2
IMT-2213	Electronic Spreadsheets	2	4	3
IMT-2613	Data Base Applications II	2	4	3
IMT-370	Local Area Networks	2	3	3
IMT-2412	Management Applications	1	4	2
		12	19	16

Quarter 4

General Education Elective		4	0	3
IMT-126	Data Storage and Retrieval	1	4	2
IMT-216	Software Integration	2	4	3
IMT-390	Network Applications & Mgmt.	1	4	2
IMT-230	Intro. to Mainframe Oper. Syst.	2	4	3
		10	16	13

Quarter 5

General Education Elective		4	0	3
TCM-150	Training Techniques	4	0	4
CMT-280	Computer Systems Repair	2	3	3
IMT-316	Software Installation	1	4	2
IMT-350	Work Station Components	2	4	3
IMT-395	Adv. Communication Techniques	1	4	2
		14	15	17

Quarter 6

GT-230	Principles of Management	3	0	3
GT-262	World of Work	2	0	2
CMT-303	Computer Peripherals	2	6	4
IMT-380	Integrated Work Stations	1	4	2
IMT-375	Mainframe/Microcomputer Comm.	2	4	3
		10	14	14

Total credit hours	95
Total clock hours	2064

See the Course Descriptions section to obtain information about courses.

INSTRUMENTATION TECHNOLOGY

Associate of Applied Science Degree

The growth of new technological and scientific advances will create a great need for instrumentation in the future. Instrumentation technicians test, install, repair, inspect, maintain and aid in the development of complex instruments used to measure and record changes in the environment. Some instrumentation technicians operate laboratory equipment that produces or records the effects on test instruments of actual or simulated conditions, such as vibration, stress, temperature, humidity, pressure, altitude and acceleration.

In this program, students will learn to:

- Measure and control the process parameters of flow, level, pressure and temperature.
- Apply, maintain and repair various types of electronic, pneumatic, computer and mechanical equipment using a variety of test equipment.

Admission Requirements:

In addition to admission requirements listed under "Admissions and Records," completion of one unit of high school algebra is recommended.

Degree Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
GT-1001	Orientation (or GT-1003)	1	0	1
EEC-1004	DC Circuits	2	8	4
IMT-1013	Intro. to Comp. Applications (or CST-205)	2	4	3
MATH-1314	College Algebra	4	0	3
ENGL-1301	Composition I	4	0	3
	Approved Elective	1	4	2
		14	16	16
Quarter 2				
EEC-1104	AC Circuits	2	8	4
	Approved Elective	1	4	2
MATH-1316	Plane Trigonometry	4	0	3
EEC-1203	Digital Fundamentals	2	4	3
INT-115	Industrial Electricity & Motors	2	4	3
		11	20	15
Quarter 3				
CMT-1603	Microprocessors I	2	4	3
EEC-1404	Semiconductors I	2	8	4
CHEM-1411	General Chemistry I	4	4	4
INT-215	Industrial Electrical Controls	2	4	3
	SPCH Elective	4	0	3
		14	20	17

Quarter 4

INT-202	Measurements & Calibrations	2	4	3
INT-214	Pneumatic Systems	2	4	3
PHYS-1401	College Physics	4	4	4
EEC-1503	Semiconductors II	2	4	3
	Elective*	2	3	3
		12	19	16

Quarter 5

INT-2103	Control Loops	2	4	3
INT-3103	Pressure Vacuum & Level Control	2	4	3
INT-2303	Flow Measure. & Calculations	2	4	3
INT-2003	Unit Operations	2	4	3
INT-305	Temperature Control	3	4	4
		11	20	16

Quarter 6

INT-315	Safety Interlock Systems	2	4	3
INT-3313	Analytical Instrumentation	3	4	4
PSYC-2301	General Psychology	4	0	3
ELT-321	Industrial Power Supplies	3	4	4
INT-3205	Computer Based Process Control	3	4	4
		15	16	18

Total credit hours	98
Total clock hours	2256

Approved Electives: BET-122, BET-314, CMT-280, DDT-101, ELT-105, INT-102, INT 1100.

*Must be outside the major department.

See the Course Descriptions section to obtain information about courses.

NURSING-ADN

Cooperative Associate of Applied Science Degree

Texas State Technical College-Harlingen is participating with Valley Baptist Medical Center and Texas Southmost College in partnership with the University of Texas at Brownsville, in offering the RN Nursing program to mid and upper Valley residents.

Students completing academic courses at TSTC then apply to TSC, and, upon acceptance, take NURS courses at Valley Baptist Medical Center, taught by TSC faculty.

Upon completion of the ADN program, an Associate of Applied Science Degree is awarded by Texas Southmost College and the student may sit for the Registered Nurse (RN) test administered by the State Board of Nurse Examiners.

These academic courses completed at TSTC are also transferable to other Texas public universities under the common course numbering system of the Texas Higher Education Coordinating Board.

TSTC is proud to be a participant in the Associate Degree Nursing program, which reflects the cooperation of the Texas Higher Education Coordinating Board, Texas Southmost College, Texas State Technical College, Valley Baptist Medical Center, and the Valley community.

The following academic courses may be taken at TSTC for transfer credit:

Course	Title	Lec	Lab	Cr
BIOL-2401	Anatomy & Physiology I	4	4	4
BIOL-2402	Anatomy & Physiology II	4	4	4
BIOL-2421	Microbiology	4	4	4
PSYC-2301	General Psychology	4	0	3
PSYC-2314	Life Span Growth & Development	4	0	3
ENGL-1301	Composition I	4	0	3
SPCH-1318	Interpersonal Communication	4	0	3

Six hours of non-developmental course electives

IMT-1013 may be taken as an elective when approved by TSC.

WELDING TECHNOLOGY

Associate of Applied Science Degree

The variety of jobs available to welding technicians is increasing due to the number of new inventions and technical advances using a wide variety of metal alloys and nonmetallic materials that can be joined through the welding process. Students in this program will develop knowledge of metal properties and the different welding techniques used to join metals.

In this program, students will learn to:

Use various welding processes, including oxyacetylene gas, arc, gas tungsten arc, gas metal arc and other sophisticated processes.

Perform welding in all positions, with fillet and groove welds.

Plan, design and fabricate welded projects.

Admission Requirements:

Students must meet the admission requirements listed under "Admissions and Records."

Quarter 4

Gen. Ed. Elective	4	0	3
PHYS-1315 Physical Science	4	0	3
WLT-2714 Pipe Welding II	2	6	4
WLT-2514 Gas Tungsten Arc Welding	1	9	4
GT-262 World of Work	2	0	2
	13	15	16

Quarter 5

Gen. Ed. Elective	4	0	3
WLT-301 Testing and Inspection	3	9	6
WLT-302 Weld. Process. & Power Sources	3	4	4
	10	13	13

Quarter 6

SPCH-1318 Interpersonal Communication (or SPCH-2333 or SPCH-1311)	4	0	3
WLT-303 Welding Metallurgy	2	9	5
WLT-304 Adv. Welding Processes	2	9	5
Elective*	2	3	3
	10	21	16

Total credit hours	92
Total clock hours	2100

*Must be outside the major department.

See the Course Descriptions section to obtain information about courses.

Degree Plan

Course Title	Lec	Lab	Cr
Quarter 1			
ENGL-1301 Composition I	4	0	3
WLT-1013 Oxyacetylene Welding & Cutting	1	6	3
WLT-1116 Arc Welding (or WLT-1112 & 1113)	2	12	6
GT-1001 Orientation (or GT-1003)	1	0	1
DDT-112 Blueprint Reading	1	3	2
	9	21	15
Quarter 2			
WLT-1619 Structural Welding (or WLT-1512, 1514 & 1613)	3	18	9
DDT-116 Basic Drafting	2	3	3
MTH-105 Technical Mathematics	2	3	3
	7	24	15
Quarter 3			
Gen. Ed. (Social/Behav. Sci.)	4	0	3
WLT-2114 Gas Metal Arc Welding	2	6	4
WLT-2614 Pipe Welding I	2	6	4
WLT-2016 Job Planning, Layout & Fabrication	3	9	6
	11	21	17

Certificate Programs



Texas State
Technical College

Certificate Programs

General Information

Skill development programs offered at TSTC award Certificates of Completion. These programs are designed to teach students specific skills needed for entry-level jobs. This is accomplished through specialized training in the particular skills area.

Generally, three-fourths of the courses are in the student's major program of study, with the remainder in general education support courses. The majority of the student's class time is spent in the laboratory or field, applying the skills he or she has learned in class. This emphasis on hands-on experience is the major strength of TSTC's skill development programs.

General Requirements

The following information is an outline of requirements for the Certificate of Completion, including requirements listed under the Admissions and Records and Scholastic Regulations sections of this catalog.

1. Completion of admission requirements.
2. Completion of curriculum requirements.
 - a. Students must complete the minimum credit hours as specified for the program of study.
 - b. The curriculum will generally include general education and support courses.
3. Meet all scholastic guidelines and specific program requirements. Additional information is included in the Scholastic Regulation section of this catalog. Some programs have specific requirements. More information is listed in the respective program of study description.
4. Discharge of all financial obligations to TSTC.
5. Completion of an Application for Graduation and payment of graduation fees.

AIR CONDITIONING AND REFRIGERATION TECHNOLOGY

Certificate of Completion

Employment in the field of air conditioning and refrigeration technology is expected to increase as more homes and commercial and industrial facilities are built. Installations of energy-saving heating and air conditioning systems in older homes and buildings will also contribute to an increase in employment. This is a wide career field dealing with the technology of refrigeration, air conditioning and heating techniques in homes, work environments, transportation, food preservation and health.

Admission Requirements:

In addition to admission requirements listed under "Admissions and Records," it is recommended that the student have completed two units of high school math and one unit of high school science, preferably physics or chemistry.

Certificate Plan

Course Title	Lec	Lab	Cr
Quarter 1			
ACT-1214 Shop & Safety Skills	2	6	4
ACT-1313 Air Conditioning Electrical	1	6	3
ACT-1114 Principles of Refrigeration	2	6	4
GT-1001 Orientation (or GT 1003)	1	0	1
DDT-116 Basic Drafting	2	3	3
	8	21	15

Quarter 2

ACT-150 Domestic A/C/Window A/C	2	4	3
ACT-1614 Duct Fabrication	2	6	4
ACT-1513 Residential Heating	2	4	3
ACT-1414 Heat Pumps & Cooling Syst.	2	6	4
	8	20	14

Quarter 3

TCM-108 Technical Communications	2	3	3
ACT-2114 Commercial Refrigeration	2	6	4
ACT-2214 Automatic Control Systems	3	3	4
ACT-190 Perform Contracted Jobs I	1	3	2
MTH-105 Technical Mathematics	2	3	3
	10	18	16

Quarter 4

GT-112 Human Relations	2	3	3
ACT-200 Year-Round Systems	2	4	3
ACT-250 Commercial Air Condition.	2	4	3
ACT-270 Perform Contracted Jobs II	2	6	4
GT-262 World of Work	2	0	2
	10	17	15

EXIT POINT: REFRIGERATION MECHANIC
60 credit hours; 1344 clock hours

Quarter 5

ACT-300 Hydronics	3	3	4
ACT-310 Pneumatics	3	3	4
ACT-320 Gas Service Problems	2	3	3
ACT-330 Perform Contracted Jobs III	1	6	3
	9	15	14

Quarter 6

ACT-350 Heat/Cool & Ref. Load Calc.	3	3	4
ACT-360 Duct Design	3	3	4
ACT-380 Psychometrics	3	3	4
ACT-390 Perform Contract. Jobs IV	1	3	2
	10	12	14

Total credit hours 88
Total clock hours 1896

See the Course Descriptions section to obtain information about courses.

AUTO BODY REPAIR

Certificate of Completion

As the number of motor vehicles in operation increases with the population, so will the number of cars damaged in accidents. This, in combination with new, lighter weight automotive designs which are prone to greater collision damage than older, heavier designs, should continue to create a need for trained auto body repairmen. These repairmen must have a broad knowledge of auto construction and repair techniques using a wide variety of tools and machines.

In this program, students will learn to:

- Perform major collision repairs.
- Gauge and measure.
- Repair plastic and fiberglass.
- Replace glass and accessories.
- Apply learned skills in the laboratory.

Admission Requirements:

Students must complete the admission requirements as listed under "Admissions and Records."

Certificate Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
GT-1001	Orientation (or GT-1003)	1	0	1
AUB-1214	Basic Paint	2	8	4
AUB-1114	Basic Body	2	8	4
AUB-1313	Intro. to Collision Repair	2	4	3
WLT-103	Intro. to Combination Welding	1	4	2
		8	24	14
Quarter 2				
AUB-108	Body Repair I	1	6	3
AUB-110	Refinishing I	1	6	3
AUB-112	Suspension & Accessory Replacement	2	6	4
MTH-103	Applied Technical Math	2	3	3
GT-205	Shop Safety	2	0	2
		8	21	15
Quarter 3				
AUB-201	Refinishing II	2	9	5
AUB-202	Body Repair II	2	9	5
AUB-205	Collision Electrical Repair	1	3	2
AUB-207	Collision Mechanical Repair	1	3	2
		6	24	14

Quarter 4

AUB-208	Collision Estimating	1	3	2
AUB-212	Selective Skill Development	1	10	4
AUB-215	Shop Organization & Mgmt.	3	2	4
GT-112	Human Relations	2	3	3
TCM-108	Technical Communications	2	3	3
		9	21	16

Total credit hours	59
Total clock hours	1452

See the Course Descriptions section for more information on about courses.

AUTOMATED OFFICE TECHNOLOGY

Certificate of Completion

Secretary, Word Processing Clerk, Receptionist

Secretaries are employed in all types of organizations and make up one of the largest occupations of the U.S. economy. Secretaries are responsible for communication and organization in business offices, with growing emphasis on automated equipment, such as computers. Receptionists greet office callers and often perform other duties.

Word processing clerks function on a level between the receptionist and the secretary and use computers to prepare letters, memos and reports.

Admission Requirements:

Students must complete the admissions requirements listed under "Admissions and Records."

Certificate Plan; Secretary

Course	Title	Lec	Lab	Cr
Quarter 1				
GT-1003	Introduction to College Life	0	3	1
AOT-1114	Keyboarding I (or AOT-1112 & AOT 1212)	2	8	4
BS-152	Business English I (or TCM 112 or ENGL 1301*)	2	3	3
BS-180	Basic Business Computer Training (or IMT-1013 or COSC 1301*)	2	3	3
BS-260	Human Relations for Business (or GT-112 or PSYC 2301*)	2	3	3
		8	20	14

Quarter 2

AOT-2111	Records Management	2	3	3
AOT-1313	Proofreading	2	3	3
AOT-2213	Office Procedures	2	4	3
AOT-1214	Keyboarding II	2	8	4
AOT-1320	Word Processing I	2	3	3
		10	21	16

Quarter 3

MTH-106	Technical Business Mathematics (or MATH-1314*)	2	3	3
AOT-1330	Word Processing II	2	3	3
AOT-3112	Machine Transcription	2	3	3
AOT-2210	Beginning SpeedWriting	2	3	3
AOT-2512	Typing Applications (or AOT-3212)	1	4	2
	Approved Elective	1	4	2
		10	20	16

Quarter 4

IMT-118	Intro. to Desktop Publishing	2	4	3
AOT-2201	Electronic Spreadsheets I	2	3	3
AOT-2220	Intermediate SpeedWriting	2	3	3
AOT-3316	Advanced Machine Transcription	2	3	3
SPCH-1311	Introduction to Speech Communications*	4	0	3
AOT-2301	Office Automation Strategies	2	3	3
		14	16	18

EXIT POINT: WORD PROCESSING CLERK

64 credit hours; 1428 clock hours.

Quarter 5

AOT-3230	Advanced SpeedWriting	2	3	3
AOT-3213	Advanced Office Procedures	2	3	3
IMT-2513	Database Applications I	2	4	3
AOT-3352	Advanced Office Technology	2	3	3
	Approved Elective	2	4	3
		10	17	15

Total Credit Hours	79
Total Clock Hours	1752

Approved Electives: IMT-370, AOT-199-Co-op for AOT, AOT-299, AOT-298, AOT-398, ACCT-2401-, AOT 2612.

See the Course Descriptions section to obtain information about courses.

AUTOMOTIVE TECHNICIAN

Certificate of Completion

Job opportunities in the automotive industry are expected to be plentiful for those who complete training programs in technical schools. The increasing use of electronics in an expanding variety of automotive components requires students in this program to master a wide scope of repairs and adjustments. Today's technician must be ready to handle a more diversified range of repairs than the mechanic of yesteryear.

In this program, students will learn to:

- Diagnose and repair problems in all systems of the automobile.
- Apply skills in the laboratory using up-to-date automotive equipment.

Admission Requirements:

Students must complete the admission requirements listed under "Admissions and Records."

Certificate Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
GT-1001	Orientation (or GT-1003)	1	0	1
AUT-1012	Introduction to Auto. Mechanics and Safety	2	0	2
AUT-1124	Electrical Systems I	2	6	4
AUT-2625	Engines	3	8	5
TCM-108	Technical Communications	2	3	3
		10	17	15
Quarter 2				
AUT-1524	Electrical Systems II	2	6	4
AUT-1526	Power Trains	4	8	6
AUT-1623	Electrical Accessories	2	3	3
GT-112	Human Relations	2	3	3
		10	20	16
Quarter 3				
AUT-1025	Carburetion & Fuel Systems	3	6	5
AUT-2024	Automatic Transmissions I	2	8	4
MTH-103	Applied Technical Math	2	3	3
		7	17	12
Quarter 4				
AUT-2025	Steering, Suspension & Alignment	3	8	5
AUT-2525	Automatic Transmissions II	3	8	5
AUT-3125	Engine Performance	3	8	5
		9	24	15

Quarter 5

AUT-2712	Shop Supervision & Mgmt.	2	0	2
AUT-3025	Computerized Engine Controls	4	4	5
AUT-3525	Heating & Air Cond.	3	6	5
	Approved Elective	2	0	2
		11	10	14

Quarter 6

AUT-3222	Auto. Tech. Certification	2	0	2
AUT-3534	Body & Chassis Comp. Syst.	3	3	4
AUT-3524	Automotive Brakes	2	8	4
	Approved Elective	2	0	3
		9	11	13

Total credit hours	85
Total clock hours	1860

Approved Electives: AUT-199, AUT-298, AUT-299, AUT-1113, AUT-1132, BS-180, WLT-103.

See the Course Descriptions section to obtain information about courses.

AVIATION MAINTENANCE TECHNOLOGY

Certificate of Completion-Airframe

Aviation maintenance technicians are a vital part of the aerospace industry workforce, a group comprised of airframe and powerplant mechanics, aircraft mechanics, sheetmetal workers and aircraft electricians. These skilled workers are employed by aircraft manufacturers, contract maintenance operations, corporate aviation operations, general aviation operations and regional and major airlines. In the last several years, the aerospace industry in Texas has expanded through contract maintenance and is expected to continue to grow.

Admission Requirements:

Students must complete admission requirements listed under "Admission and Records."

Degree Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
GT-1001	Orientation (or GT-1003)	1	0	1
MTH-109	Mathematics for Aviation Mech.	3	2	4
TCM-108	Technical Communications	2	3	3
DDT-108	Blueprint Reading	1	3	2
GT-112	Human Relations	2	3	3
AER-1021	Aircraft Safety & Orientation	1	0	1
AER-1123	Federal Aviation Regulations	2	3	3
AER-1522	Ground Operation & Servicing	1	2	2
		13	16	19

Quarter 2

PHY-102	Applied Physics	2	3	3
AER-1023	Shop Practices	1	8	3
AER-1122	Weight and Balance	1	2	2
AER-1524	Basic Aircraft Electricity	2	8	4
		6	21	12

Quarter 3

AER-3027	Sheet Metal Structures	4	9	7
WLT-104	Aircraft Welding	2	3	3
IMT-1013	Intro. to Computer Applications	2	4	3
		8	16	13

Quarter 4

AER-3123	Instruments Navigation, & Comm.	2	3	3
AER-3124	Aircraft Auxiliary & Fuel Systems	2	8	4
AER-3126	Aircraft Electrical Systems	3	9	6
		7	20	13

Quarter 5

AER-3022	Wood, Fabric and Finishing	1	4	2
AER-3026	Hydraulic, Pneumatic & Landing Gear Systems	3	9	6
AER-3127	Assembly, Rigging & Inspection	4	9	7
		8	22	15

Total credit hours	72
Total clock hours	1644

See the Course Descriptions section for more information about courses.

This program is pending approval by the Federal Aviation Administration

AVIATION MAINTENANCE TECHNOLOGY

Certificate of Completion-Powerplant

Aviation maintenance technicians are a vital part of the aerospace industry workforce, a group comprised of airframe and powerplant mechanics, aircraft mechanics, sheetmetal workers and aircraft electricians. These skilled workers are employed by aircraft manufacturers, contract maintenance operations, corporate aviation operations, general aviation operations and regional and major airlines. In the last several years, the aerospace industry in Texas has expanded through contract maintenance and is expected to continue to grow.

Admission Requirements:

Students must complete admission requirements listed under "Admission and Records."

Degree Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
GT-1001	Orientation (or GT-1003)	1	0	1
MTH-109	Mathematics for Aviation Mech.	3	2	4
TCM-108	Technical Communications	2	3	3
DDT-108	Blueprint Reading	1	3	2
AER-1021	Aircraft Safety & Orientation	1	0	1
AER-1123	Federal Aviation Regulations	2	3	3
AER-1522	Ground Operation & Servicing	1	2	2
		11	13	16
Quarter 2				
PHY-102	Applied Physics	2	3	3
AER-1023	Shop Practices	1	8	3
AER-1122	Weight and Balance	1	2	2
AER-1524	Basic Aircraft Electricity	2	8	4
		6	21	12
Quarter 3				
AER-2023	Engine Auxiliary Systems	2	4	3
AER-2025	Fuel Metering and Induction	3	6	5
AER-2325	Powerplant Electrical Systems	2	9	5
		7	19	13
Quarter 4				
AER-2123	Gas Turbine Engines	2	4	3
AER-2124	Reciprocating Engines	2	8	4
AER-2125	Engine Overhaul	2	12	5
		6	24	12

Quarter 5

AER-2225	Powerplant Analysis & Inspection	2	12	5
GT-112	Human Relations	2	3	3
AER-2022	Propellers and Control Systems	1	4	2
IMT-1013	Intro. to Computer Applications	2	4	3
		7	23	13

Total credit hours	66
Total clock hours	1644

See the Course Descriptions section to obtain information about courses.

This program is pending approval by Federal Aviation Administration.

BUILDING CONSTRUCTION TECHNOLOGY

Certificate of Completion

Anticipated growth in business investment for new factories, office buildings, stores, hotels, power plants and other structures should continue to stimulate the demand for workers in the building construction field. Maintenance and repair work on all types of structures will also contribute to this demand. Workers in this field build, repair and modernize all types of buildings, including homes, offices and commercial structures.

In this program, students will learn to:

- Prepare building sites, construct foundations and finish structures.
- Frame and finish various building systems.
- Apply learned skills through construction of residential buildings.

Admission Requirements:

Students must complete the admissions requirements listed under "Admissions and Records."

Certificate Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
BCT-106	Bldg. Constr. Surveying	1	3	2
BCT-302	Constuction. Safety & Health	3	0	3
BCT-104	Blueprint Reading & Specs.I	2	3	3
BCT-110	Foundations	2	6	4
BCT-102	Building Construction Materials	2	2	3
GT-1001	Orientation (or GT-1003)	1	0	1
		11	14	16

Quarter 2

TCM-108	Technical Communications	2	3	3
BCT-112	Properties of Concrete	2	2	3
BCT-114	Principles of Building Design	2	2	3
BCT-204	Carpentry Tools & Framing I	3	6	5
MTH-103	Applied Technical Math	2	3	3
		11	16	17

Quarter 3

BCT-132	Carpentry Tools & Framing II	3	3	4
BCT-202	Estimating I	2	2	3
BCT-210	Constuction Materials & Technique2	2	2	3
GT-112	Human Relations	2	3	3
	Approved Elective	2	3	3
		11	13	16

Quarter 4

BCT-133	Roofing	1	3	2
BCT-214	Interior & Exterior Finish	3	9	6
BCT-221	Brick and Block Laying	3	3	4
BCT-225	Finish Carpentry	3	4	4
		10	19	16

EXIT POINT: BUILDING CONSTRUCTION CRAFTSMAN

65 credit hours, 1260 clock hours

Quarter 5

MTH-105	Technical Math	2	3	3
BCT-371	Estimating II	2	3	3
BCT-373	Structural Materials Problems	2	3	3
BCT-354	Blueprint Reading & Specs. II	2	3	3
		8	12	12

Quarter 6

BCT-306	Construction Inspection	2	3	3
BCT-351	Structural Steel	3	4	4
BCT-352	Structural Concrete	3	6	5
		8	13	12

Total credit hours

89

Total clock hours

1752

Approved Electives: ACT-1114, BUSS-104, BUSS-115, DDT-1503, ECON-104, GT-207, GT-230, GT-1013, IMT-105, IMT-1013, MATH-134, PHY-131, PHYS-104, WLT-103.

See the Course Descriptions section to obtain information about courses.

BUSINESS SKILLS

Certificate of Completion

Computerized Bookkeeping and General Business Clerk

The amount of data that must be entered into computer systems is tremendous and growing. Because this occupational field is exceptionally large, replacement needs produce many openings each year. Data entry clerks are responsible for processing and transmitting information within a business organization. Their duties include typing, inputting and retrieving computer data, answering telephones and operating various types of office equipment. Bookkeepers maintain records of business accounts and transactions, prepare periodic financial statements and calculate employee pay-rolls.

Admission Requirements:

Students must complete the admission requirements listed under "Admissions and Records."

Certificate Plan-General Business Clerk

Course Title	Lec	Lab	Cr
Quarter 1			
GT-1001 Orientation (or GT-1003)	1	0	1
AOT-1112 Keyboarding IA	1	4	2
BS-104 Reading Improve. for Bus.	2	3	3
BS-152 Business English I	2	3	3
BS-150 Spelling & Vocabulary	2	3	3
BS-180 Basic Bus. Computer Train.	2	3	3
BS-106 General Math for Business	2	3	3
	12	19	18
Quarter 2			
AOT-1212 Keyboarding IB	1	4	2
BS-130 Business Mathematics	2	3	3
BS-153 Business English II	2	3	3
BS-167 Introduction to Bookkeeping	2	3	3
BS-147 Data Entry I	2	3	3
BS-148 Introduction to Word Processing	2	3	3
	11	19	17
Quarter 3			
BS-154 Business Correspondence I	2	3	3
BS-170 Calculating Machines	2	3	3
BS-245 Office Simulation	2	3	3
BS-260 Human Relations for Bus.	2	3	3
BS-145 Business Office Procedures	2	3	3
BS-220 Introduction to Spreadsheets	2	3	3
	12	18	18
Total Credit Hours	53		
Total Clock Hours	1092		

Certificate Plan-Computerized Bookkeeping

Course Title	Lec	Lab	Cr
Quarter 1			
GT-1001 Orientation (or GT-1003)	1	0	1
AOT-1112 Keyboarding IA	1	4	2
BS-104 Reading Improve. for Business	2	3	3
BS-152 Business English I	2	3	3
BS-150 Spelling & Vocabulary	2	3	3
BS-180 Basic Bus. Computer Train.	2	3	3
BS-106 General Math for Business	2	3	3
	12	19	18
Quarter 2			
AOT-1212 Keyboarding IB	1	4	2
BS-130 Business Mathematics	2	3	3
BS-153 Business English II	2	3	3
BS-167 Introduction to Bookkeeping	2	3	3
BS-147 Data Entry I	2	3	3
BS-170 Calculating Machines	2	3	3
	11	19	17
Quarter 3			
BS-220 Introduction to Spreadsheets	2	3	3
BS-154 Business Correspondence I	2	3	3
BS-168 Computerized Bookkeeping I	4	6	6
BS-242 Payroll Accounting	2	3	3
BS-260 Human Relations for Business	2	3	3
	12	18	18
Quarter 4			
BS-145 Business Office Procedures	2	3	3
BS-148 Introduction to Word Processing	2	3	3
BS-169 Computerized Bookkeeping II	4	6	6
BS-245 Office Simulation	2	3	3
BS-243 Small Business Management	2	3	3
	12	18	18
Total Credit Hours	71		
Total Clock Hours	1452		

Approved substitute courses for General Business Clerk

- AOT 1320 Word Processing I for BS 148
- AOT 2213 Office Procedures for BS 145
- BS 168 Computerized Bookkeeping I for BS 145 & BS 148
- ACCT 2401 Principles of Accounting I for BS 167

Approved substitute courses for Computerized Bookkeeping

- AOT 1320 Word Processing I for BS 148
- AOT 2212 Office Procedures for BS 145
- ACCT 2401 Principles of Accounting I for BS 167
- ACCT 2401 Principles of Accounting II for BS 168
- GT 230 Principles of Management for BS 243

See the Course Descriptions section to obtain more information about courses.

COMPUTER SERVICES OPTION

Certificate of Completion

As the economy grows and advances, more computer equipment will be used and more technicians will be needed to install and maintain it. Computer maintenance technicians keep computer hardware and related electronic equipment of all types in good working order. This includes installing computerized equipment, testing for problems when equipment fails and making repairs when necessary.

This Certificate program is designed to serve students who work during the day and who have only evenings to devote to formal education

In this program, students will learn to:

- Analyze DC and AC circuits.
- Construct and troubleshoot digital systems.
- Apply electronic skills to various computer systems and components.

Admission Requirements:

In addition to admission requirements listed under "Admissions and Records," completion of one unit of high school algebra is recommended.

Degree Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
MTH-103	Applied Technical Math	2	3	3
IMT-1013	Intro. to Computer Applications	2	4	3
AMT-125	Industrial Electricity	3	4	4
		7	11	10
Quarter 2				
CMT-280	Computer Systems Repair	2	3	3
CMT-1603	Microprocessors I	2	4	3
EEC-1203	Digital Electronics	2	4	3
		6	11	9

Quarter 3

CMT-2304	Computer Peripherals	2	6	4
CMT-2204	Computer System Maintenance I	2	6	4
		4	12	8

Quarter 4

IMT-370	Local Area Networks	2	3	3
CMT-3304	Data Communications	2	4	3
TCM-108	Technical Communications	2	3	3
		6	10	9

See the Course Descriptions section to obtain information about courses.

DENTAL LABORATORY TECHNOLOGY

Certificate of Completion

The level of public awareness of dental health and preventive dentistry has increased significantly in recent years. Because of this fact, and relatively widespread dental insurance coverage, it is expected that the demand for dental laboratory technicians will continue to grow fairly rapidly. Dental laboratory technicians make dentures, retainers, crowns, inlays, bridges and orthodontic appliances using written instructions from dentists. This field is an exacting science as well as an art which requires attention to precise details.

In this program, students will learn to:

- Work with wire, plaster, porcelain, wax, plastic, gold and other metals.
- Use specialized tools to carve and shape these materials.
- Match color and placement of teeth for natural look and comfortable fit.

Admission Requirements:

In addition to admission requirements listed under "Admissions and Records," students are required to complete special tests in manual dexterity, dimensional abilities and use of tools. Applicants will be notified of testing dates.

Certificate Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
TCM-108	Technical Communications	2	3	3
GT-1001	Orientation (or GT-1003)	1	0	1
DLT-101	Dental Anat./Tooth Morph.	2	6	4
DLT-105	Remov. Part. Dent. Tech. I	2	4	3
DLT-107	Complete Dent. Tech. I	2	4	3
DLT-109	Fixed Restorative Tech. I	2	4	3
		11	21	17

Quarter 2

MTH-105	Technical Mathematics	2	3	3
DLT-103	Dental Materials	1	6	3
DLT-201	Remov. Part. Dent. Tech. II	2	4	3
DLT-203	Complete Dent. Tech. II	2	4	3
DLT-205	Fixed Restorative Tech. II	2	4	3
		9	21	15

Quarter 3

DLT-207	Intro. Occl./Mandib. Motion	1	0	1
DLT-209	Remov. Part. Dent. Tech. III	2	4	3
DLT-211	Complete Denture Tech. III	2	4	3
DLT-213	Fixed Restorative Tech. III	2	4	3
GT-205	Shop Safety	2	0	2
		9	12	12

Quarter 4

GT-112	Human Relations	2	3	3
DLT-301	Remov. Part. Dent. Tech. IV	2	4	3
DLT-303	Complete Denture Tech. IV	2	4	3
DLT-313	Dental Ceramics I	2	4	3
IMT-1013	Intro. to Computer Applications	2	4	3
		10	19	15

Quarter 5

DLT-307	Remov. Part. Dent. Tech. V	2	4	3
DLT-309	Complete Denture Tech. V	2	4	3
DLT-311	Fixed Restorative Tech. IV	2	4	3
DLT-317	Dental Ceramics II	2	4	3
DLT-315	Intro. to Ortho. Procedures	2	4	3
		10	20	15

Quarter 6

DLT-390	Practical Laboratory Procedures	3	9	6
DLT-399	Special Projects	3	9	6
		6	18	12

Total credit hours	86
Total clock hours	1992

See the Course Descriptions section to obtain information about courses.

ELECTRONICS SERVICING

Certificate of Completion

Employment in the electronics servicing field is expected to increase in response to the growing number of television sets, video games, disk players, radios, phonographs, tape recorders, and other home entertainment products in use. The field of electronics servicing includes installation and repair of electronic equipment. Service technicians are generally responsible for diagnosing and repairing malfunctions using electronic testing equipment and hand tools.

In this program, students will learn to:

- Use electronic instruments and hand tools.
- Troubleshoot electronic equipment in the on-campus laboratory.
- Apply learned skills on a variety of pieces of equipment.

Admission Requirements:

Students must complete the admission requirements as listed under "Admissions and Records."

Certificate Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
ELS-1001	Introduction to Electronics	0	2	1
ELS-1101	Electronic Components I	2	4	3
ELS-2101	Radio Servicing I	2	6	4
ELS-1301	Electronic Servicing	2	8	4
GT-1001	Orientation (or GT-1003)	1	0	1
MTH-103	Applied Technical Math.	2	3	3
		9	23	16

Quarter 2

ELS-1201	Solid-State Devices	2	4	3
ELS-2001	Electronic Components II	2	6	4
ELS-2201	Radio Servicing II	2	4	3
ELS-2301	Introduction to Digital	1	3	2
ELS-2401	Adv. Radio Troubleshooting	1	3	2
		8	20	14

Quarter 3

ELS-114	Basic Television Systems	2	4	3
ELS-206	Electronic Servicing Pract. I	2	4	3
	Approved Elective	2	3	3
GT-112	Human Relations	2	3	3
CMT-280	Computer Systems Repair	2	3	3
		10	17	15

Quarter 4

ELS-204	Television Systems	2	6	4
ELS-216	Video Cassette Repair	2	4	3
	Approved Elective	2	3	3
	Approved Elective	2	3	3
GT-262	World of Work	2	0	2
TCM-104	Reading Improvement	2	3	3
		12	19	18

Approved Electives: ELS-207, ELS-218, ELS-222, ELS-261, ELS-270.

Total credit hours	63
Total clock hours	1416

See the Course Descriptions section to obtain information about courses.

EMERGENCY MEDICAL TECHNOLOGY

Certificate of Completion

There is a crucial need by the health service industry in South Texas for trained Emergency Medical Technicians. Emergency Medical Technicians are trained in subjects covering emergency treatment, clinical observation, ambulance operations and mobile intensive care. Students successfully completing the program will be prepared to take the Texas Department of Health tests for certification emergency to aid the injured. Emergency Medical Technicians are employed by private and public EMS organizations, including police and fire departments and ambulance services.

Admission Requirements:

Students must complete the admission requirements listed under "Admissions and Records."

Clinical Entry Requirements:

Before enrolling in clinical or cooperative study, a student in any of the allied health programs must have on file with the TSTC Nurse all of the following material.

1. Results of a prescribed physical examination.
2. Proof of required immunizations.
3. Proof of liability insurance of at least \$1 million (available through TSTC).

Certificate Plan		Lec	Lab	Cr
Course	Title			
Quarter 1				
EMS-111	Emergency Medical Tech.	8	0	8
EMS-116	EMT-Skills Lab	1	5	2
EMS-117	EMT-Clinical Rotation	0	5	1
EMS-118	EMT-Ambulance	0	3	1
GT-1001	Orientation (or GT-1003)	1	0	1
		10	13	13

EXIT POINT: EMT /BASIC
276 clock hours; 13 credit hours

Quarter 2				
EMS-121	EMT-Special Skills	2	0	2
EMS-122	Human Sys. & Pat. Assmt.	1	0	1
EMS-123	Shock & Fluid Therapy	1	0	1
EMS-124	Respiratory System	2	0	2
EMS-126	Spec. Skills-Skills Lab	2	4	3
EMS-127	Spec. Skills-Clin. Rot.	1	7	3
EMS-128	Spec. Skills-Mobile Intensive Care Unit	0	6	2
MTH-106	Technical Business Math.	2	3	3
		11	17	18

EXIT POINT: EMT/INTERMEDIATE
648 clock hours; 30 credit hours

Quarter 3				
EMS-125	Obstetric/Gyn. Emergencies	1	0	1
EMS-131	General Pharmacology	1	3	2
EMS-132	Soft Tissue Injuries	1	0	1
EMS-133	Pediatrics & Neo. Trans.	1	0	1
EMS-134	Emergency Care of the Emotionally Disturbed	1	0	1
EMS-136	Paramedic-Skills Lab/Basic	0	5	1
EMS-137	Paramedic-Clin. Rot./Basic	0	5	1
EMS-138	Paramedic-Mobile Intensive Care Unit/Basic	0	3	1
EMS-211	Musculoskeletal Injuries	1	0	1
TCM-108	Technical Communications	2	3	3
		8	19	13

Quarter 4				
EMS-141	Cardiovascular System	2	2	3
EMS-142	Central Nervous System	1	0	1
EMS-143	Medical Emergencies	1	0	1
EMS-146	Paramedic-Skills Lab/Inter.	1	5	2
EMS-147	Paramedic-Clin. Rot./Inter.	1	5	2
EMS-148	Paramedic-Mobile Intensive Care Unit/Intermediate	0	4	1
PHYS-1315	Physical Science	4	0	3
GT-1113	Interpersonal Relations in the Medical Field	2	3	3
		12	19	16

Quarter 5				
EMS-135	Medical Terminology	3	0	3
EMS-212	Extrication/Rescue Techniques	1	2	2
EMS-213	Telemetry & Communications	1	0	1
EMS-214	Defensive Driving-EMS	1	2	2
EMS-216	Paramedic-Skills Lab/Adv.	1	6	3
EMS-217	Paramedic-Clin. Rot./Adv.	1	4	2
EMS-218	Paramedic-Mobile Intensive Care Unit/Advanced	0	4	1
GT-262	World of Work	2	0	2
		10	18	16

EXIT POINT: EMT/PARAMEDIC

Total clock hours 1680
Total credit hours 75

FARM AND RANCH MANAGEMENT

Certificate of Completion

The successful farmer will continue to be a key person in the U.S. economy, with the advantages of outdoor living and working independently that few people are privileged to enjoy. The agriculture industry needs trained workers in its many areas, such as farms, ranches, feed services, government agencies and others. Employees must have proper training in order to help the various areas operate profitably.

In this program, students will learn to:

- Operate farm equipment.
- Feed and care for cattle on the TSTC-operated ranch.
- Plant, cultivate and harvest crops, such as cotton, grain, corn and vegetables.

Admission Requirements:

Students must complete the admissions requirements listed under "Admissions and Records."

Certificate Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
TCM-108	Technical Communications	2	3	3
BIOL-105	General Biology I	4	4	4
FRM-102	Animal Husbandry	3	4	4
FRM-123	Intro. to Farm & Ranch Equip	2	4	3
GT-1001	Orientation (or GT-1003)	1	0	1
		12	15	15
Quarter 2				
GT-112	Human Relations	2	3	3
FRM-114	Animal Reproduction	3	3	4
FRM-118	Livestock Nutrition	3	4	4
FRM-116	Management of Records	2	4	3
		10	14	14
Quarter 3				
FRM-133	Livestock Science	2	4	3
FRM-214	Livestock Production	3	4	4
FRM-224	Field Crop Production	3	4	4
MTH-106	Technical Business Math	2	3	3
		10	15	14
Quarter 4				
FRM-223	Meat Sel., Eval. & Grading	2	4	3
FRM-234	Feedlot Production	2	4	3
FRM-243	Livestock & Plant Pests Mgnt.	2	4	3
FRM-302	Forage & Pasture Production	3	4	4
		9	16	13

EXIT POINT: FARM AND RANCH OPERATIONS

57 credit hours, 1212 clock hours.

Quarter 5

MTH-105	Technical Mathematics	2	3	3
FRM-206	Animal Genetics	3	3	4
FRM-314	Intro. to Agricultural Econ.	3	3	4
ACCT-2401	Principles of Accounting I	4	3	4
DDT-107	Basic Surveying	2	3	3
		14	15	18

Quarter 6

FRM-364	Agricultural Entomology	3	3	4
FRM-354	Soil & Water Management	3	3	4
CHT-110	Agriculture & Soil Chemistry	3	6	5
		9	12	13

Total credit hours	87
Total clock hours	1812

See the Course Descriptions section to obtain information about

FOOD SERVICE TECHNOLOGY

Certificate of Completion

Employment in the field of food service technology is expected to increase rapidly due to population growth, higher family and personal incomes and more leisure time that will allow people to dine out more often. Professionals in this field must have a wide range of skill and expertise in preparing appetizing, appealing foods. This program emphasizes perfection of cooking techniques through specialized training in planning and preparation. This is a six-quarter Certificate program with a four-quarter exit point as a food service specialist.

In this program, students will learn to:

- Follow recipes using standard weight and measures, with kitchen tools and equipment.
- Prepare a wide variety of foods.
- Maintain quality in all cookery.

Admission Requirements:

Students must complete the admission requirements listed under "Admissions and Records."

Certificate Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
TCM-108	Technical Communications	2	3	3
FST-105	Food Serv. Equip. & Plan.	2	3	3
FST-108	Sanitation and Safety	3	0	3
FST-102	Food Preparation I	2	12	5
GT-1001	Orientation (or GT-1003)	1	0	1
		10	18	15
Quarter 2				
GT-112	Human Relations	2	3	3
FST-113	Basic Nutrition	3	0	3
FST-109	Food Production & Plan.	3	0	3
FST-110	Hotel, Restaurant & Inst. Meats	2	3	3
FST-111	Food Preparation II	2	12	5
		12	18	17
Quarter 3				
FST-107	Nutrition & Menu Plan.	3	0	3
FST-203	Food Service I	1	8	3
FST-209	Food Purchasing & Hand.	3	0	3
FST-308	Food Service Records	3	0	3
GT-230	Principles of Management	3	0	3
		13	8	15

Quarter 4

FST-202	Baking	2	6	4
FST-305	Quantity Procedures	1	12	5
MTH-106	Technical Business Math.	2	3	3
		5	21	12

EXIT POINT: FOOD SERVICE SPECIALIST

59 credit hours, 1260 clock hours

Quarter 5

FST-340	Professional Techniques for Cooks/Caterers	2	3	3
GT-262	World of Work	2	0	2
GT-1013	Computers & Technology (or IMT-1013)	2	3	3
FST-304	Food Service Management	2	8	4
		8	14	12

Quarter 6

FST-312	Special Projects & Field Work	2	9	5
FST-314	Specialized Food Preparation	2	8	4
	Gen. Education Elective	3	0	3
		7	17	12

Total credit hours

83

Total clock hours

1812

See the Course Description section to obtain information about courses.

INDUSTRIAL MAINTENANCE MECHANICS

Certificate of Completion

In an effort to remain competitive, U.S. firms will continue to introduce more automated production machinery, which should create a demand for industrial maintenance mechanics to keep machinery in good working order. Industrial maintenance mechanics involves troubleshooting and maintaining equipment, and systems that deliver services for manufacturing processes and other industrial needs. These systems include hydraulic, pneumatic, hydronic, electrical, electronic and mechanical devices used in industries such as hospitals, hotels and manufacturing areas.

In this program, students will learn to:

- Understand systems of power, water and other services in industry.
- Apply concepts to a variety of industrial systems.
- Transfer learned skills from one specific system to other fields.

Admission Requirements:

Students must complete the admission requirements listed under "Admissions and Records."

Certificate Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
GT-1001	Orientation (or GT-1003)	1	0	1
AMT-114	Mechanical Skills	2	6	4
MTH-103	Applied Technical Mathematics	2	3	3
IMM-130	Industrial Relations & Safety	2	4	3
AMT-125	Industrial Electricity	3	4	4
DDT-112	Blueprint Reading	1	3	2
		11	20	17

Second Quarter

IMM-103	Mechanical Power Transmission	2	3	3
IMM-204	Rigging and Conveying Systems	2	3	3
IMM-160	Mechanical Piping	2	4	3
TCM-108	Technical Communications	2	3	3
AMT-130	Introduction to Motor Controls	3	4	4
		11	17	16

Quarter 3

ACT-1114	Principles of Refrigeration	2	6	4
IMM-105	Pumps and Compressors	2	3	3
IMM-101	Industrial Hydraulic Systems	3	3	4
AMT-205	Motor Control Systems	4	4	5
		11	16	16

Quarter 4

IMM-201	Industrial Fluid Systems	3	3	4
INT-214	Pneumatic Systems	2	4	3
GT-112	Human Relations	2	3	3
WLT-103	Introduction to Combination Welding	1	4	2
AMT-345	Programmable Logic Controllers	3	4	4
		11	18	16

Total credit hours	65
Total clock hours	1380

See the Course Descriptions section to obtain information about courses.

INFORMATION MANAGEMENT TECHNOLOGY

Certificate of Completion

As the business world moves into the "information age," the combination of technology and information in modern businesses requires trained technicians to effectively utilize automated office technology and increase business productivity and profit. Students in this program will become involved with all facets of business computers. Emphasis will be placed on installing and troubleshooting systems, training other employees on software, researching and recommending new equipment, networking and many other areas of business computer usage. This is a six-quarter Certificate program with a four-quarter exit point as an information, management specialist.

Course topics include:

- Installing software programs.
- Microcomputer operating systems and communications.
- Components and integration of automated work stations; networking.
- Professional services.
- Usage of software, including word processing, data bases and spreadsheets.

Admission Requirements:

Students must complete the admission requirements listed under "Admissions and Records."

Certificate Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
MTH-105	Technical Mathematics	2	3	3
IMT-1013	Intro. to Computer Applications	2	4	3
GT-1001	Orientation (or GT-1003)	1	0	1
AOT-1112	Keyboarding IA	1	4	2
CST-1214	Program Design & Development I	2	6	4
GT-207	Ind. Accounting I(or ACCT-2401)	2	3	3
		10	20	16
Quarter 2				
TCM-108	Technical Communications	2	3	3
IMT-1213	Microcomputer Operating Syst.	2	4	3
IMT-2513	Data Base Applications I	2	4	3
IMT-105	Computer Concepts	3	0	3
AOT-1512	Word Processing IA	1	4	2
GT-209	Ind. Accounting II(or ACCT-2402)	2	3	3
		12	18	17

Quarter 3

IMT-2213	Electronic Spreadsheets	2	4	3
IMT-2613	Data Base Applications II	2	4	3
IMT-2412	Management Applications	1	4	2
IMT-370	Local Area Networks	2	3	3
AOT-1612	Word Processing IB	1	4	2
		8	19	13

Quarter 4

GT-112	Human Relations	2	3	3
IMT-390	Network App. & Management	1	4	2
IMT-126	Data Storage and Retrieval	1	4	2
IMT-230	Intro. to Mainframe Oper. Syst.	2	4	3
IMT-216	Software Integration	2	4	3
		8	19	13

EXIT POINT: INFORMATION MANAGEMENT SPECIALIST;
59 credit hours, 1368 clock hours.

Quarter 5

IMT-316	Software Installation	1	4	2
IMT-350	Work Station Components	2	4	3
IMT-395	Advanced Communication Tech.	1	4	2
CMT-280	Computer Systems Repair	2	3	3
TCM-150	Training Techniques	4	0	4
		10	15	14

Quarter 6

IMT-380	Integrated Work Stations	1	4	2
IMT-375	Mainframe/Microcomp. Comm.	2	4	3
GT-230	Principles of Management	3	0	3
GT-262	World of Work	2	0	2
CMT-303	Computer Peripherals	2	6	4
		10	14	14

Total credit hours	87
Total clock hours	1956

See the Course Descriptions section to obtain information about courses.

MACHINING TECHNOLOGY

Certificate of Completion

As the economy expands, along with the demand for goods that traditionally have had machined metal parts, the current level of employment for machinists will be maintained. Machinists set up and operate all types of metalworking machines to transform metal into precise shapes and sizes. Machinists produce these parts by following a blueprint, selecting the proper material and cutting tools, performing the required machining operations and finally inspecting and measuring the finished part to a high level of accuracy.

In this program, students will learn to:

Operate engine lathes, horizontal and vertical milling machines, drilling machines and grinders and computer numerically controlled machines.

Use precision lay-out equipment and measuring equipment.

Admission Requirements:

Students must complete the admission requirements listed under "Admissions and Records."

Certificate Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
MGT-1103	Precision Tools & Measurements	2	4	3
MGT-1204	Bench Work & Layout	2	8	4
MGT-1304	Basic Shop Machines	2	6	4
GT-1001	Orientation (or GT-1003)	1	0	1
MTH-103	Applied Technical Math	2	3	3
		9	21	15
Quarter 2				
MGT-1404	Basic Lathe	2	8	4
MGT-1504	Basic Milling Machines	2	8	4
MGT-2011	Applied Shop Math	2	0	2
MGT-303	SPC for Machinists	1	2	2
GT-262	World of Work	2	0	2
DDT-112	Blueprint Reading	1	3	2
		10	21	16

Quarter 3

MGT-2104	Advanced Lathe	2	8	4
MGT-2204	Adv. Milling Machines	2	8	4
MGT-2303	Introduction to CNC	2	4	3
TCM-104	Reading Improvement	2	3	3
		8	23	14

Quarter 4

MGT-2406	Advanced CNC	3	9	6
MGT-211	Heat Treatment and Precision Grinding	2	8	4
MGT-3012	Parts Inspection	1	3	2
DDT-201	Adv. Blueprint Reading	3	2	4
		9	22	16

Total credit hours	61
Total clock hours	1476

See the Course Descriptions section to obtain information about courses.

MEDICAL INFORMATION SPECIALIST/ TRANSCRIPTIONIST (FORMERLY MEDICAL RECORD CLERK) *Certificate of Completion*

It is expected that the demand for well-trained medical record clerks will continue to exceed the supply. This need is related to the health care needs of a growing and aging population, the development of technologically sophisticated medicine and increased scrutiny of health care costs and quality of care by health providers. Medical record clerks collect and maintain health information, such as patient records and statistics.

In this program, students learn to:

- Assemble, analyze, code and index medical records.
- Transcribe medical reports and other data.
- Apply skills during clinical practice.

The student must maintain a numerical average of 78 or better in each required MRC and AHC course to receive the Certificate of Completion.

Admission Requirements:

In addition to admission requirements listed under "Admissions and Records," it is recommended that students have completed one year of high school typing. Manual dexterity for typing and handling records, files and other documents is also necessary. An interview with the program chairman is required.

Clinical Entry Requirements:

Before enrolling in clinical or cooperative study, a student in any of the allied health programs must have on file with the TSTC nurse all of the following materials:

1. Results of a prescribed physical examination.
2. Proof of required immunizations.
3. Proof of liability insurance of at least \$1 million.(available through TSTC).

Certificate Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
GT-1001	Orientation (GT-1003)	1	0	1
MIS-1410	Medical Terminology	2	3	3
MIS-140	Filing	1	3	2
BIOL-2401	Anatomy & Physiology I	4	4	4
MTH-106	Technical Business Mathematics	2	3	3
BS-150	Spelling & Vocabulary	2	3	3
		12	16	16
Quarter 2				
MIS-111	Medical Typing	1	4	2
TCM-112	Technical Communications for Business	2	3	3
BIOL-2402	Anatomy & Physiology II	4	4	4
HIT-265	Pathophysiology I	5	0	5
IMT-1013	Intro. to Computer Applications	2	4	3
		14	15	17

Medical Information Transcriptionist Option

Quarter 3				
HIT-266	Pathophysiology II	5	0	5
HIT-205	Health Information Systems I	3	3	4
BS-155	Business Correspondence II	2	3	3
MIS-103	Medical Transcribing I	2	8	4
MIS-2211	Advanced Medical Terminology	1	4	2
		13	18	18
Quarter 4				
MIS-203	Medical Transcribing II	2	8	4
GT-1113	Interpersonal Relations in the Medical Field	2	3	3
MIS-201	Clinical Experience	1	14	6
		5	25	13
Total Credit Hours		64		
Total Clock Hours		1416		

Medical Information Specialist Option

Quarter 3				
HIT-266	Pathophysiology II	5	0	5
HIT-205	Health Information Systems I	3	3	4
BS-155	Business Correspondence II	2	3	3
MIS-115	Medical Office Procedures	1	4	2
HIT-345	Health Care Statistics	2	3	3
		13	13	17
Quarter 4				
GT-1113	Interpersonal Relations in the Medical Field	2	3	3
MIS-2103	Coding Systems in Health Care	2	3	3
MIS-240	Medical Manager	1	4	2
MIS-201	Clinical Experience	1	14	6
		6	24	14
Total Credit Hours		64		
Total Clock Hours		1356		

See the Course Descriptions section to obtain information about courses.

NURSE ASSISTANT

Certificate of Completion

Employment of nurse assistants is expected to grow at an extremely rapid rate in response to the long-term care needs of a growing and aging population. Modern medical technology has also increased the need to provide care to those who never fully recover. Nurse assistants provide a variety of support services for other health-care professionals. Their primary responsibility is to provide basic bedside care, such as bathing, making beds, taking vital signs, feeding, serving trays, answering calls and ambulating patients.

In this program, students will learn to:

- Provide bedside nursing care.
- Work with nurses, doctors and other coworkers.
- Apply skills in clinical practice at a hospital or nursing home.

The student must maintain a numerical average of 78 or better in each Nurse Assistant curriculum course to graduate from the program and receive the Certificate of Completion.

Admission Requirements:

In addition to admission requirements listed under "Admissions and Records," the applicant must complete an interview with the program chairman.

Clinical Entry Requirements:

Before enrolling in clinical study, a student in any of the allied health programs must have on file with the TSTC nurse all of the following materials:

1. Results of a prescribed physical examination.
2. Proof of required immunizations.
3. Proof of liability insurance of at least \$1 million (available through TSTC).

Certificate Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
NSA-102	Introduction to Long Term Care	3	8	5
NSA-103	Body Systems	2	3	3
GT-1003	Orientation (or GT-1001)	1	0	1
GT-1113	Interpersonal Relations in the Medical Field	2	3	3
TCM-104	Reading Improvement	2	3	3
		10	17	15

EXIT POINT: LONG TERM CARE NURSE ASSISTANT
15 credit hours, 324 clock hours.

Quarter 2

NSA-206	Patient Care	2	4	3
NSA-208	Clinical Experience 1	1	6	5
TCM-108	Technical Communications	2	3	3
MTH-103	Applied Technical Math	2	3	3
		7	16	14

Total credit hours 29
Total clock hours 720

See the Course Descriptions section to obtain information about courses.

SURGICAL TECHNICIAN

Certificate of Completion

Employment for surgical technicians is expected to increase at a rapid rate in response to the rising number of surgical procedures due to changes in the size and age structure of the population, technological advances that permit surgery for more conditions than ever before and widespread insurance coverage for surgical care. The surgical technician is a member of the operating room team, primarily responsible for setting up instruments, supplies and equipment for the operative procedure. The technician's duties also include gowning and gloving the surgeon, assisting in draping the patient and passing instruments to the surgeon.

In this program, students will learn to:

- Prepare the operating room by performing proper setup with instruments, supplies and equipment according to surgical procedure.
- Scrub and assist in the operating room by performing in actual operations under the supervision of the surgeon and registered nurse.
- Assist registered nurses with circulating duties that fall within their job description.

Admission Requirements:

In addition to admission requirements listed under "Admissions and Records," applicants must complete an interview with the program chairman.

Clinical Entry Requirements:

Before enrolling in clinical or cooperative study, a student in any of the allied health programs must have on file all of the following material:

1. Results of prescribed physical examination.
2. Proof of required immunizations.
3. Proof of liability insurance of at least \$1 million (available through TSTC).

Certificate Plan		Lec	Lab	Cr
Course	Title			
Quarter 1				
ST-100	Operating Room Protocol	1	0	1
GT-1001	Orientation (or GT-1003)	1	0	1
BIOL-2401	Anatomy & Physiology I	4	4	4
ST-130	Principles of Aseptic Tech.	2	4	3
MIS-1410	Medical Terminology	2	3	3
ST-115	Nursing Procedures	1	6	3
ST-131	Intro. to Basic Microbiology	2	3	3
		13	20	18
Quarter 2				
BIOL-2402	Anatomy & Physiology II	4	4	4
ST-120	Basic Oper. Room Skills I	2	8	4
ST-125	Patient Care in Oper. Room I	2	8	4
GT-1113	Interpersonal Relations in the Medical Field	2	3	3
		10	23	15
Quarter 3				
ST-202	Basic Oper. Room Skills II	2	8	4
ST-204	Patient Care in Oper. Room II	3	12	7
ST-195	Surgical Procedures I	2	3	3
		7	23	14
Quarter 4				
ST-200	Surgical Procedures II	6	24	14
		6	24	14
Total credit hours		61		
Total clock hours		1512		

See the Course Descriptions section to obtain information about courses.

WELDING TECHNOLOGY

Certificate of Completion

The variety of jobs available to welding technicians is increasing due to the number of new inventions and technical advances using a wide variety of metal alloys and nonmetallic materials that can be joined through the welding process. Students in this program will develop knowledge of metal properties and the different welding techniques used to join metals. This is six-quarter Certificate program with a fourth-quarter exit point as a combination welder.

In this program, students will learn to:

- Use various welding processes, including oxyacetylene gas, arc, gas tungsten arc, gas metal arc and other sophisticated processes.
- Perform welding in all positions, with fillet and groove welds.
- Plan, design and fabricate welded projects.

Admission Requirements:

Students must complete the admission requirements listed under "Admissions and Records."

Certificate Plan

Course	Title	Lec	Lab	Cr
Quarter 1				
TCM-108	Technical Communications	2	3	3
WLT-1013	Oxyacetylene Welding & Cutting	1	6	3
WLT-1116	Arc Welding (or WLT-1112 & 1113)	2	12	6
GT-1001	Orientation (or GT-1003)	1	0	1
DDT-112	Blueprint Reading	1	3	2
		7	24	15
Quarter 2				
WLT-1619	Structural Welding (or WLT-1512, 1514 & 1613)	3	18	9
DDT-116	Basic Drafting	2	3	3
MTH-105	Technical Mathematics	2	3	3
		7	24	15
Quarter 3				
WLT-2114	Gas Metal Arc Welding	2	6	4
WLT-2614	Pipe Welding I	2	6	4
WLT-2016	Job Planning, Layout & Fabr.	3	9	6
		7	21	14

Quarter 4

GT-112	Human Relations	2	3	3
WLT-2714	Pipe Welding II	2	6	4
WLT-2514	Gas Tungsten Arc Welding	1	9	4
GT-262	World of Work	2	0	2
		7	18	13

EXIT POINT: COMBINATION WELDER

57 credit hours, 1,380 clock hours

Quarter 5

	Elective	4	0	3
WLT-301	Testing and Inspection	3	9	6
WLT-302	Weld. Process. & Power Sources	3	4	4
		10	13	13

Quarter 6

WLT-303	Welding Metallurgy	2	9	5
WLT-304	Adv. Welding Processes	2	9	5
	Elective	2	3	3
		6	21	13

Total credit hours 83

Total clock hours 1980

Approved Electives: BS-167, GT-211, IMT-1013, MATH-104.

See the Course Descriptions section to obtain information about courses.

Special Instructional Programs



Texas State
Technical College

Special Instructional Programs

TSTC offers a variety of special programs to meet the particular training needs of individuals, organizations, businesses and industries. These programs are highly flexible in content, length and location and admission requirements vary.

Program Opportunities

Programs currently offered include Adult and Continuing Education, apprenticeship training, industrial plant start-up and expansion, conferences and workshops. TSTC also offers special training activities and contract training for industry.

New programs may be added or the scope of current programs expanded according to public demand. Each of the programs described in this section are coordinated through the Associate Dean of Economic Development and Industrial Training.

Conference Center

The Conference Center, which opened in January 1987, is a 15,000- square-foot multipurpose facility designed to accommodate workshops, seminars and other forms of specialized training. Training programs housed in the Short Course Center are coordinated with industrial foundations, chambers of commerce, business associations, private industry and the Lower Rio Grande Valley Development Council.

The Center is an important addition to TSTC's ability to provide specialized technical training programs. It also enhances the visibility of the Rio Grande Valley as a plant location site.

Industrial Start-Up and Expansion

TSTC provides special training programs specially designed to help meet the immediate manpower needs of industries considering plant locations in Texas. These new plant start-up and expansion training programs are offered in cooperation with the Texas Economic

Development Commission and the Texas Education Agency.

Most costs associated with training new employees are paid by the state, including payment of instructors, maintenance of special equipment loans for the training by industry and supplies used by students.

Special Training Activities

These activities include specialized training for industry, sponsored training for disadvantaged adults, training for sponsored foreign students and special training to meet requirements for licensing and certification of state agencies and associations.

TSTC pursues funds from private and government sources to provide special training activities.

Conferences and Workshops

TSTC cooperates with special-interest groups, businesses and industries in developing and offering conferences and workshops. Many conferences are designed to provide training for employees or to emphasize skills training. Most are less than a week in length.

Apprenticeship Training

TSTC offers special courses which satisfy apprenticeship training standards of various Joint Apprenticeship Training Committees, the Department of Labor and the Bureau of Apprenticeship and Training.

Admission is through approval of the respective Joint Apprenticeship Committees.

Adult and Continuing Education

Adult and Continuing Education courses are offered to those who want to increase business and professional skills or to acquire knowledge and skills in new areas. These non-credit courses are open to the public without any educational

requirements.

Class length, times, location and instructional material vary according to the subject. Most courses are offered during evening hours or on weekends and last from two to 16 weeks.

Courses may be offered upon request from a number of individuals or an organization.

Course schedules, which list class dates, times and fees, are published periodically by the Special Programs Office.

Registration is conducted in person at the Office of Admissions and Records.

Some of the courses currently offered include:

- Computerized Accounting
- Computer-Assisted Drafting
- Small Business Management
- Computer Literacy
- Word Processing
- Electronic Spreadsheets
- Defensive Driving
- Motorcycle Rider Course
- Real Estate Principles, Law,
Marketing, Appraisal, Math
- Statistical Process Control
- Conversational Spanish
- Medication Administration for Nurse
Assistants
- Social Rehabilitation and Activities
Director
- Floral Design—Silk and Fresh
- Cardiopulmonary Resuscitation
- Cooking
- Food Service Supervisor
- Food Service Sanitation and Safety
- Home Appliance Repair

Course Descriptions



**Texas State
Technical College**

Course Descriptions

Course descriptions are arranged alphabetically by department. In each section, courses are listed by course number. The series of numbers in parentheses following the course title indicate (1) lecture hours/week, (2) laboratory hours/week and (3) credit hours. More information on the program is included in the respective program of study section of this catalog.

Courses marked with asterisks () are Academic courses. Hours listed for all Academic courses are semester hours.

Accounting

***ACCT-2401 Principles of Accounting I (4-3-4)**

A consideration of financial accounting as it applied to sole proprietorships, partnerships, and corporations. Includes study of the financial accounting model; accounting for assets, liabilities, and owners equity; and financial statement of preparation and analysis. (Formerly BUSS 115)

***ACCT-2402 Principles of Accounting II (4-3-4)**

An overview of managerial accounting system. Includes accounting for departments and branches, financial analysis, production costs, budgeting, cost control, and responsibility accounting. Prerequisite: ACCT 2401. (Formerly BUSS 125)

Air Conditioning and Refrigeration

ACT-150 Domestic Refrigeration and Window Air Conditioning (2-4-3)

This course is a study of the domestic refrigerator and the window air conditioner. Students are prepared for successful troubleshooting, repair and maintenance of refrigerators and window units. The student will reinforce his study of circuitry and mechanical operation by repairing actual units in the laboratory. Prerequisites: ACT-1114, ACT-1313.

ACT-190 Perform Contracted Jobs I (1-3-2)

This course is designed to encourage the individual's initiative through completion of projects in the domestic refrigerator and window air conditioning field. The student will master the use of refrigeration and air conditioning equipment. The student will practice service and repair on projects to broaden his knowledge of electrical, refrigeration and mechanical problems encountered in the field.

ACT-199 Co-op for Air Conditioning & Refrigeration Technology (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

ACT-200 Year-Round Systems (2-4-3)

This course provides practical information and experience in combination of heating and cooling central units. These systems include gas, electric and the combination of electric and heat pumps. The special controls unique to these

particular units are studied in detail, however, emphasis is placed on installation and start-up for a complete residential system. Prerequisites: ACT-1214, ACT-1614.

ACT-250 Commercial Air Conditioning (2-4-3)

This course focuses on different applications of commercial air conditioning DX systems, water systems, air systems, water-to-air systems and heat pumps. Students learn to develop a preventive maintenance program on all large commercial A/C equipment and to keep all equipment in proper working order. The student will also demonstrate the ability to identify and troubleshoot auto heating and cooling, ventilation and humidity controls.

Prerequisites: ACT-1114, ACT-1313.

ACT-270 Perform Contracted Jobs II (2-6-4)

This course encourages the individual's initiative through the completion of projects in the domestic refrigerator, window air conditioners and other residential systems. The student will practice service and repairs on projects to broaden his knowledge of electrical, refrigeration and mechanical problems encountered in the field. Prerequisite: ACT-190.

ACT-298 Co-op for Air Conditioning Specialist (1-39-6)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study.

Prerequisite: Fifth-quarter standing.

ACT-299 Co-op for Air Conditioning & Refrigeration Technology (1-19-3)

In this course training is provided under the joint cooperation of TSTC and industry in the student's program of study.

Prerequisite: Fifth-quarter standing.

ACT-300 Hydronics (3-3-4)

Hydronics is probably the most popular application of large commercial air conditioning and heating. This course familiarizes the student with the science of heating and cooling with water. This is a study of boilers, chilled water distribution, zone controls and piping layouts, giving the student a background in the design of hydronic systems.

ACT-310 Pneumatics (3-3-4)

This course is a study of pneumatics and its application in control systems found in industrial refrigeration and air conditioning. Emphasis is placed on identification, terminology and function of pneumatic thermostats, actuators and switches. The student will operate and troubleshoot actual components in realistic simulation in the laboratory.

ACT-320 Gas Service Problems (2-3-3)

This course introduces the student to technicalities involved in sizing gas vents, combustion and ventilation air and gas piping. Techniques on troubleshooting gas systems are presented, covering natural and LP systems in residential and commercial heating.

*Academic Course-credit is in semester hours.

ACT-330 Perform Contracted Jobs III (1-6-3)

This course teaches students skills needed in service and repairs of residential and commercial air conditioning and heating systems. Live projects are serviced for practice and preparation of the students.

ACT-350 Heat/Cool and Refrigeration Load Calculations (3-3-4)

This course is the combined study of load calculations in residential and commercial air conditioning/refrigeration. Students employ the use of sling psychometrics in calculating heat loss, heat gain and heat transfer. Psychometric theory will be used to figure calculations on typical residential and medium-sized commercial structures. Load calculations are performed on existing structures or environments.

ACT-360 Duct Design (3-3-4)

This course combines residential and commercial duct design into the same unit of study. Air measurement, fan laws and duct sizing are the three main areas of emphasis. Students culminate the course with duct design of a planned or actual structure. Prerequisite : ACT-1614, ACT-200, ACT-250.

ACT-380 Psychometrics (3-3-4)

This course is a study of thermodynamic properties of air, including humidity control and variations of temperature, under controlled conditions, with a change in load or ambient conditions. Prerequisites: ACT-200, ACT-250, ACT-300.

ACT-390 Perform Contracted Jobs IV (1-3-2)

This course requires the student to perform routine maintenance, troubleshooting and repairs, if necessary, on commercial systems. The instructor will assign and assist the student in choosing a special project for this course.

ACT-398 Co-op for Air Conditioning and Refrigeration Technology (1-39-6)

A continuation of ACT 298. Training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: ACT-298.

ACT-1114 Principles of Refrigeration (2-6-4)

This course is an introduction to the physical, chemical and thermodynamic properties of the mechanical refrigeration cycle, emphasizing pressure, energy, heat and temperature. This course also covers ideal gases, saturated and superheated vapors, refrigerants and system components.

ACT-1214 Shop Safety and Skills (2-6-4)

This is a practical course concerning shop safety practices and basic refrigeration skills. Safety practices include proper handling of refrigerants, safe conduct with electricity and safe use of oxygen and acetylene equipment. Shop skills include proper use and care of hand tools and specialized test equipment. Other basic skills include extensive training in joining copper tubing and evacuation procedures.

ACT-1313 Air Conditioning Electrical (1-6-3)

This course covers electrical control circuits, essential electrical hardware and electrical testing instruments used in the air conditioning and refrigeration industry. Students construct, test and operate various basic circuits, using items of hardware, such as transformers, relays, switches, magnetic

starters, motor starting relays, capacitors, single- and three-phase motors, time delay relays and defrost clocks.

ACT-1414 Heat Pumps and Cooling Systems (2-6-4)

This course is a study into split system condensing units, packaging, cooling equipment and heat pump systems. Familiarization, installation, operation and servicing techniques will be stressed. Both mechanical and electrical control components and the interpretation of wiring diagrams are also covered. Prerequisite: ACT-1114.

ACT-1513 Residential Heating (2-4-3)

This course is a study of gas and electric heating furnaces found in residences and small commercial buildings. Students become familiar with these heating units and will gain skills in installation, operation, repair and servicing of this type of equipment. Both mechanical and control components of these devices are covered. Prerequisite: ACT-1313.

ACT-1614 Duct Fabrication (2-6-4)

This is a mechanical drawing course covering the layout of HVAC systems and related mechanical construction. The drawings indicate the location of HVAC equipment; supply makeup and return air ducts, ventilation fans, grills, registers and diffusers. The use of grooving tools is introduced to fabricate duct systems.

ACT-2114 Commercial Refrigeration (2-6-4)

In this course, students receive instruction in the sizing, operation, installation, troubleshooting and repair of commercial refrigeration equipment normally found in stores, restaurants and small food processing plants. Electrical schematic diagrams and control systems are studied, as well as the mechanical components. A unit on calculating refrigeration product loads is included.

ACT-2214 Automatic Control Systems (3-3-4)

This course is a study of the purpose and principles of automatic control as used in the measurement and control of measured and manipulated variables. The classification of systems—two position, floating and proportional, closed and open loop control, methods of measuring controlled variables and pneumatic control principles and systems are discussed, along with lab projects designed to give a practical understanding of the equipment.

Allied Health Core**AHC-210 Anatomy and Physiology for Allied Health Personnel (3-3-4)**

This course covers anatomy and physiology of the human body. The cell, its composition and function, cardiovascular system, urinary system, respiratory system, nervous system, gastrointestinal and metabolic system are treated in depth. Endocrinology and reproduction are discussed.

Arts***ARTS-1303 Art History I (4-0-3)**

An examination of painting, sculpture, architecture, and other arts from prehistoric through the ancient world.

***ARTS-1304 Art History II (4-0-3)**

An examination of painting, sculpture, architecture, and other arts from the Middle Ages to the present day.

***ARTS-2343 Studies in Contemporary Art (4-0-3)**

An in-depth study of current concerns and practices in the visual arts.

Auto Body Repair

AUB-108 Body Repair I (1-6-3)

This course is a study of body shell and frame alignment, coupled with sheet metal replacement and continued development of metalworking skill. Prerequisite: AUB-1114.

AUB-110 Refinishing I (1-6-3)

This course is a continued study of paint material with development of skills in application. Prerequisite: AUB-1214.

AUB-112 Suspension and Accessory Replacement (2-6-4)

This course is a detailed study of related collision damage and light maintenance skill development. Areas covered include front suspension, air conditioners, brakes and accessory replacement.

AUB-199 Co-op for Auto Body Repair (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Third-quarter standing.

AUB-201 Refinishing II (2-9-5)

This course focuses on a continuing development of painting skills with special emphasis on color mixing, color matching, texture and longevity, coupled with proper cleanup for pre-delivery inspection. Prerequisite: AUB-110.

AUB-202 Body Repair II (2-9-5)

This course furthers student comprehension of practical auto body repair techniques, while improving ability to work in an employee-employer atmosphere. Prerequisite: AUB-108.

AUB-205 Collision Electrical Repair (1-3-2)

This course is a basic study of auto electrical systems as related to collision damage, with emphasis on repair procedures.

AUB-207 Collision Mechanical Repair (1-3-2)

This course is a basic study of auto mechanical systems as related to collision damage, with emphasis on repair procedures.

AUB-208 Collision Estimating (1-3-2)

This course is a detailed study of procedures for determining accurate cost of repair and methods of presenting it to the customer or insurance company.

AUB-212 Selective Skill Development (1-10-4)

This course offers the opportunity to branch either to body repair or refinishing. Prerequisites: AUB-201, AUB-202.

AUB-215 Shop Organization and Management (3-2-4)

This course equips the student with basic knowledge of

organization and management, with emphasis on planning and maintenance as it relates to a vocational area.

AUB-298 Co-op for Auto Body Repair (1-39-6)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Third-quarter standing.

AUB-299 Co-op for Auto Body Repair (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Third-quarter standing.

AUB-398 Co-op for Auto Body Repairman (1-39-6)

A continuation of AUB 298. Training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: AUB 298.

AUB-1114 Basic Body (2-8-4)

This course is a general introduction into light damage analysis and products and equipment used in minor repairs. Students develop skills in minor plastic repair.

AUB-1214 Basic Paint (2-8-4)

This course is a general introduction to paints, preparation procedures and application techniques. Basic substrate preparation is stressed.

AUB-1313 Introduction to Collision Repair (2-4-3)

This course is an introduction to the collision repair industry with emphasis on safety, professionalism, basic measurements and the right to know. Part location and nomenclature are studied through the use of collision estimating equipment.

Automated Manufacturing Technology

AMT-114 Mechanical Skills (2-6-4)

This course covers basic mechanical skills, including tool sharpening, reading micrometers, using taps and dies, dial indicators, riveting, thread gauging, pipe fittings, flaring, compression fittings, lubrication, and maintaining industrial tools.

AMT-125 Industrial Electricity (3-4-4)

This course covers basic electrical circuits, schematic diagrams, wiring practices, measuring procedures and safety concerns. The digital multimeter is introduced in the lab, and emphasis is placed on practical concepts instead of mathematical analysis.

AMT-130 Introduction to Motor Controls (3-4-4)

This is an elementary course in electromechanical devices used to control motors. Course topics include tools, safety procedures, industrial symbols and basic control elements.

AMT-199 Co-Op for Automated Manufacturing Technology (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth Quarter Standing.

AMT-205 Motor Control Systems (4-4-5)

This course covers electrical motor wiring, start/stop station

**Academic Course-credit is in semester hours*

controls, magnetic motor starters, single and poly-phase motors, timers, reversal circuits and reduced voltage starter circuits. Prerequisite: AMT-130.

AMT-225 Troubleshooting Electronic Systems (3-4-4)
This course provides experience in isolating interface problems in analog and digital electronics systems. Emphasis is on hands-on exercises designed to stimulate creative problem solving. Prerequisite: AMT-250.

AMT-245 Fluid Power (3-4-4)
This course is an introduction to pneumatic/hydraulic technology. Pressure relationships, components and systems are presented. Emphasis is placed on reading schematics and maintaining fluid systems.

AMT-250 Industrial Electronics I (4-4-5)
Introduces both analog and digital electronic circuits. Emphasis is on components and their applications. Lab exercises are performed with both analog and digital test equipment. Prerequisite: AMT-125.

AMT-265 Industrial Instrumentation (3-4-4)
This course is an introduction to industrial sensors and data acquisition. Emphasis is placed on identifying sensor types and their failure mechanisms. Prerequisite: AMT-205.

AMT-280 Computer Aided Manufacturing (2-4-3)
Students will use skills learned in CAD and CNC courses to manufacture a variety of parts using Computer Aided Manufacturing (CAM) Software. Emphasis is on hands on applications. Fifth Quarter Standing.

AMT 298 Co-Op for Automated Manufacturing Technology (1-39-6)
In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth Quarter Standing.

AMT 299 Co-Op for Automated Manufacturing Technology (1-19-3)
In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth Quarter Standing.

AMT-300 Total Quality Management (1-4-2)
An introductory course to the principles and applications of total quality management as set forth by each of the three or four most recognized authorities in the field. The student will obtain the vocabulary, skills in the use of basic tools, and a working knowledge of major initiatives of total quality management. Prerequisite: Fourth quarter standing.

AMT-310 Industrial Computers (4-4-5)
This course is an introduction to industrial computer architecture, input/output, memory and peripherals. Emphasis is placed on system connectivity and schematic reading. Prerequisite: AMT-250.

AMT-315 Industrial Electronics II (4-4-5)
This is a further course in troubleshooting manufacturing equipment. Telecommunications and power interfaces are emphasized. Prerequisite: AMT-225.

AMT-320 Robotics (4-4-5)
This course covers classification, application, programming and repair of robotic equipment. Prerequisite: AMT-345.

AMT-330 Industrial Maintenance (3-4-4)
This course covers the basic aspect of maintenance, including preventive maintenance.

AMT-335 Computer Integrated Manufacturing (4-4-5)
This course covers the basics of computer integrated manufacturing technology. It includes design, drafting, production control, manufacturing, testing, vendor and financial integration concepts. Prerequisite: Fifth Quarter Standing.

AMT-345 Programmable Logic Controllers (3-4-4)
This course covers hands-on programming and application of programmable controllers in industry. Prerequisite: AMT-205.

AMT-370 Statistical Process Control (2-3-3)
This course covers standard deviation, sigma limits, cause and effect diagrams, flow control charts, pareto and scatter diagrams and the process of data collection and analysis. Emphasis is placed on operator understanding of process control via statistical methods. Prerequisite: Fifth Quarter Standing.

AMT- 398 Co-Op for Automated Manufacturing Technology (1-39-6)
A continuation of AMT-298. Training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: AMT-298.

Automated Office Technology

AOT-199 Co-op for Automated Office Technology (1-19-3)
In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

AOT-298 Co-op for Automated Office Technology (1-39-6)
In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

AOT-299 Co-op for Automated Office Technology (1-19-3)
In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

AOT-398 Co-op for Automated Office Technology (1-39-6)
A continuation of AOT-298. Training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: AOT-298.

AOT-1112 Keyboarding IA (1-4-2)
This course is the first entry-level keyboarding course and includes training in the mastery of the keyboard using the

touch with additional training in the care of machines and practice in writing letters and reports.

AOT-1114 Keyboarding I (2-8-4) or AOT-1112 and AOT-1212

This course is the entry-level keyboarding course and includes training in the mastery of the keyboard using the touch system, with training in care of machines and practice in writing letters and reports.

AOT-1212 Keyboarding IB (1-4-2)

This course is the second entry-level keyboarding course and includes training in the mastery of the keyboard using the touch system, with additional training in the care of machines and practice in writing letters and reports.

AOT-1214 Keyboarding II (2-8-4) or AOT-1312 and AOT-1412

This course is the intermediate keyboarding course, providing instruction in development of speed and accuracy, arrangement, letter styles, reports, footnotes and other related areas. Prerequisite: AOT-1114 or equivalent.

AOT-1310 Workplace Readiness (2-3-3)

In this course, students learn systematic approaches to problem-solving, teamwork, and self-management to enable them to adapt quickly and successfully to changing workplace demands and expectations. Prerequisite: None.

AOT-1312 Keyboarding IIA (1-4-2)

This course is the first intermediate keyboarding course and provides instruction in development of speed and accuracy, arrangement, letter styles, reports, footnotes and other related areas.

AOT-1313 Proofreading (2-3-3)

This course is designed to train the student in the fundamentals of proofreading for the most common types of errors and the standard marks for corrections. This course includes practice and application in improving this skill.

AOT-1320 Word Processing I (2-3-3)

This course is the first course providing training and skill development in word processing. It includes a study of terminology, job tasks, use of equipment and hands-on skill development on word processing. Prerequisite: Type 20 words per minute for 3 minutes with 3 or less errors.

AOT-1330 Word Processing II (2-3-3)

This course is the advanced course that provides training and skill development in word processing. It includes a study of the terminology, job tasks, use of equipment and hands-on development in word processing. Prerequisite: AOT 1320.

AOT-1340 Word Processing III (2-3-3)

Individualized, independent learning of an alternative word processing software utilizing research, quick references, and manuals. Prerequisite: AOT-1330

AOT-1412 Keyboarding IIB (1-4-2)

This course is the second intermediate keyboarding course and provides instruction in development of speed and

accuracy, arrangement, letter styles, reports, footnotes and other related areas.

AOT-2111 Records Management (2-3-3)

This course gives the student an understanding of the principles and practices of effective records management.

AOT-2201 Electronic Spreadsheets I (2-3-3)

Introduction of spreadsheets, construction and financial analysis using various software applications. Reports in graphics are included. Prerequisite: IMT 1013 or equivalent.

AOT 2210 Beginning SpeedWriting (2-3-3)

This course introduces the student to principles of shorthand including abbreviations; word beginnings and endings; and other elements using an alphabetic writing system. The student will develop the ability to take practiced material at 40-50 words a minute. Prerequisite: None

AOT-2213 Office Procedures (2-4-3)

In this course, students are trained in business and office skills with emphasis on classifying and organizing materials, filing, updating records, preparing reports and letters, receiving callers, using telephone and mail services and developing interpersonal relations. Prerequisite: AOT-1114 or equivalent.

AOT-2220 Intermediate SpeedWriting (2-3-3)

This course reinforces the principles of construction using an alphabetic writing system. The student will develop the ability to take practiced- and new-matter material at 60-70 words a minute. Communication skills are stressed. Prerequisite: AOT 2210.

AOT-2301 Office Automation Strategies (2-3-3)

This course will introduce student to researching and analyzing the need for office equipment and ultimately purchasing the equipment needed for small to large offices. Prerequisite: IMT-1013 or equivalent.

AOT-2315 Introduction to the Law Office (2-3-3)

This course introduces legal secretary majors to an overview of the law and the judicial system; legal terminology, legal research and the establishment of files and client information.

AOT-2317 Survey of Legal Specialization I (2-3-3)

This is the first half of the course that introduces legal secretary majors to the theories, principles and procedures of various selected areas of the law in preparation for document production. Prerequisite: AOT-2315.

AOT-2319 Legal Document Preparation I (2-3-3)

This is the first half of the course that applies theories, principles and procedures of the law to the preparation and production of various selected legal documents. Prerequisite or Corequisite: AOT 2317.

AOT-2512 Typing Applications (1-4-2)

This course stresses development of speed and accuracy while continuing to develop the student's knowledge of a variety of business formats. Prerequisite: AOT-1214 or equivalent.

AOT-2612 Keyboarding Speed and Accuracy Building (1-4-2)

This course stresses development of speed and accuracy, requiring an exit-level speed of 70 words per minute with no more than one error per minute. Prerequisite: AOT-1214 or equivalent

AOT-3112 Machine Transcription (2-3-3)

This course develops the student's ability to produce mailable copy from recorded material. Excellence in spelling, grammar, punctuation and proofreading are stressed. Prerequisite: AOT-1114 or equivalent and completion of TCM-112 with a letter grade of "C" or better, or approval of the program chairman.

AOT-3212 Business Correspondence (2-3-3)

This course gives the student experience and skills in composing a variety of business letters and memos, including correspondence related to the job interview process. Prerequisite: AOT-1114 or equivalent and completion of TCM-112 with a letter grade of "C" or better, or approval of the program chairman.

AOT-3213 Advanced Office Procedures (2-3-3)

This course trains students in designing and preparing business forms, calculating wages for payroll, preparing employer's tax forms 940 and 941, serving as a notary public and integrating office skills. Prerequisite: AOT-2213.

AOT-3230 Advanced SpeedWriting (2-3-3)

This course stresses excellence in new-matter dictation and equips students with the ability to take dictation at the rate of 80 words a minute. Mailability and communications skills are stressed. Prerequisite: AOT-2220.

AOT-3316 Advanced Machine Transcription (2-3-3)

This course is a continuation of AOT-3112 and further develops the student's ability to transcribe business forms and correspondence from recorded dictation. Mailability is stressed. Prerequisite: AOT-3112.

AOT-3317 Survey of Legal Specialization II (2-3-3)

This is the second half of the course that introduces legal secretary majors to the theories, principles and procedures of various selected areas of the law in preparation for document production. Prerequisite: AOT-2315.

AOT-3319 Legal Document Preparation II (2-3-3)

This is the second half of the course that applies theories, principles and procedures of law to the preparation and production of various selected legal documents. Prerequisite or Corequisite: AOT-3317.

AOT-3321 Law Office Management (2-3-3)

This course introduces legal secretary majors to principles and procedures essential in law office management with emphasis on information flow and management, accounting, general personnel policies and management. Prerequisite: AOT-2315.

AOT-3323 Litigation (2-3-3)

This course introduces the legal secretary major to the civil procedures involved in a hypothetical case from the initial

preparation through the appellate procedure. Prerequisite: IMT-1211 and AOT-2201.

AOT-3352 Advanced Office Technology (2-3-3)

This course gives the student hands-on experience with technology in current use in automated offices.

AOT-3362 Office Management (2-3-3)

Introduction of office management concepts including time management training, solving personal interaction problems, ergonomic office layout, employee benefits, confidentiality and ethics, and principles of total quality management. Prerequisite: AOT-3213.

AOT-3372 Presentation Graphics (2-3-3)

Prepare and present an individualized project on state-of-the-art equipment and software as used by an office manager/administrator. Prerequisite: IMT-118.

Automotive Technician

AUT-199 Co-op for Automotive Technician (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

AUT-298 Co-op for Automotive Technician (1-39-6)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

AUT-299 Co-op for Automotive Technician (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

AUT-398 Co-op for Automotive Technician (1-39-6)

A continuation of AUT 298. Training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: AUT-298.

AUT-1012 Introduction to Automotive Mechanics and Safety (2-0-2)

This course introduces the student to the profession of auto mechanics. Emphasis is placed on safety fundamentals in the automotive industry, including proper use of hand and power tools and equipment.

AUT-1025 Carburetion and Fuel Systems (3-6-5)

This course is a comprehensive study of gas and diesel engine fuel systems, including the latest diagnostic and repair techniques. Emphasis is placed on carburetors, electronic fuel injection, diesel fuel injection, turbocharging and emission control devices.

AUT-1113 Parts Nomenclature and Inventory (3-0-3)

In this course, students learn the names of auto parts, how to use the parts catalogs and interchange books, operating principles of automotive assemblies, inventory and stock level practices and calculation of sale prices for desired profit.

AUT-1124 Electrical Systems I (2-6-4)

This course is a comprehensive study of electrical fundamen-

tals to include starting and charging systems, vehicle wiring and schematics, solid-state devices, etc. Use and care of diagnostic equipment is also covered.

AUT-1132 Parts Counter Sales (2-0-2)

This course covers the duties of the auto parts sales person who meets the customer at the counter. Areas of study include sales procedures and techniques, parts identification, locating parts in storage bins and proper record keeping of the sales transactions.

AUT-1524 Electrical Systems II (2-6-4)

This course is an advanced study of automotive electrical systems and the use of diagnostic and repair equipment. Emphasis is placed on troubleshooting and repair of the vehicle's starting and charging system to include computer controlled systems and components.

Prerequisite: AUT-1124.

AUT-1526 Power Trains (4-8-6)

This course covers the fundamentals of clutches, standard transmissions and differentials, with emphasis on diagnosing and repairing clutches; 3-, 4- and 5-speed transmissions; drive shafts, U-joints, front and rear differentials and transfer case.

AUT-1623 Electrical Accessories (2-3-3)

This course is a study in the theory, diagnosis and repair of popular accessory systems and devices. Course topics include cruise controls, radio and stereo systems, power windows and door locks, sun roofs, digital instrument clusters, intermittent wipers, lighting systems, etc.

AUT-2024 Automatic Transmissions I (2-8-4)

This course is an introduction into the basic operating principles of automatic transmissions on front- and rear wheel-drive vehicles. This course includes hands-on training on all transmission components and disassembly, inspection and reassembly of popular transmissions.

AUT-2025 Steering, Suspension and Alignment (3-8-5)

Included in this course are steering systems, power assist units, suspension systems; two- and four-wheel alignment and wheel-balancing techniques.

AUT-2525 Automatic Transmissions II (3-8-5)

This course is an advanced study of the operation, diagnosis and repair of front- and rear-wheel- drive automatic transmissions. Emphasis is placed on industry diagnostic and rebuilding standards. Transmissions are removed from vehicles, rebuilt, reinstalled and road-tested for proper operation. Minor and in-car repairs are also covered in this course. Prerequisite: AUT-2024.

AUT-2625 Engines (3-8-5)

This course covers the theory and operation of automotive gas and diesel engines. This course also covers the inspection, measurement and repair methods of overhauls, including valve grinding, engine removal, disassembly, cleaning, inspection, reassembly and installation.

AUT-2712 Shop Supervision and Management (2-0-2)

This course is a study of accounting, finance, personnel, equipment, use of facilities, insurance and liability, with

emphasis on different applications of management in dealerships and independent shops.

AUT-3025 Computerized Engine Controls (4-4-5)

This course is a comprehensive study of computerized engine control systems on foreign and domestic vehicles with emphasis on diagnosis and repair. Students use state-of-the-art diagnostic equipment and repair procedures. Prerequisite: AUT-1524.

AUT-3125 Engine Performance (3-8-5)

This is an advanced course concerning problems and solutions affecting the performance, driveability and economy of vehicles equipped with gas and diesel engines. Extensive hands-on diagnosis and repair is performed using the latest equipment and techniques.

AUT-3222 Automotive Technician Certification Standards (2-0-2)

This course is a study of certification procedures and testing as offered by major automotive manufacturers and the National Institute for Automotive Service Excellence (NIASE).

AUT-3524 Automotive Brakes (2-8-4)

This course covers the fundamentals of conventional, power, drum and disc brakes with emphasis on total brake overhauls, including rebuilding the hydraulic system, machining drums and rotors and installing new brakes. This course also covers basic anti-lock brake system components.

AUT-3525 Heating and Air Conditioning (3-6-5)

This course is a comprehensive study of heating and air conditioning systems. Emphasis is on diagnosis, testing, servicing and overhauling components in air conditioning and heating systems.

AUT-3534 Body and Chassis Computer System (3-3-4)

This course is a basic study of body and chassis computer systems. Included are the following computer controlled chassis systems: steering, brakes, suspension and drive train. Included in the body computer systems are multiple-vehicle computers, interfacing, multiplexing, serial data interpretation, etc. Students use state-of-the-art diagnostic equipment and procedures. Prerequisite: AUT-1524.

Aviation Maintenance Technology

AER-1021 Aircraft Safety and Orientation (1-0-1)

An overview of Aviation Maintenance and TSTC Policies and Procedures. A brief history of aviation with emphasis on the mechanic's role and duties is included along with an introduction to aircraft structures and their components. Safety is included in the responsibilities and duties.

AER-1023 Shop Practices (1-8-3)

Correct use of hand, precision measurement, and shop tools and equipment. Students will learn to identify aircraft hardware and the fabrication of hydraulic lines and tubing. Procedures for testing, heat treating, corrosion control, cleaning and inspection of metals in the manufacture of aircraft.

AER-1122 Weight and Balance (1-2-2)

A study of weighing procedures, weights, arms, moments and placarding. Students will calculate the center of gravity, compute loading of an aircraft, and complete the required forms. They will weigh an aircraft and learn safety precautions associated with the proper weight and balance procedures. Prerequisite: Permission of the Program Chairman.

AER-1123 Federal Aviation Regulations (2-3-3)

Practical exercises in the communication skills of writing, reading, and speaking as the student engages in a detailed study of the use and value of FAA Regulations and FAA and Manufacturer's Specifications, Manuals, Publications and Forms. The student writes descriptions of aircraft conditions and presentations of FAA regulations as they affect the industry and the individual. Emphasis is placed on thoroughness, format, and clarity of expression.

AER-1522 Ground Operations and Servicing (1-2-2)

The student will become familiar with ground operations and servicing of aircraft.

AER-1524 Basic Aircraft Electricity (2-8-4)

A study of aircraft electrical systems and their requirements. This course also includes the use of the ammeter, voltmeter, and ohmmeter; series and parallel circuits, inductance and capacitance, magnetism, converting A.C. to D.C., and controlling devices. Prerequisite: An approved math course.

AER-2022 Propellers and Control Systems (1-4-2)

The student learns the theory and operation of propeller systems; removal, balancing, and installation of propellers; and repairing, inspecting, checking, servicing, and troubleshooting propellers and control systems. Prerequisite: An approved physics course.

AER-2023 Engine Auxiliary Systems (2-4-3)

A study of gas turbine and reciprocating engine instrument systems, lubrication systems, fire protection systems, induction systems, exhaust systems, and cooling systems.

AER-2025 Fuel Metering and Induction (3-6-5)

The operational theory of a fuel metering and induction system used in reciprocating and gas turbine engines; their maintenance, servicing, troubleshooting, and overhaul.

AER-2123 Gas Turbine Engines (2-4-3)

A study of gas turbine engines, their development, operating principles and theory.

AER-2124 Reciprocating Engines (2-8-4)

A study of reciprocating engines, their development, operating principles and theory.

AER-2125 Engine Overhaul (2-12-5)

A study of gas turbine and reciprocating engine overhaul. The student will learn disassembly, inspection, precision measurement, repair and reassembly of gas turbine and reciprocating engines. Prerequisite: AER-2123 and AER-2124.

AER-2225 Powerplant Analysis and Inspection (2-12-5)

A study of gas turbine and reciprocating engine inspection,

replacement, and testing. The student will perform engine inspection, replacement, and operational analysis of engine performance.

Prerequisite: Permission of the Program Chairman.

AER-2325 Powerplant Electrical Systems (2-9-5)

The student will install, check, and service electrical components and systems and perform overhaul and checkout procedures for generators, alternators, and starters and ignition systems. Prerequisite: AER-1524.

AER-3022 Wood, Fabric and Finishing (1-4-2)

Inspection and repair of wood structures. Students learn techniques and application of aircraft fabric coverings and aircraft finishes.

Prerequisite: Permission of the Program Chairman.

AER-3026 Hydraulics, Pneumatics and Landing Gear Systems (3-9-6)

Students learn to inspect, check, overhaul, and test hydraulic and pneumatic units and power systems, landing gear, and brake systems. Prerequisite: An approved physics course.

AER-3027 Sheet Metal Structures (4-9-7)

The principles and practices used in the inspection, repair, layout, and fabrication of aircraft sheet metal structures. Students will become familiar with fiberglass and honeycomb structures and perform repair procedures.

Prerequisite: Permission of the Program Chairman.

AER-3123 Instruments, Navigation, and Communication (2-3-3)

A study of aircraft instrument and electronic system installations. The student will check and install instruments and will learn inspection and repair procedures on antennas and electronic equipment installations.

Prerequisite: An approved physics course.

AER-3124 Aircraft Auxiliary and Fuel Systems (2-8-4)

The student learns to inspect, check, troubleshoot, and service auxiliary and fuel systems. Prerequisite: AER-3126.

AER-3126 Aircraft Electrical Systems (3-9-6)

The student will install, check and service airframe electrical wiring, controls, switches, indicators, and protective devices. Also included is the repair of aircraft electrical systems components. Students will inspect, check, troubleshoot, service, and repair alternating current and direct current electrical systems. Prerequisite: AER-1524.

AER-3127 Assembly, Rigging, and Inspection (4-9-7)

Assembly and rigging of fixed and rotary wing aircraft, and balancing of movable surfaces. Students use FAA and manufacturer's specifications and perform 100 hour and annual inspections.

Prerequisite: Permission of the Program Chairman.

Biology

***BIOL-1408 General Biology I (4-4-4)**

A study of the basic principles of biology including the physical and chemical properties of life, cellular structure, cell division, and a brief survey of the animal kingdom. The

course contains an overview of the anatomy and physiology of the various organ systems of man. (Formerly BIOL-105)

***BIOL-1409 General Biology II (4-4-4)**

A continuation of the study of the basic principles of biology including evolution; cellular energetics; a brief survey of prokaryote, protists, and fungi; and general ecology. The course contains an overview of the morphology, physiology, and reproduction of flowering plants.

Prerequisite:BIOL-1408. (Formerly BIOL-115)

***BIOL-2401 Anatomy and Physiology I (4-4-4)**

A study of the structure and function of the human body including cells, tissues and organs of the following systems: integumentary, skeletal, muscular, nervous system and special senses. Prerequisite: Recent High School Biology or Chemistry or BIOL-1408; CHEM-1405 or CHEM-1411 is recommended. (Formerly BIOL-125)

***BIOL-2402 Anatomy and Physiology II (4-4-4)**

A continuation of the study of the structure and function of the human body including the circulatory, respiratory, digestive, urinary, reproductive and endocrine systems. Consideration is given to metabolism, electrolyte and fluid balance, and human development. Prerequisite: BIOL- 2401. (Formerly BIOL-135)

***BIOL-2421 Microbiology (4-4-4)**

An introduction to the morphology, physiology, and taxonomy of bacteria and virus. The course includes the study of disease transmission, resistance to infection, and microbial control. The laboratory will develop sound techniques in culturing, staining, and identifying microorganisms.

Prerequisite: BIOL-2402; either CHEM-1405 or CHEM-1411 is highly recommended. (Formerly BIOL-145)

Biomedical Equipment Technology

BET-111 Introduction to Biomedical Equipment Technology I (1-0-1)

This course acquaints students with general job entry requirements and occupational opportunities in biomedical equipment.

BET-122 Soldering Skills and Shop Safety (1-4-2)

This course prepares the student to select and use proper soldering equipment and apply safety practices at work. Laboratory work emphasizes development of proficiency in soldering and desoldering electronic components and printed circuit development.

BET-199 Co-op for Biomedical Technology (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

BET-298 Co-op Education for Biomedical Technology (1-39-6)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

BET-299 Co-op for Biomedical Technology (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

BET-313 Introduction to BET II (1-4-2)

This course is a study of human anatomy and physiology concentrating on the utilization of medical instrumentation. Anatomical systems where medical equipment is used for monitoring, diagnosis and treatment are covered in detail. Medical terminology is emphasized.

BET-314 Biomedical Equipment Safety and Troubleshooting (3-4-4)

Students in this course develop skills in logical isolation of troubles in medical electronic circuits. Students study codes, standards and safety principles related to medical instrumentation. Laboratory work emphasizes the proper use of test equipment and electrical safety testing procedures. Prerequisite: EEC-1404.

BET- 398 Co-op for Biomedical Equipment Technology (1-39-6)

A continuation of BET 298. Training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: BET 298.

BET-411 Internship I (1-4-2)

This course allows students to practice their performance of preventive maintenance, troubleshooting, calibration and/or repair on specified medical equipment under supervision of a designated instructor or in conjunction with a medical facility. Prerequisite: Approval of the program chairman.

BET-424 Medical Circuits/Troubleshooting (3-3-4)

This course is a study of semiconductor devices and their application to medical instrumentation. Emphasis is placed on medical circuit analysis, measurement of operational parameters and troubleshooting techniques. Prerequisite: Approval of the program chairman.

BET-434 General Medical Equipment (3-3-4)

This course is a study of the theory, principles of operations and application of a variety of basic electromechanical equipment. Laboratory work emphasizes the use of test equipment to analyze circuits, troubleshoot and isolate malfunctions, repair and service actual medical instruments. Corequisite: BET-424.

BET-444 General Medical Equipment I (2-4-3)

This course is a study of the theory and application of a variety of basic medical instruments. Laboratory work will emphasize the use of test equipment to analyze circuitry, trace signal flow and perform preventive maintenance procedures. Disassembly and re-assembly of equipment will be stressed.

BET-511 Internship II (1-4-2)

This course is a continuation of BET-411. Students apply learned skills to service and repair medical instruments. Students are supervised by a designated biomedical equipment technician at a medical facility. Prerequisite: Approval of the program chairman.

BET-524 Medical X-ray (3-3-4)

This course is a study of radiation theory and safety hazards, fundamental circuits and application of X-ray systems.

Laboratory work emphasizes the use of test equipment to analyze circuits, troubleshoot and isolate malfunctions and repair and service X-ray equipment. Prerequisite: BET-434.

BET-534 Physiological Instruments (3-3-4)

This course is an introduction to maintenance of electrocardiographic equipment, including both monitors and recorders.

Emphasis is placed on theory of operation, circuit analysis and troubleshooting techniques. This course includes physiology of the cardiovascular system. Prerequisite: BET-434.

BET-544 General Medical Equipment II (2-4-3)

This course is a continuation of BET-444. This course is a study of the theory, principles of operation and application of a variety of basic electromechanical medical equipment.

Laboratory work emphasizes the use of proper test equipment to analyze circuits, troubleshoot and isolate malfunctions, repair, service and calibrate medical equipment.

BET-611 Internship III (1-4-2)

This course is a continuation of BET-511. Students use proper test equipment and manufacturer's service manuals to calibrate medical instruments. Students also attend meetings and conferences related to biomedical instrumentation at the medical facility. Students are supervised by a designated biomedical equipment technician.

Prerequisite: Approval of the program chairman.

BET-624 Physiological Instruments (3-3-4)

This course is a continuation of BET-534, with emphasis placed on graphic display and recording devices.

Defibrillators and multipurpose diagnostic equipment are also studied. Prerequisite: BET-534.

BET-634 Clinical Instrumentation (3-3-4)

This course is a study of theory, application and principles of operation of electrical and electronic instruments commonly used in clinical laboratories. Laboratory work emphasizes the use of test equipment to analyze circuits, troubleshoot and isolate malfunctions and service and repair clinical laboratory equipment. Prerequisite: BET-434.

Building Construction Technology**BCT-102 Building Construction Materials (2-2-3)**

This course is a study of manufacturing processes, uses and selection of building construction materials. Wood and wood-related products are emphasized with brick, stone and concrete masonry units included.

BCT-104 Blueprint Reading and Specifications I (2-3-3)

This course is an introduction to principles of blueprint reading and interpretation. Assignments are made in relation to complete sets of working drawings. Students study construction relationships between architectural, structural, electrical and mechanical drawings and specifications.

BCT-106 Building Construction Surveying (1-3-2)

This course covers the theory and practice of plane surveying,

including taping, differential and profile leveling, cross sections, earthwork computations, transit measurements of angles and directions and transit-tape surveys.

BCT-110 Foundations (2-6-4)

This course covers practical applications of form fabricating, setting foundations, setting piers and casings. Students study modern methods of building layout systems and placement of foundation materials for structures.

BCT-112 Properties of Concrete (2-2-3)

This course is a study of various types of concrete materials. Emphasis is placed on concrete mix design and quality control, quantity take-offs and bid correlation. Students study techniques of forming and placing steel-reinforced concrete by constructing field projects.

BCT-114 Principles of Building Design (2-2-3)

This course is a study of basic design principles as applied to building construction. Course material covers architectural style, land and site planning, plan analysis and modular design.

BCT-132 Carpentry Tools and Framing II (3-3-4)

This course teaches the various rafter and truss systems currently in use in the residential construction industry. This course covers materials hardware, estimating and actual lab projects. Emphasis is placed on off-the-ground safety requirements. Prerequisite: BCT-204.

BCT-133 Roofing (1-3-2)

This course covers methods of roofing residential structures. Students study installation techniques, roofing materials, safety and estimating of built-up structures, asphalt shingles, wood shingles, tile and various new product roofing systems.

BCT-199 Co-op for Building Construction Technology (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study.

Prerequisite: Fifth-quarter standing.

BCT-202 Estimating I (2-2-3)

This course covers estimating of building areas, volumes of concrete, foundations, lumber linear and board foot requirements, wall framing, ceiling joists, roof rafters and sheathing materials.

BCT-204 Carpentry Tools and Framing I (3-6-5)

This course covers the use and care of basic carpentry tools and a study of wood framing projects.

BCT-210 Construction Materials and Techniques (2-2-3)

This course covers the study of metals, gypsum and lime, glass, insulation, plastics, adhesives and modern finishing materials of all types. Emphasis is placed on techniques of application.

BCT-214 Interior and Exterior Finish (3-9-6)

This course is a study of exterior and interior finish of residential and commercial buildings.

BCT-221 Brick and Block Laying (3-3-4)

This course is a study of techniques, materials and estimating procedures for brick veneer and block work. Lab emphasis will be on safety, precision and speed in laying block and brick utilizing contemporary techniques, practices and tools.

BCT-225 Finish Carpentry (3-4-4)

This course entails a study of the construction of basic cabinetry, picture frame panelling, advanced interior trim, shelving, wood flooring and staircase construction. A major emphasis is placed on the installation methods for each of these components.

BCT-298 Co-op for Building Construction Technology (1-39-6)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

BCT-299 Co-op for Building Construction Technology (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

BCT-302 Construction Safety and Health (3-0-3)

This Labor Department-designed course requires that the course be taught using the Federal Register Part 1926. It informs the students and employees on the use of Federal Regulations and the methods to be followed in interpreting these rules and standards. By using ten written exercises, the students will develop skills in the proper procedures for researching construction safety rules and regulations. Construction equipment procedures are also covered.

BCT-306 Construction Inspection (2-3-3)

In this course, students learn to use building code documents which have been adopted in this area of Texas. This covers city, county, state and federal codes and requirements. Students gain practical experience in building inspection.

BCT-351 Structural Steel (3-4-4)

This course surveys various methods of utilizing steel members in formation of the skeletal structure of modern commercial, industrial and institutional edifices. Emphasis is placed on steel erection safety techniques.

BCT-352 Structural Concrete (3-6-5)

This course is a study of the use of reinforced concrete members in formation of modern structures, including techniques of constructing highways, bridges, buildings, etc. This includes construction techniques and safety rules for elevated slabs, beams, spandrels, columns, footings, tilt-up slab walls and contoured concrete structures.

BCT-354 Blueprint Reading and Specifications II (2-3-3)

This course is a detailed study of the construction drawings and specifications used in the "commercial construction" industry. Major emphasis is placed on the interpretation of construction drawings peculiar to the "building systems" used in commercial construction. Assignments consist of analyzing construction drawings and specifications from actual commercial projects. Prerequisite: BCT-104.

BCT-371 Estimating II (2-3-3)

In this course, "cost methods" for labor and materials will be combined with the quantity take-off concepts studied in BCT-202 in order to compile complete estimates for both residential and commercial projects. This course will include an introduction to contracts and specifications, scheduling and computerized estimating. Prerequisite: BCT-202.

BCT-373 Structural Materials Problems (2-3-3)

This course is an overall study in the correct use and selection of structural materials. Special emphasis is placed on the use of specification tables, technical manuals and load tables for building materials as set forth by manufacturers and industrial associations. Prerequisite: MATH-114.

BCT-398 Co-op for Building Construction Technology (1-39-6)

A continuation of BCT-298. Training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: BCT-298.

Business Skills**BS-104 Reading Improvement for Business (2-3-3)**

This course develops reading comprehension, reading rate and vocabulary with particular emphasis on business communications, business and business-related terminology and library familiarization.

BS-106 General Math for Business (2-3-3)

This course refreshes the student's knowledge of the basic fundamentals of math and serves as a prerequisite for BS-130.

BS-130 Business Mathematics (2-3-3)

This course helps the student solve common business problems and apply mathematical principles in business-related activities. Prerequisite: BS-106.

BS-145 Business Office Procedures (2-3-3)

This course allows the student to integrate previous keyboarding skills and knowledge. It is a simulated office course designed to prepare the student for the business world. Emphasis is placed on building keyboarding skills of 50 words per minute or higher and thorough knowledge of business documents. Prerequisites: AOT-1112 and AOT-1212.

BS-147 Data Entry I (2-3-3)

In this course, the student uses the microcomputer to develop skills in entry of data. The student develops skills to become a data entry operator. This course is designed for the student who wants to obtain a job in which data entry is one of several responsibilities. Students develop keying skills and are introduced to business systems for which data are being entered.

BS-148 Introduction to Word Processing (2-3-3)

This course provides the student with an introduction to basic word processing skills and commands. The student is exposed to basic concepts and applications in business-related simulations.

BS-150 Spelling and Vocabulary (2-3-3)

This course provides the student with 25 basic rules for spelling. This course stresses use of homonyms, synonyms and commonly confused words.

BS-152 Business English I (2-3-3)

This course gives the student a basic knowledge of principles of English grammar.

BS-153 Business English II (2-3-3)

This course assists the student in developing proficiency in mechanics (capitalization, punctuation, abbreviations) of the English language. Prerequisite: BS-152.

BS-154 Business Correspondence I (2-3-3)

This course gives the student basic knowledge in writing skills, including proofreading skills and sentence variation. Prerequisite: BS-153.

BS-155 Business Correspondence II (2-3-3)

This course is a continuation of BS-154, providing further training in the development of writing skills, including composition of effective business memos, letters and reports.

BS-167 Introduction to Bookkeeping (2-3-3)

This course deals with the study and application of bookkeeping theory, principles, and completion of the bookkeeping cycle for a service enterprise. It provides the student with an understanding of the bookkeeping principles essential for success in business and personal use; provides an area that individuals need for their personal lives; and gives information on how businesses operate. This course emphasizes the "why" of bookkeeping procedures and as well as the "how" of bookkeeping applications.

BS-168 Computerized Bookkeeping I (4-6-6)

This course teaches the student to handle cash receipts, cash payments, purchases and sales. Students develop an understanding of control procedures, end-of-the-period procedures and managerial use of accounting information. Students become competent in various methods of handling, paying and recording payroll and payroll taxes. Emphasis is placed on the use of bookkeeping procedures.

Prerequisite: BS-167

BS-169 Computerized Bookkeeping II (4-6-6)

This course teaches the student to handle financial activities of a typical corporation. Students develop an understanding of basic cost and interpretation of financial reports. This course teaches the student to use bookkeeping procedures to solve automated problems with computer software.

BS-170 Calculating Machines (2-3-3)

This course equips students with entry-level competence in operation of the most common type of calculators. Students are trained in the use of calculating machines for solving business problems such as payroll, invoice extensions, inventory calculations and banking transactions.

BS-180 Basic Business Computer Training (2-3-3)

This course is an overview of computers and data processing for the student desiring to learn what a computer is, how a computer is applied to the solution of business and other

related problems in modern society. The student is introduced to the Disk Operating System, an electronic spreadsheet program, and a word processing software program.

BS-220 Introduction to Spreadsheets(2-3-3)

In this course, a software application is utilized to introduce the fundamentals of the electronic spreadsheet and expose the capabilities of that software within the content of actual business projects. Users will discover how various commands work to solve problems and basic business applications.

BS-242 Payroll Accounting (2-3-3)

This course trains the student in preparing payroll, quarterly and year-end reports; and analyzing and journalizing payroll transactions.

BS-243 Small Business Management (2-3-3)

This course develops an understanding of the environment within which small business operates with proper balance between business and management functions.

BS-245 Office Simulations (2-3-3)

This course correlates and integrates the student's business skills and applies them in a simulated office situation. The student is prepared to arrange long-range projects and determine the objectives and priorities of the project. Students develop confidence to perform the managerial and clerical tasks in the office and undertake the necessary responsibility to do this. This course trains the student to work with others in an office and to handle human relations and other office problems as they arise. This course develops the personal characteristics and basic clerical and office skills needed to find a job and acquaint the student with basic office systems and procedures.

BS-260 Human Relations for Business (2-3-3)

This course is a study of the interaction of people in business offices. Emphasis is placed on developing communication skills and proper attitudes to maintain a cooperative environment that facilitates satisfaction of individual needs with maximum productivity and efficiency.

BS-932 Computerized Bookkeeping I (Part I Half-time) (2-3-3)

This course teaches the student to handle cash receipts, cash payments, purchases, and sales. Students develop an understanding of control procedures. Prerequisite: BS-167.

BS-933 Computerized Bookkeeping I (Part II Half-time) (2-3-3)

This course teaches end-of-the-period procedures and managerial use of accounting information. Competency in various methods of handling, paying and recording payroll and payroll taxes is stressed. Prerequisite: BS-167 and BS-932.

BS-934 Computerized Bookkeeping II (Part I Half-time) (2-3-3)

This course develops an understanding of basic cost and interpretation of financial reports. Prerequisites: BS-167 and BS-168 or BS-932 and BS-933.

BS-935 Computerized Bookkeeping II (Part II Half-time) (2-3-3)

This course teaches the student to handle financial activities of a typical corporation. Prerequisites: BS-167, BS-168 or BS-932 and BS-933; and BS-934.

All of the above bookkeeping courses containing 120 class hours per quarter will be offered as part of the evening curriculum at 60 class hours per quarter including the following: BS-932, BS-933, BS-934, and BS-935.

Business

***BUSI-1301 Introduction to Business (4-0-3)**

This course covers the role of business in modern society, overview of business operations, analysis of the specialized fields within the business organization, and development of a business vocabulary.

***BUSI-2301 Business Law I (4-0-3)**

This course covers principles of laws which form the legal framework for business activity. Applicable statutes; contracts; agency. (Formerly BUSS-104)

Chemical Technology

CHT-110 Agriculture and Soil Chemistry (3-6-5)

This course is a practical study of soils and the usage and handling of various agricultural chemicals, including fertilizers, herbicides and insecticides. Attention is given to interrelationships with plant growth and development and effect on the environment.

CHT-120 General Chemistry I (3-6-5)

This course introduces basic principles of scientific measurements, properties of matter, chemical nomenclature, chemical equations of elements and calculations necessary to determine temperature, metric conversions to English conversions, density and percent compositions of elements in compounds. Laboratory work includes completion of 20 experiments and notebook write-ups. Corequisites: MATH-090, ENGL-090, CHT-122.

CHT-122 Chemical Calculations I (2-6-4)

This course parallels and supports CHT-120, with emphasis on solving problems similar to those included in CHT-120 exercises and laboratory experiments. Logarithms are introduced and heavy emphasis is placed on oxidation reduction equations. Corequisites: CHT-120, MATH-090.

CHT-124 General Chemistry II (3-6-5)

This course introduces the theories and principles of bonding, spectroscopy, solution, acids-bases and equilibria. Laboratory work reinforces basic laboratory skills and introduces basic analytical instruments. The laboratory work includes completion of 20 experiments and laboratory notebook write-ups. Prerequisites: MATH-090, CHT-120, CHT-122.

CHT-199 Co-op for Chemical Technology (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

CHT-200 Analytical Instruments (2-3-3)

This course is an introduction to instrument methods to develop and understanding of the operation, maintenance and calibration of chemical analysis instruments.

CHT-202 Organic Chemistry I (3-3-4)

This course presents an overview of the classification, characteristics and structure of carbon compounds, and introduces basic organic laboratory skills procedures. Prerequisites: CHT-120, CHT-122, MATH-090. Corequisites: CHT-124, CHT-204.

CHT-204 Chemical Calculations II (2-6-4)

This course is a continuation of CHT-122, with emphasis in stoichiometry, solutions, titrations and equilibrium. Prerequisites: CHT-120, CHT-122, MATH-090. Corequisites: CHT-124, MATH-114.

CHT-206 Analytical Chemistry I (2-6-4)

This is a gravimetric analysis course emphasizing the analysis of samples by precipitation adhering to strict accuracy and precision criteria. Prerequisites: CHT-124, CHT-204, MATH-114.

CHT-207 Analytical Chemistry II (3-6-5)

This course is an introduction to titrimetric methods of analysis, with emphasis in the theory and application of neutralization titrations, complex formation titrations, theory and application of oxidation-reduction titrations and potentiometric titrations. Prerequisites: CHT-124, MATH-114.

CHT-208 Organic Chemistry II (3-6-5)

This course is a continuation of CHT-202, with greater emphasis on the reaction mechanisms of carbon compounds. Laboratory work introduces basic synthesis and purification of carbon compounds and other derivatives. Prerequisites: CHT-124, CHT-202.

CHT-210 Analytical Instrumentation I (2-6-4)

This course is an introduction to instrumental methods in developing an understanding of the operation, maintenance and calibration of the gas chromatograph, atomic absorption spectrophotometer, ASTM distillation apparatus, kinematic viscosity bath, pH meters, Carle Fisher Moisture Analyzer and HPLC. Laboratory work includes a requirement for the submission of a formal report for each of the experiments performed. Prerequisites: CHT-124, CHT-204, MATH-114.

CHT-298 Co-op for Chemical Technology (1-39-6)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

CHT-299 Co-op for Chemical Technology (1-39-6)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

CHT-302 Analytical Instrumentation II (2-6-4)

This course is a continuation of CHT-210, with the theoretical presentation of ion chromatography, GC/MS analysis, infrared spectroscopy, high performance liquid chromatography and

the interpretation of the data obtained from each of the instruments. Laboratory work requires a formal report for each experiment completed. Prerequisite: CHT-210.

CHT-304 Unit Operations I (3-6-5)

This course covers fundamentals of chemical engineering and process equipment. Students perform experiments related to various unit operations. Visits to industrial facilities which employ the processes covered are a part of the course. A formal laboratory report is required for each experiment completed. Prerequisites: CHT-202, CHT-210.

CHT-306 Organic Polymers I (3-3-4)

This course is an introduction to organic polymers and the understanding of basic concepts of polymer science. This course covers the rise of macromolecules, molecular forces and chemical bonding in polymers, with an emphasis in molecular weight and molecular weight distribution. Prerequisites: CHT-202, CHT-208.

CHT-308 Analytical Instrumentation III (2-6-4)

This is an advanced course covering instrumental methods, including sample preparation, detector calibration and standard preparation to trace levels. Emphasis is placed on independent work on troubleshooting and operator maintenance procedures. Prerequisite: CHT-302.

CHT-310 Unit Operations II (3-6-5)

This course is a continuation of CHT-304, with emphasis on distillation and fluid flow. The distillation products are analyzed by chromatography, refractometry, specific gravity and other physical property determinants for qualitative and quantitative determinations. A formal report is required for each completed experiment. Prerequisite: CHT-304.

CHT-316 Organic Polymers II (3-3-4)

This course is a continuation of CHT-306, with emphasis in kinetics of step-growth and chain-growth polymerization, and the analysis and testing of polymers. Prerequisite: CHT-306.

CHT-317 Thermoplastic & Thermoset Molding (3-3-4)

This course is an introduction to the methods in which polymers are processed, with emphasis in plastic, fiber and elastomer technologies. Prerequisite: CHT-316.

CHT-318 Special Projects (3-3-4)

This course provides the opportunity for advanced study of selected topics in chemical technology, with emphasis on the instrumental analysis of samples. Prerequisites: CHT-302, CHT-304, CHT-306.

CHT-398 Co-op for Chemical Technology (1-39-6)

A continuation of CHT 298. Training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: CHT 298

Chemistry

***CHEM-1405 Introductory Chemistry I (4-4-4)**

A survey course introducing chemistry. Topics may include inorganic, organic, biochemistry, food/physiological chemistry, and environmental/consumer chemistry. Designed for

non-science students. Prerequisite: MATH 085. (Formerly CHEM-125)

***CHEM-1411 General Chemistry I (4-4-4)**

Basic principles are introduced. Emphasis is placed on fundamental laws, atomic structure, bonding, acids and bases, selected elements and their compounds. Prerequisite: MATH 090. (Formerly CHEM-105)

***CHEM-1412 General Chemistry II (4-4-4)**

A continuation of General Chemistry I, ionic equilibria, oxidation-reduction, electrochemistry, gas laws, thermo dynamics, introduction to carbon compounds, nuclear and radio-chemistry. Prerequisite: CHEM 1411. (Formerly CHEM-115)

Computing

***COSC-1301 Introduction to Computing (3-2-3)**

This course is a study of the effect of computers on society, the history and use of computers, computer applications in various segments of society, programming concepts, and hardware and software terminology. This course may not be applied towards a computer science major or minor.

***COSC-1418 Computer Science Programming I (4-4-4)**

This course is an introduction to computer programming. Emphasis is placed on the fundamentals of structured design, development, testing, implementation and documentation. This course includes coverage of language syntax, data and file structures, input/output devices and disks/files. Prerequisite: MATH-1314 or equivalent.

***COSC-2418 Computer Science II (4-4-4)**

This course covers further applications of programming techniques. Topics may include file access methods, data structures and modular programming, program testing and documentation and other topics not normally covered in an introductory computer programming course. Prerequisite: COSC-1418, MATH-1316 or equivalent.

Computer Maintenance Technology

CMT-199 Co-op for Computer Maintenance (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

CMT-280 Computer Systems Repair (2-3-3)

This course teaches the student to run diagnostics, make modular repairs, follow installation instructions and report detailed causes of equipment malfunction with repair personnel

CMT-298 Co-op for Computer Maintenance (1-39-6)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

CMT-299 Co-op for Computer Maintenance (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

**Academic Course-credit is in semester hours.*

CMT-303 Computer Peripherals (2-6-4)

This is a survey course covering computer-related peripherals. Interfacing techniques involving RS-232, centronics, serial, parallel and IEEE-488 are discussed.

CMT-312 Computer Projects (2-6-4)

This course promotes independent or small team research and design of any approved project. The project may involve development of hardware, firmware and/or software. This course also includes a comprehensive evaluation of all past technical concepts. A formal report is required for presentation of project results. Prerequisite: Sixth-quarter standing or approval of the program chairman.

CMT-398 Co-op for Computer Maintenance Technology (1-39-6)

A continuation of CMT 298. Training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: CMT-298.

CMT-1603 Microprocessors I (2-4-3)

This is a basic course in microcomputer hardware, its architecture timing sequences, operation and programming.

CMT-2004 Microprocessors II (2-6-4)

This course is a continuation of CMT-1603, designed to prepare the student to troubleshoot microcomputer hardware and software. Prerequisite: CMT-1603.

CMT-2204 Computer System Maintenance I (2-6-4)

In this course, engineering drawings are utilized to provide students with a detailed understanding of computer bus structure, interflow of data, as well as timing and control signals. Emphasis is placed on the identification of modules that make up computer systems, operations of each module and how they interface with each other. Students will develop skills in the use of maintenance aids and test equipment.

CMT-2304 Computer Peripherals (2-6-4)

This course is a study of the digital computer systems. This course covers functional analysis of output peripherals, input peripherals, memory peripherals, data transfer methods and interfaces. Students connect peripherals and transfer data to and from a microcomputer system.

CMT-3004 Computer System Maintenance II (2-6-4)

This course is designed to prepare the student to troubleshoot and repair computers to the component level. Prerequisite: CMT-2204.

CMT-3104 Computer System Maintenance III (2-6-4)

This course is an advanced study of computer equipment troubleshooting. Computer repair is emphasized with troubleshooting techniques. Prerequisite: CMT-3004.

CMT-3204 Computer Interfacing (2-6-4)

This course covers the basic concepts and terminology of interfacing the computer processor. Emphasis is placed on the characteristics and operation of the computer bus and design requirements for understanding and troubleshooting of various interfaces.

CMT-3304 Data Communications (2-4-3)

This course is a study of the input/output sections of computers with emphasis placed on data communications. Course topics include the RS 232 interface, the IEEE 488 bus system, modems, ACIA's analog links, data links and protocols.

Computer Science Technology**CST-122 Advanced BASIC (3-7-5)**

This course introduces the student to sequential file update, direct access file processing techniques, searching techniques and sorting techniques. BASIC language is used to implement the covered techniques.

CST-124 Assembler (3-7-5)

This course is an introduction to computer concepts. Emphasis is placed on computer organization, machine language and assembly language.

CST-126 Microcomputers: Introduction to Data Base (1-4-2)

This course is a practical approach of the use of commercial data base software to facilitate business record keeping.

CST-136 Microcomputers: Intermediate Data Base (1-4-2)

This course provides continued instruction in the use of commercial data command languages to tailor automated applications to the needs of business. CST-126 and CST-136, together, are the equivalent of CST-366.

CST-199 Co-op for Computer Science (1-19-3)

In this course training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

CST-205 BASIC Programming (2-4-3)

In this course, students learn BASIC programming language and become acquainted with problem-solving procedures and debugging procedures employed when using a modern compiler language.

CST-206 Intermediate BASIC (2-4-3)

This course is a continuation of BASIC programming. Advanced programming, problem-solving and debugging techniques are emphasized. Prerequisite: CST-205.

CST-231 Pascal Programming (4-4-5)

This course is an introduction to the Pascal programming language. Structured programming and techniques of algorithmic development are stressed.

CST-232 Systems Analysis and Design I (2-3-3)

This course introduces the concept of designing an entire system of programs, rather than an isolated program. Students learn procedures for accumulating data and documenting a system.

CST-233 FORTRAN Programming (4-4-5)

This course is a study of the FORTRAN language. Representative business and scientific problems are analyzed and programmed.

CST-235 C Programming (4-4-5)

This is an intermediate-level language course involving the development of programs in the C language, running in a UNIX operating environment. Students are expected to be familiar with at least one other high-level language.

CST-236 Data Structures (3-7-5)

In this course, students write and debug programs involving data structuring methods including ring structures and list structures. Students are required to use pointers to access files while programming.

CST-242 Systems Analysis and Design II (2-3-3)

In this course, students will learn more advanced techniques of systems analysis, such as systems feasibility studies, and become involved in the accumulation of data and design of an actual system.

CST-298 Co-op in Computer Science (1-39-6)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

CST-299 Co-op in Computer Science (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

CST-351 Topics in Computer Science (4-4-5)

This course explores topics or problems in computer science. The subject matter changes from quarter to quarter. This course may be repeated for credit when topics vary. Prerequisite: Permission of the instructor.

CST-352 Application Projects I (1-6-3)

In this program, students systemize, program, debug and document an actual industry problem.

CST-354 RPG-II Programming (3-7-5)

This course combines theory with the laboratory. Students learn basic input and output operations, mathematical calculations, edit codes, group indication, control breaks, arrays and tables, update both sequential and indexed sequential files. Upon completion, students will have enough knowledge to successfully code and debug an RPG-II program.

CST-362 Program Maintenance/Conversion (3-7-5)

In this course, students update, adapt and improve existing programs and documentation. This course covers updating documentation to correspond with the updating of programs and conversion of programs from one machine language/system to another. Emphasis is placed on programs that have little or no existing documentation.

CST-364 Application Projects II (1-6-3)

This course is a continuation of CST-352. Students complete their projects and then prepare and make a presentation of the projects on which they have been working.

CST-366 Data Base (3-7-5)

This course is a survey of logical organization of data base modeled on network, hierarchical and relational approaches.

Relative merits of these approaches are considered in detail, along with concepts of independence, security and integrity. Commercially available data base management systems are reviewed, and programming assignments require establishment and use of a working data base.

CST-367 Advanced Data Base (4-4-5)

This course examines the design and use of complex data base systems involving multiple interrelated files. The topics of control, security, recovery and multiple access are addressed. Prerequisite: CST-136 or CST-366.

CST-398 Co-op for Computer Science Technology (1-39-6)

A continuation of CST-298. Training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: CST-298

CST-1213 Computer Operating Systems I (2-4-3)

This course is a study of operating systems used on computers, including single and multi-user environments. Course work includes mastery of system commands, text editors, batch procedures and utility operations.

CST-1214 Program Design and Development I (2-6-4)

This course introduces problem solving with computers through a structured approach to programming.

CST-1313 Program Design and Development II (2-4-3)

This course is a continuation of CST-1214 which introduces file creation and the utilization of programming to generate reports, generate summary reports, establish transaction files and complete file processing.

CST-1314 Programming Language I (2-8-4)

This course introduces students to structured programming principles, application files, reports, tables and transaction files in one programming language.

CST-2113 Computer Operating Systems II (2-4-3)

This course is a continuation of CST-1213 and includes information about multi-user operating systems. Emphasis is placed on system structure, commands, environments, text editors and shell programming.

CST-2214 Programming Language II (2-8-4)

This course is designed to provide greater proficiency in a language. Emphasis is placed on more complex file structures and programming problems.

Dental Laboratory Technology**DLT-100 Introduction to Dental Laboratory Technology (1-0-1)**

This course introduces the history of dentistry and dental laboratory technology. This course covers job entry specifications and occupational opportunities in the field of dental technology.

DLT-101 Dental Anatomy and Tooth Morphology (2-6-4)

This course is a study of the anatomy of the head and neck, including the maxilla, mandible and temporomandibular joint. Special emphasis is placed on the study of natural

dentition, tooth anatomy, form, function, nomenclature, tooth drawing and wax carving.

DLT-103 Dental Materials (1-6-3)

This course is a study of the dental materials and their use in the fabrication of all types of dental appliances.

DLT-105 Removable Partial Denture Techniques I (2-4-3)

This course is an introduction to removable partial dentures. Course topics include temporary partials and treatment partials with wrought clasps. Students perform a series of basic laboratory procedures in removable partial dentures, including wrought wire clasps.

DLT-107 Complete Denture Techniques I (2-4-3)

This course is an introduction to complete dentures. Course topics include edentulous cast preparation, impression, trays, baseplates and occlusion rims. Students perform a series of basic laboratory procedures in complete dentures.

DLT-109 Fixed Restorative Techniques I (2-4-3)

This course is an introduction to fixed restorative techniques. Course topics include various types of casts with removable dies and fabrication of posterior wax patterns. Students perform a series of basic laboratory procedures in fixed restorative techniques, including waxing posterior wax patterns.

DLT-115 Dental History, Ethics and Jurisprudence (3-0-3)

This course is a comprehensive study of ethics, laboratory relations with the dental profession, trade laws, state and national laboratory organizations and legal aspects of the dental practice.

DLT-201 Removable Partial Denture Techniques II (2-4-3)

This course is a continuation of DLT-105, covering the components of removable partial dentures and methods of surveying and designing removable partial dentures. Students complete all laboratory procedures required for the construction of a cast metal framework.

DLT-203 Complete Denture Techniques II (2-4-3)

This course is a continuation of DLT-107, providing a comprehensive study of the procedures required to construct complete maxillary and mandibular dentures from the final impression to the finished appliance.

DLT-205 Fixed Restorative Techniques II (2-4-3)

This course is a continuation of DLT-109, with emphasis on fabrication of wax patterns, spruing, investing, casting and finishing posterior fixed restorations.

DLT-207 Introduction to Occlusion and Mandibular Motion (1-0-1)

This course is an introduction to the theory and principles of occlusion and mandibular motion.

DLT-209 Removable Partial Denture Techniques III (2-4-3)

This course is a continuation of DLT-201, with instruction in

the various phases of partial denture construction, emphasizing more complex dental prosthesis.

DLT-211 Complete Denture Techniques III (2-4-3)

This course is a continuation of DLT-203. This course introduces students to the semi-adjustable articulator. Emphasis is placed on the completion of balanced set-ups. Students are also introduced to repairs and relines.

DLT-213 Fixed Restorative Techniques III (2-4-3)

This course is a continuation of DLT-205. Students are introduced to resin veneered crowns. Emphasis is placed on posterior fixed bridges with correct occlusal contact and no balancing interferences.

DLT-301 Removable Partial Denture Techniques IV (2-4-3)

This course is a continuation of DLT-209, with continued instruction in fabrication of partial dentures of more complex designs. Emphasis is placed on metal onlays, unilateral tooth born partials and precision rests.

DLT-303 Complete Denture Techniques IV (2-4-3)

This course is a continuation of DLT-211, with continued instruction in fabrication of complete dentures. Emphasis is placed on the semi-adjustable articulator. Students complete balanced set-ups using various types of posterior teeth with various condylar inclinations. Students are introduced to rebasing procedures.

DLT-307 Removable Partial Denture Techniques V (2-4-3)

This course is a continuation of DLT-301. Students receive continued instruction in the fabrication of removable partial dentures. Emphasis is placed on all metal removable partial dentures incorporating various designs, such as Kennedy bar, lingual plate and labial bar. Students are introduced to various removable partial denture repairs and the fabrication of a crown under an existing clasp.

DLT-309 Complete Denture Techniques V (2-4-3)

This course is a continuation of DLT-303, with continued instruction in the fabrication of complete dentures. Emphasis is placed on immediate dentures and alternate processing techniques.

DLT-311 Fixed Restorative Techniques IV (2-4-3)

This course is a continuation of DLT-213, with continued instruction on fixed bridges. Emphasis is placed on esthetics, including shading. Students are introduced to one-piece casting.

DLT-313 Dental Ceramics I (2-4-3)

This course is an introduction to dental ceramic procedures. Emphasis is placed on porcelain and metal substructures. Students are introduced to individual and bridge copings, waxing, casting and preparation for porcelain adaptation.

DLT-315 Introduction to Orthodontic Procedures (2-4-3)

This course is an introduction to orthodontic dental laboratory procedures. Emphasis is placed on wire bending, soldering and removable acrylic resin appliances.

DLT-317 Dental Ceramics II (2-4-3)

This course is a continuation of DLT-313, with emphasis on porcelain fused to metal restorations, including shading, staining and characterizations of the restoration.

DLT-390 Practical Laboratory Procedures (3-9-6)

Comprehensive study of basic commercial laboratory procedures while performing specialties in separate departments. Includes laboratory procedures associated with following doctor's prescriptions, quality control check billing and mailing. Prerequisite: six quarter standing.

DLT-399 Special Projects (3-9-6)

Recognizing educational value of actual experience, the instructional schedule will be arranged for special projects and work assignments in various areas for the students so that they have an opportunity to apply principles and concepts studied.

Drafting and Design Technology

DDT-101 Technical Drafting (2-4-3)

This course is an introduction to the drafting skills required for the technician to communicate information and ideas graphically. Course topics include basic manual and computer-aided drafting techniques and the use of electronic symbols. Students prepare electronic diagrams.

DDT-102 Basic Electronic Drafting and Theory (3-3-4)

This course gives the student an overview of principles of electrical and electronics fields. Students study basic principles of direct current, series, parallel and series/parallel circuits. Students prepare representative diagrams of lab circuits encountered.

DDT-107 Basic Surveying (2-3-3)

This course covers measurement of distances and areas, traversing, elevations and mapping. This includes laying out terraces and ditches for water control.

DDT-108 Blueprint Reading (1-3-2)

This course is a study of the universal language of blueprint reading using drafting standards. Lines, sketching, three-view rawings, sections, dimensioning and tolerancing, bill of materials and title block information is stressed. Emphasis is on aircraft blueprints. This course is designed and recommended for Aviation Maintenance Technology.

DDT-112 Blueprint Reading (1-3-2)

This course is a basic study of industrial blueprints. Emphasis is placed on terminology, symbols, graphic description, system of measurements and standardization of blueprints to develop the ability to correctly interpret plans and drawings used by industry.

DDT-116 Basic Drafting (2-3-3)

This is a basic course in drafting principles and techniques, including orthographic projection, sections and dimensioning.

DDT-120 Civil Engineering Drafting I (2-4-3)

This is an introductory course in civil drafting. Emphasis includes plotting metes and bounds from legal descriptions, use of the vernier scale, figuring angles from bearings,

tangents, arcs and curve data. All projects are inked, and mechanical lettering is used in preparation of projects.

DDT-199 Co-op for Drafting & Design Technology (1-19-6)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

DDT-201 Advanced Blueprint Reading (3-2-4)

This course is based on American National Standards Institute standards for universality and stresses the interpretation of auxiliary and section views, assembly drawings, symbolism, dimensioning and tolerancing. It is liberally sprinkled with mathematics. Upon completion, the student should feel at entry-level in virtually any machine shop.

DDT-202 Mechanical Drafting II (3-3-4)

This course is a general study of pipe drafting, which includes familiarization of pipe fittings and related components. Students prepare single, double and isometric pipe spool drawings. Standard welding symbols, stock shapes and plate descriptions are covered and applied to fabrication drawings.

DDT-218 Facilities Layout and Design (2-4-3)

This is a course covering basic design principles, spatial concepts and technical site considerations for facilities planning and construction. Emphasis is placed on preparing drawings for the modification of existing commercial/ industrial structures and tracking facility usage.

DDT-298 Co-op for Drafting & Design Technology (1-39-6)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

DDT-299 Co-op for Drafting & Design Technology (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

DDT-305 Dimensioning and Tolerancing (2-4-3)

This course is a study of dimensioning, which is the correct application of numerical values to control size, form, surface, finish and specifications for manufactured parts. This course also covers tolerancing, which controls and limits dimensioning to provide for interchangeability of parts. Students follow theory with practical applications in preparing properly dimensioned and toleranced drawings.

DDT-327 Technical Illustrations (3-3-4)

In this course, students prepare drawings of multiple details, both assembled and exploded, from blueprints. Finished drawings should be in ink. Students explore shading sheets and other rendering media.

DDT-333 Surveying and Related Calculations (3-3-4)

This course covers surveying theory and practice. Students use surveying instruments and equipment on site, prepare field notes, perform related calculations and prepare appropriate drawings.

DDT-345 Introduction to CAD Keyboarding (1-4-2)

This course is an introduction to computers, operating systems and keyboarding related to CAD system operation. An overview of CAD systems and their uses is included. Students learn keyboard layout and use, selected operating system commands and graphics editing programs to create simple diagrams and drawings.

DDT-364 Civil Engineering Drafting II (3-4-4)

This is a course on contouring and map presentation. Students work with elevation data prepared from field notes and other sources, plot existing and proposed contours, prepare slope maps, lay out a lot's minimum size and use the planimeter in figuring acreage to drawings.

DDT-374 Civil Engineering Drafting III (2-4-3)

This course covers advanced drawing of civil projects. Water and wastewater systems, storm drainage and sanitary sewer systems or facilities, and street and highway improvement projects are illustrated with appropriate legends, abbreviations and symbols. All projects are inked.

DDT-375 Computer Graphics (3-3-4)

This course is an introduction to UNIX-based CAD software. Emphasis is placed on advanced CAD operations relating to two-dimensional drawing generation and modification. Data structure and advanced data associativity are discussed and implemented. Students explore UNIX system commands relating to CAD system operation.

DDT-380 Mechanical Drafting III (2-3-3)

This course is an overview of materials and processes used in manufacturing. Students prepare mechanical drawings, with emphasis placed on the forming and the fabrication of metals and plastics.

DDT-385 Advanced Computer Graphics (2-4-3)

This is a course in three-dimensional modeling, analysis and automated design. Students use one or more CAD programs to perform three-dimensional modeling and create fully annotated two-dimensional drawings from a three-dimensional model. Various programs for mass-property and finite element analysis are used for design verification.

DDT-398 Co-op for Drafting and Design Technology (1-39-6)

A continuation of DDT-298. Training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: DDT-298.

DDT-1104 General Drafting (2-6-4)

This is a basic course in the use and care of drafting instruments, geometric construction, line weights, multiview projections, basic sections and dimensioning techniques. Emphasis is placed on the development of good drafting techniques, as well as spatial visualization.

DDT-1203 Mechanical Drafting (2-4-3)

This is an intermediate course covering working detail drawings with proper dimensioning and tolerances. This course also includes the use of sectioning techniques, common fasteners, isometrics or obliques in the preparation

of assembly drawings with bill of material.

Prerequisite: DDT-1104.

DDT-1303 Architectural Drafting (2-4-3)

This course covers architectural lettering, scales, lines and other basic architectural drafting techniques. Students study basic architectural planning for frame type construction.

Prerequisite: DDT-1104.

DDT-1403 Electro-Mechanical Drafting (2-4-3)

This course is an overview of basic drawings needed for an electronic drawing project. Emphasis is placed on a printed circuit board and its enclosure. The overall project includes detail and assembly drawings with a parts list.

Prerequisite: DDT-1104.

DDT-1503 Computer-Aided Drafting I (2-4-3)

This course is an introduction to the principles of computer-aided drafting, including equipment, software and basic commands. Application of graphic system is used to construct and plot drawings.

DDT-2103 Descriptive Geometry (2-4-3)

This course is a study of the principles of descriptive geometry and their application to problems of industry. Emphasis is placed on visualization of lines and planes, auxiliary views, revolutions and intersections.

DDT-2203 Computer-Aided Drafting II (2-4-3)

This course provides the student with skills and techniques to utilize advanced features of a computer-aided drafting software package. Prerequisite: DDT-1503.

DDT-2303 Printed Circuit Board Design (2-4-3)

This course is an introduction to the design of single-sided and double-sided printed circuit boards and their manufacture. Emphasis is placed on drawings, art work and processes required to fabricate printed circuit boards.

DDT-3104 Electro-Mechanical Design Projects (2-6-4)

This is a course utilizing knowledge from previous courses to complete a data package for a selected electromechanical project. Emphasis is placed on required drawings, supporting documentation, checking procedures and revisions.

Economics***ECON-2301 Principles of Economics I - Macro (4-0-3)**

History development and application of macro economic theory underlying the production, distribution, and exchange of goods and services, utilization of resources; analysis of value and prices; national income analysis; fiscal policies; monetary and banking theory and policy. Distribution of income; labor problems; international economics; economic systems. Attention given to the application of economic principles to economic problems. (Formerly ECON-104)

***ECON-2302 Principles of Economics II - Micro (4-0-3)**

History development and application of micro economic theory underlying the production, distribution, and exchange of goods and services, utilization of resources; analysis of value and prices; national income analysis; fiscal policies; monetary and baking theory and policy. Distribution of income; labor problems, international economics; economic

systems. Attention given to the application of economic principles to economic problems.

Electrical/Electronic Core

EEC-150 Electrical Circuits (3-6-5)

This is an introductory course designed to cover the basic principles of direct-current and alternating-current, series- and parallel-circuits and an introduction to solid-state- and integrated devices.

EEC-155 Electrical Control Circuits (3-6-5)

This course covers general principles of electrical control circuits, with emphasis on controls using digital- and-solid-state devices. Prerequisite: EEC-150.

EEC-1001 D.C. Circuits I (2-4-3)

EEC 1001 is a first part of a two part series to cover EEC 1004, DC Circuits. This course will cover fundamentals and definitions including electricity, current, voltage, resistance, ohm's law, power, and other terms related to DC circuits. Analysis of series, parallel and series/parallel circuits will be presented. Also included is the solution of mathematical equations related to DC Circuits. Corequisite: MATH 090 or equivalent.

EEC-1002 D.C. Circuits II (2-4-3)

EEC 1002 is the second part of a two part series to cover EEC 1004, DC Circuits. This course will cover network theorems, including superposition, Thevenin's, Norton, Milliman's, and delta/wye conversions. DC component for magnetism, capacitance, and inductance, including time constants for charging and discharging as well as use of oscilloscopes for measuring input and output signals. Also included is the solution of mathematical equations related to DC Circuits. Prerequisite: EEC-1001; Co-requisite: MATH 1314.

EEC-1004 DC Circuits (2-8-4)

This course covers fundamentals of direct current which includes the study of Ohm's law, Watt's law, Kirchoff's laws, superposition, Thevenin and Norton's theorems, capacitance and inductance. Emphasis is placed on algebraic analysis of resistive networks and DC circuit measurements. Corequisite: MATH-1314.

EEC-1104 AC Circuits (2-8-4)

This course covers fundamentals of alternating current which includes series and parallel AC circuits, phasors, capacitive and inductive networks, transformers, resonance, filter and pulse characteristics. Emphasis is placed on methods of analysis and circuit measurements. Prerequisite: EEC-1004. Corequisite: MATH-1316.

EEC-1203 Digital Fundamentals (2-4-3)

An entry-level course in digital electronics using TLL and CMOS logic covering numbering systems, logic gates, flip-flops, encoders, decoders, counters, registers and a variety of other basic logic circuits. An introduction to A/D and D/A devices and digital systems is also presented. Corequisite: EEC-1104.

EEC-1303 Digital Applications (2-4-3)

An advanced course in digital electronics covering sequential

logic. Emphasis is placed on the application and troubleshooting of systems using counters, registers, code converters, multiplexers, analog-to-digital and digital-to-analog circuits and medium-scale integrated circuits. Prerequisite: EEC-1203.

EEC-1404 Semiconductors I (2-8-4)

This course is a study of the fundamentals of PN junction diodes, Zener diodes, light-emitting diodes, and bipolar transistors. Circuit and application coverage includes rectifiers; clippers, clampers and multipliers; LED displays and amplifiers. Device testing methods and circuit troubleshooting techniques are emphasized. Prerequisite: EEC-1104

EEC-1503 Semiconductors II (2-4-3)

This course is a study of several special purpose semiconductor devices, circuits and applications including JFETS, MOSFETS, oscillators, switching circuits, thyristors, optoelectronic devices and special application diodes. Prerequisite: EEC-1404.

Electronics Servicing

ELS-114 Basic Television Systems (2-4-3)

This course is an introduction to basic concepts of the block diagram of a monochrome television receiver. This course will cover the cathode-ray oscilloscope as used in exploring normal functioning of typical monochrome receiver circuitry.

ELS-199 Co-op for Electronics Servicing (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

ELS-204 Television Systems (2-6-4)

This course is an introduction to the color television receiver, its function, normal adjustments and the purity and convergence process. Students also cover the use of the color generator.

ELS-206 Electronics Servicing Practicum I (2-4-3)

This course emphasizes simulated and "live work" situations involving electronic test equipment and electronic circuit components.

ELS-207 Microcomputers I (2-4-3)

This course is an introduction to the fundamental operation of computer peripheral devices and how they interface with a microcomputer. This course covers various standards used within and between computers and their peripherals. Note: This course is offered only at the McAllen Extension.

ELS-216 Video Cassette Repair (2-4-3)

This course teaches students to install, operate and perform minor troubleshooting on video cassette recording equipment.

ELS-218 Electronics Practicum II (2-3-3)

This course covers troubleshooting "live projects" with the use of advanced troubleshooting techniques. Emphasis is placed on the use of electronic servicing equipment.

ELS-222 Audio Systems (2-3-3)

This course covers troubleshooting procedures on audio

systems using schematic diagrams and electronic test instruments.

ELS-270 Security Systems (2-3-3)

This course is an introduction to installation and maintenance of operational alarm systems, including proximity detectors, home alarms and auto burglar alarms.

ELS-298 Co-op for Electronics Servicing (1-39-6)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

ELS-299 Co-op for Electronics Servicing (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

ELS-398 Co-op for Electronics Servicing (1-39-6)

A continuation of ELS-298. Training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: ELS-298.

ELS-1001 Introduction to Electronics (0-2-1)

This course is a thorough review and understanding of the use of safety features, devices and methods utilized in the radio electronics industry, along with a complete knowledge of electrical terms, words and phrases.

ELS-1101 Electronic Components I (2-4-3)

This course looks at the usefulness of radio electronic symbols and components for identification purposes and their respective physical and electrical properties. Students identify and calculate the color code values of resistors. This course also provides an in-depth look into the theory and practical lab skill of calculating circuit voltages, currents, resistances and wattages of electronic components.

ELS-1201 Solid-State Devices (2-4-3)

This course is a review of the theoretical and practical lab skills utilized in effectively understanding, identifying and testing diodes, along with their characteristics. This course provides an in-depth look into the characteristic theory and effective troubleshooting applications of solid-state translators. A complete study of the many types of devices, other than transistors, including MOSFETS, TRIACS, JEETS, SCRs, etc., and the effective troubleshooting of such devices in the radio system is also covered.

ELS-1301 Electronics Servicing (2-8-4)

This course is a study and practical applications of VOMS and digital multimeters, with emphasis on their extensive usefulness to the electronics technician. It provides a study of the significant usefulness and practical application of a cathode-ray tube oscilloscope in electronic systems, including the ability of setup, measure and calibration of voltages and waveforms. This course includes a study of functional significance, effective testing and troubleshooting of power supplies, including the half-wave rectifier, the full-wave rectifier, the bridge rectifier, voltage doublers and regulated power supplies.

ELS-2001 Electronic Components II (2-6-4)

This course is a comprehensive look into the theory and lab testing of capacitors, including fixed and variable types, utilized in the electronic systems. A complete study of inductors and the relationship among inductance, frequency and the inductive reactance will be provided. Students will become knowledgeable in the theory and testing of numerous types of electrical transformers, including fixed and variable types, utilized in the system of a radio.

ELS-2101 Radio Servicing I (2-6-4)

This course is a study into assembling, fabricating and soldering through the use of a schematic diagram and wiring instructions. Students take a careful look and close study into the various techniques used to effectively service, repair and modify modern solid-state radio systems. Emphasis is placed on a systematic approach into the procedures and methods utilized in performing alignment techniques on AM and FM radio receivers. Prerequisite: ELS-2101.

ELS-2201 Radio Servicing II (2-4-3)

This course is a study of the practical application and significant usefulness of generators and frequency counters in troubleshooting. This course provides a study of the theory and troubleshooting of various types of amplifiers. This course covers the theory and practical usefulness of the modern radio demodulator, detector and AVC stages for AM and FM. Students look at the theory and testing of various types of oscillators and converters used in many radio systems.

ELS-2301 Introduction to Digital (1-3-2)

This course is the study of the theory and operation of digital circuitry found in electronic equipment. Students make a complete study of testing and troubleshooting logic gates with emphasis placed on hands-on digital circuitry.

ELS-2401 Advanced Radio Troubleshooting (1-3-2)

This is a course designed for hands-on applications which introduce the practical use of service theory as applied to a variety of modern electronic instruments and equipment. Prerequisites: ELS-2201, ELS-2301.

Electronic Technology

ELT-105 Electronic Hand Skills (1-4-2)

This course exposes the student to hand skills associated with electrical and mechanical technologies. Laboratory work emphasizes development of proficiency in soldering, chassis construction, measurements and construction of a power supply for use in later courses.

ELT-120 AC Circuit Analysis II (2-4-3)

This course is a combination of fundamentals of alternating currents to include electromagnetic inductive networks, complex networks, resonance and filters. Prerequisite: EEC-1104.

ELT-199 Co-op for Electronic Technology (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

ELT-205 Electronic Measurements (2-4-3)

This course is a study of electronic test instruments, proper use of instruments, accuracy and limitations of measurement and calibration techniques. Prerequisite: EEC-1004.

ELT-298 Co-op Education for Electronic Technicians (1-39-6)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

ELT-299 Co-op Education for Electronic Technicians (1-39-6)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

ELT-321 Industrial Power Supplies (3-4-4)

This course explores basic principles of electronic and industrial power supplies. Unregulated and regulated power supplies are covered, as well as filtering and protective circuitry. Prerequisite: EEC-1503.

ELT-376 Telecommunications (3-4-4)

This course is a continuation of advanced communications, covering transmission lines, antennas, waveguides and microwave principles. Prerequisite: ELT-2703.

ELT-398 Co-op for Electronic Technology (1-39-6)

A continuation of ELT-298. Training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: ELT-298.

ELT-1001 Introduction to Electronic Technology (1-0-1)

A survey course designed to acquaint the student with the job entry specifications and occupational opportunities in the field of electronics.

ELT-2003 Linear Integrated Circuits (2-4-3)

This course is a study of operational amplifier characteristics, operations, stabilization, testing and feedback techniques for application of operational amplifiers in computation, measurements, instrumentation and active filtering. Prerequisite: ELT-1503.

ELT-2403 Electronic Project (1-6-3)

The student will be required to plan and develop a project consisting of research, design, layout, construction and calibrating and/or testing. A formal written report and a presentation of the process and results is required. Prerequisite: Sixth quarter standing.

ELT-2503 Electronic Controls (2-4-3)

This course is a study of electronic control elements, DC and AC motors, SCR motor controls and closed loop speed position and speed controls. Prerequisites: ELT-120. Corequisite: EEC-1503.

ELT-2803 Communication Circuits (3-4-4)

This course is a study of modulation and demodulation techniques, with special emphasis on receiver applications and troubleshooting. Basic elements of transmission lines

and antennae with matching techniques are also covered.

Prerequisite: EEC-1404

ELT-3503 Pulse and Switching (2-4-3)

This course is a study of the steady state and transient characteristics of active devices operated in the switching mode, multivibrator circuitry and other switching circuits.

Prerequisites: EEC-1104, EEC-1203.

ELT-3703 Optoelectronics (2-4-3)

This course is an introduction to optical electronic devices and lightwave communications. Optical sources, detectors and fiber optics are covered. Prerequisite: EEC-1503.

LET-314 Laser Technology (3-4-4)

This course is the study of high-power lasers, both continuous and pulsed, including an in-depth study and operation of helium-neon, argon ion, neodymium, YAG, carbon dioxide, liquid dye systems and measurement of output.

Prerequisite: EEC-1503.

LET-1603 Fundamentals of Lasers and Laser Safety (3-4-4)

This course covers the theory of laser operation, characteristics of light emitted by lasers, components of lasers, laboratory procedures using lasers and safety considerations necessary for laser operation.

Emergency Medical Technology**EMS-111 Emergency Medical Technician (8-0-8)**

In this course, students are taught the overall role and responsibility of the Emergency medical Technician in performing both the emergency care and optional aspects of the job. Prerequisite: the student must be at least 18 years old 90 days after completion of the course.

EMS-116 EMT-Skills Lab (1-5-2)

This course is designed to develop student skills in diagnostic and emergency treatment procedures, just short of those rendered by physicians or by paramedical personnel under the direct supervision of a physician.

EMS-117 AMT-Clinical Rotation (0-5-1)

AMT clinical rotation offers the student an opportunity to observe, under direct supervision in the hospital, care given to patients. Emergency room, operating/recovery, ICC/CCU and OB/GYN are included in this course.

EMS-118 EMT-Ambulance (0-3-1)

Ambulance training provides an opportunity for the student to put newly acquired knowledge and skills into actual observation on actual ambulance runs and to develop good record keeping techniques.

EMS-121 EMT-Special Skills (2-0-2)

In this course, students reviews the role and responsibility of the Emergency medical Technician and receive orientation in the Special Skills program. Prerequisite: Texas Department of Health AM Certification.

EMS-122 Human Systems and Patient Assessment (1-0-1)

This course presents an overview of the human body and its system. Emphasis is placed on the understanding of the function of the human system and subsystems. This course also covers the skills needed to obtain a patient's history (immediate, medical and family), to conduct a primary and secondary assessment and to take diagnostic and vital signs.

EMS-123 Shock and Fluid Therapy (1-0-1)

Included in this course is a study of fluids and electrolytes, blood and its components, disorders of hydration and overhydration, symptoms and treatment of shock and techniques of management.

EMS-124 Respiratory System (2-0-2)

This course discusses the specific anatomical structures involved in normal respiratory function and the mechanics of respiration. The student must be able to accurately assess the specific pathophysiology in a patient. The skills of inspection, auscultation, percussion and palpation are demonstrated and practiced.

EMS-125 Obstetric/Gynecological Emergencies (1-0-1)

Students in this course study anatomy and physiology of the female reproductive system, patient assessment, pathophysiology and management of obstetric emergencies and the techniques of management.

EMS-126 Special Skills-Skills Lab (2-4-3)

The skills lab affords the student an opportunity to practice necessary skills in a controlled classroom setting, the student may be tested for EMT/Special Skills State certification. The student must be tested in all basic skills and in the skills required for Special Skills certification.

EMS-127 Special Skills Clinical Rotation (1-7-3)

In this course, the special skills student is introduced to the following experiences in clinical rotation: emergency room, ICU/CCU, operating/recovery room, labor/delivery suite.

EMS-128 Special Skills-Mobile Intensive Care Unit (0-6-2)

During the experience on the mobile intensive care unit, the student will have the opportunity to practice on actual patients under direct supervision in performing a patient assessment; maintaining airway in unconscious patients using manipulations and positions of head or mechanical aids; performing oxygen administration; performing one person cardiopulmonary resuscitation; and performing peripheral I.V. insertion.

EMS-131 General Pharmacology (1-3-2)

This course provides drug information, discusses the action of drugs, discusses the metric system and how to calculate drug dosages, discusses the administration of drugs and provides the techniques of administration.

EMS-132 Soft Tissue Injuries (1-0-1)

This course involves the study of anatomy and physiology of the skin, patient assessment for soft tissue injuries and the techniques of management.

EMS-133 Pediatrics and Neonatal Transport (1-0-1)

This course discusses the approach to the pediatric patient, pathophysiology and management and techniques of management and neonatal transport.

EMS-134 Emergency Care of the Emotionally Disturbed (1-0-1)

This course is designed to provide training in the recognition and care of emotionally disturbed patients encountered by paramedics in the field. Course topics include the emotional aspects of illness and injury, approach to the patient assessment, psychiatric emergencies and the techniques of management.

EMS-135 Medical Terminology (3-0-3)

Medical Terminology is a programmed text that provides a system for building the background language of medicine. Upon completion of the text, the student should be able to build thousands of medical words from Greek and Latin prefixes, suffixes, word roots and combining forms; recognize medical words from the Greek and Latin parts; spell medical words correctly; and use a medical dictionary.

EMS-136 Paramedic Skills Lab/Basic (0-5-1)

This course affords the student an opportunity to practice basic paramedic skills in a controlled classroom setting.

EMS-137 Paramedic Clinical Rotation/Basic (0-5-1)

In this course, the student is involved in the following areas: emergency room/basic; operating/recovery room/basic; I.V./basic; pediatric unit/basic; and labor/delivery suite.

EMS-138 Paramedic Mobile Intensive Care Unit/Basic (0-3-1)

During the experience on the mobile intensive care unit, the student will have the opportunity to practice on actual patients under direct supervision at the basic paramedic level. The student will perform patient assessment; maintain airway in unconscious patient using manipulations and positions of head or mechanical aids; perform oxygen administration, perform one person cardiopulmonary resuscitation; and perform peripheral I.V. insertion.

EMS-141 Cardiovascular System (2-2-3)

This course involves the study of anatomy and physiology, patient assessment, pathophysiology, reading and understanding a normal standing EKG, arrhythmia recognition and techniques of management.

EMS-142 Central Nervous System (1-0-1)

In this course, the student studies anatomy and physiology, makes an assessment of patients with neurological problems, studies pathophysiology and management of neurological problems and learns techniques of management.

EMS-143 Medical Emergencies (1-0-1)

This course is designed to introduce the student to the identification and management of various medical emergencies: diabetic emergencies, anaphylactic reactions, exposure to environmental extremes, alcoholism and drug abuse, poisoning and overdose, acute abdomen, genitourinary problems, emergencies in geriatric patients, aquatic emergencies and the techniques of management.

EMS-146 Paramedic Skills Lab/Intermediate (1-5-2)

This course affords the student an opportunity to practice intermediate paramedic skills in a controlled classroom.

EMS-147 Paramedic Clinical Rotations/Intermediate (1-5-2)

This course involves study of the emergency room, ICU/CCU, operating/recovery room and I.V.

EMS-148 Paramedic Mobile Intensive Care Unit/Intermediate (0-4-1)

During the experience on the mobile intensive care unit, the student will have further opportunity to practice on actual patients under direct supervision at the intermediate level. The student will perform patient assessment; maintain airway in the unconscious patient using manipulations and positions of the head or mechanical aids; perform oxygen administration; perform one person cardiopulmonary resuscitation; and perform peripheral I.V. insertion.

EMS-199 Co-op for Emergency Medical Services (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

EMS-211 Musculoskeletal Injuries (1-0-1)

This course involves the study of anatomy and physiology; patient assessment, including the signs and symptoms of fractures, dislocations, strains, sprains and the information that should be gathered from a patient with suspected musculoskeletal injury; pathophysiology and management; and the techniques of management.

EMS-212 Extrication/Rescue Techniques (1-2-2)

This course develops the student's basic understanding of principles and considerations involved in extricating persons from entrapment in varying situations.

EMS-213 Telemetry and Communication (1-0-1)

Through lecture, demonstrations and practice sessions, this course provides training in EMS communication techniques and procedures. The type of equipment involved is discussed and a description of how that equipment is employed in a system-wide communication network is provided. The regulating agency controlling all radio communications, the Federal Communications Commission (FCC), is described, as well as guidelines for the development of standard operating procedures and protocol.

EMS-214 Defensive Driving-EMS (1-2-2)

This course is offered to students to promote safe driving techniques. It will call the driver's attention to the magnitude of the traffic accident problem and is designed to teach drivers to recognize "tip-offs" in developing traffic accident situations, and to take evasive action in preventing collisions.

EMS-215 Advanced Paramedic Review (1-3-4)

This course brings together all past lecture courses in review form to enable the student to realize how each course is related and how the student should utilize all subject matter

in order to successfully perform as a paramedic. This course also helps prepare the student to take the state certification exam.

EMS-216 Paramedic Skills Lab/Advanced (1-6-3)

This course affords the student an opportunity to practice advanced paramedic skills in a controlled classroom setting.

EMS-217 Paramedic Clinical Rotation/Advanced (1-4-2)

This course explores the emergency room, pediatric unit, labor/delivery suite, psychiatric unit and morgue.

EMS-218 Paramedic Mobile Intensive Care Unit/Advanced (0-4-1)

During the experience on the mobile intensive care unit, the student will have additional opportunities to practice on actual patients under direct supervision at the advanced paramedic level. The student will perform patient assessment; maintain airway in unconscious patients using manipulations and positions of the head or mechanical aids; perform oxygen administration; perform one person cardiopulmonary resuscitation; and perform peripheral I.V. insertion.

EMS-298 Co-op for Emergency Medical Services (1-39-6)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

EMS-299 Co-op for Emergency Medical Services (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

EMS-398 Co-op for Emergency Medical Services (1-39-6)

A continuation of EMS-298. Training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: EMS-298.

Engineering***ENGR-1304 Engineering Graphics (2-4-2)**

This course provides an introduction to computer-aided drafting techniques. Course topics include methods of graphical communication, two and three dimensional drawing and presentation, working drawing, data analysis, design synthesis and production methods.

Prerequisite: Credit for or enrollment in COSC-1301 or IMT-1013.

***ENGR-2301 Engineering Mechanics I (Statics) (4-0-3)**

This course is a calculus based study of force systems, free-body diagrams, equilibrium, frames and machines, friction, centroids and moments of inertia.

Prerequisite: PHYS-2325, MATH-2413.

***ENGR-2302 Engineering Mechanics II (Dynamics) (4-0-3)**

This course is a calculus based study of kinematics and dynamics, including work-energy and impulse-momentum

methods, applied to engineering problems involving particles and rigid bodies. Prerequisites: ENGR-2301, MATH-2414.

***ENGR-2332 Mechanics of Solids (4-0-3)**

This course covers internal forces and deformations in solids, stress and strain in elastic and plastic solids and the application to simple engineering problems.

Prerequisites: ENGR-2301, MATH2414.

English

Developmental English

ENGL-70 Basic Oral Skills (2-3-3)

This course is designed for limited proficiency students who need intensive experience with standard English prior to attempting higher level English courses. The focus is upon listening, speaking and thinking skills needed for effective oral communication in interactive, task-oriented and social situations.

ENGL-71 Intermediate Oral Skills (2-3-3)

This course is a study focusing on a wide variety of communicative tasks and strategies, participatory communication and communication in everyday social and work situations.

Emphasis is placed on confident, easy handling of such listening and speaking tasks as complaining/apologizing, narrating, describing, explaining, distinguishing main ideas and details and expressing and defending opinions.

Prerequisite: ENGL-70 or equivalent.

ENGL-72 Basic Reading Skills (2-3-3)

This course is designed for students with limited English proficiency who need intensive instruction in basic work attack skills, vocabulary development and basic comprehension strands, including main idea, major and minor supporting details, retaining information, locating facts, inferences and critical reading.

ENGL-73 Intermediate Reading Skills (2-3-3)

This course is a study focusing on grammatical patterns, vocabulary and syntactic structures ordinarily encountered in academic/occupational reading. Emphasis is placed on fluency and accuracy with longer and more varied selections.

ENGL-74 Basic Writing Skills (2-3-3)

This course is designed for limited English proficiency students who need experience with writing standard English for social, academic and occupational purposes prior to attempting higher level English courses. The focus is upon practical writing needs, both format and informal. Emphasis is placed upon vocabulary, application of grammar, spelling, standard English usage and organization of ideas.

ENGL-75 Intermediate Writing Skills (2-3-3)

This course is a study emphasizing idea generation, organization, style, utilization of standard English and revision. This course provides continued focus on vocabulary, spelling, grammar and standard syntactic structures.

ENGL-80 Reading Skills I (2-3-3)

This course provides fundamental reading skills for students who can not demonstrate proficiency in reading on the TASP

or departmental placement test. Emphasis is placed on vocabulary, study skills, basic comprehension strands and comprehension strands. Prerequisite: ENGL-73 or equivalent.

ENGL-81 Reading Skills II (2-3-3)

This course emphasizes comprehension of basic forms of expository reading and critical reasoning skills in addition to vocabulary, study skills, basic comprehension strands and comprehension strands essential to success in academic and occupational fields of study. (3201035535)

Prerequisite: ENGL-80 or equivalent.

ENGL-85 Language Arts Review (0-2-1)

This course is an intensive review of reading and writing skills for students who will be taking the TASP in the immediate future. Students are provided with tutorial instruction designed to sharpen TASP-related and test-taking skills. Students take simulated TASP tests which will guide individual and group study in areas of reading comprehension, vocabulary, organization, style and utilization of standard written English. Prerequisite: Approval of the program chairman.

ENGL-90 Written Communication Skills I (2-3-3)

This course is designed for students who can not demonstrate proficiency in writing English on the TASP or the department placement test. Emphasis is placed on grammar and punctuation, sentence elements, sentence patterns, sentence combinations, paragraph organization and utilization of standard English. Prerequisite: ENGL-75 or equivalent.

ENGL-91 Written Communication Skills II (2-3-3)

This course emphasizes idea generation, essay development with grammar review and study of and practice in basic forms of expository writing. Prerequisite: ENGL-90 or equivalent.

Academic English

***ENGL-1301 Composition I (4-0-3)**

Principles and techniques of written composition, textual analysis, and critical thinking. Prerequisite: ENGL-81 and ENGL-91, or equivalent as determined by English placement test. (Formerly ENGL-104)

***ENGL-1302 Composition II (4-0-3)**

Further development in the principles and techniques of written composition, textual analysis, and critical thinking. Prerequisite: ENGL-1301. (Formerly ENGL-114)

***ENGL-2314 Technical and Business Writing I (4-0-3)**

Principles, techniques, and skills needed for college-level scientific, technical, or business writing. Standard technical documents and the internal report are emphasized. Prerequisite: ENGL-1301. (Formerly ENGL-124)

***ENGL-2315 Technical and Business Writing II (4-0-3)**

Principles, techniques, and skills needed for college-level scientific, technical, or business writing. Formal elements of reports with library research are emphasized. Prerequisite: ENGL-2314.

**Academic Course-credit is in semester hours.*

***ENGL-2316 Business Report Writing (4-0-3)**

Theory and applications for technical reports and correspondence in business. Editing, copy editing and substantive editing of standard technical documents are emphasized.

***ENGL-2322 British Literature I (4-0-3)**

This course is study of the development of English literature. This course covers reading of the major works representative of the Anglo-Saxon period to the beginning of the Romantic Movement. A research paper is required.
Prerequisites: ENGL-1301, ENGL-1302.

***ENGL-2323 British Literature II (4-0-3)**

This course is continuation of the study, in chronological sequence, of English literature. This course covers readings of major works representative of the Romantic and Victorian periods and from selected twentieth century authors. A research paper is required.
Prerequisites: ENGL-1301, ENGL-1302.

***ENGL-2326 American Literature I (4-0-3)**

This course is a critical study of the work of major American writers in their social philosophical contexts during major literary periods prior to 1870. A research paper is required.
Prerequisites: ENGL-1301, ENGL-1302.

***ENGL-2327 American Literature II (4-0-3)**

This course is critical study of the work of major American writers after 1870, examining literary, social and philosophical contexts. A research paper is required.
Prerequisites: ENGL-1301, ENGL-1302.

Farm and Ranch Management

FRM-102 Animal Husbandry (3-4-4)

This course studies breeds of individual livestock, selection breeding programs, registered herds and crossbreeding programs being used in ranching operations.

FRM-114 Animal Reproduction (3-3-4)

This course is the study of reproductive systems of farm animals and the relationship of these systems to the economics of ranch management.

FRM-116 Management of Records (2-4-3)

This course is a study of records kept for management purposes. Emphasis is placed on crop analysis and production.

FRM-118 Livestock Nutrition (3-4-4)

This course is the study of principal feedstuff for livestock and development of ration for different kinds of livestock.

FRM-123 Introduction to Farm and Ranch Equipment (2-4-3)

This course teaches students to set up and service farm and ranch equipment that is adapted to the local area. Students also learn to repair and recondition used equipment.

FRM-133 Livestock Science (2-4-3)

This course is the study of biology and chemistry used in industry to collect and analyze data in seeking answers for decision-making purposes.

**Academic Course-credit is in semester hours.*

FRM-206 Animal Genetics (3-3-4)

This course is an introduction to genetics and the study of inheritability. Students study systems of breeding applicable to animal improvement and techniques for evaluation of progeny.

FRM-214 Livestock Production (3-4-4)

This course is an application of scientific and technological advances in production practices of range beef cattle, sheep, goats and swine production and to feedlot practices.

FRM-223 Meat Selection, Evaluation and Grading (2-4-3)

This course covers meat carcass anatomy and retail cuts, U.S.D.A. carcass valuation for beef, pork and lamb and the marketing of these products.

FRM-224 Field Crop Production (3-4-4)

This course covers soil preparation, soil fertility, planting, production and handling of important crops.

FRM-234 Feedlot Production (2-4-3)

This course covers the topics of feedlots, preconditioning, feeding, working pens, buying and marketing.

FRM-243 Livestock and Plant Pests Management (2-4-3)

This is a practical course of study centered around pests that present problems to the livestock industry.

FRM-302 Forage and Pasture Production (3-4-4)

This course is a comprehensive study of range and forage plants, range improvements, brush control and winter, summer and temporary pastures.

FRM-314 Introduction to Agricultural Economics (3-3-4)

This course covers basic concepts, principles and applications of agricultural economics. Emphasis is placed on marketing, consumer demand and agricultural lending institutions.

FRM-354 Soil and Water Management (3-3-4)

This course prepares students to evaluate soil and water conservation structures, including diversion drops, chutes, irrigation and drainage systems and runoff determination.

FRM-364 Entomology (3-3-4)

This course is an introduction to biology, life history, classification and identification of insects that affect plants and animals.

Food Service Technology

FST-102 Food Preparation I (2-12-5)

This course is a study of the fundamental principles of food preparation and cookery. Emphasis is placed on basic techniques for preparing soups, salads, dressing, sandwiches, beverages, vegetables and cheese and egg cookery.

FST-105 Food Service Equipment and Planning (2-3-3)

This course is a study of various types of food service equipment and planning of equipment layout for product flow and efficient operation.

FST-107 Nutrition and Menu Planning (3-0-3)

This course is a study of the application of principles of nutrition in planning menus for various types of commercial, industrial and institutional food service.

Prerequisite: FST-113.

FST-108 Sanitation and Safety (3-0-3)

This course covers sanitation and public health as related to the food service industry. Potential hazards that may occur in the operation and production of food are also studied.

FST-109 Food Production and Planning (3-0-3)

This course is built from basic mathematical skills in addition, subtraction, multiplication and division of whole numbers and decimals, and moves into everyday skills used in the food service industry. This includes percentages, weights and measures, ratio and proportion, weights and measures conversions, determination of portion costs for menu items and complete menus, portion control and the increase and decrease of standard recipes.

FST-110 Hotel, Restaurants and Institutional Meats (2-3-3)

This course is a study in the identification and characteristics of wholesale and retail cuts of meat, as well as hotel, restaurants and institutional cuts of meat, U.S.D.A. quality grades, quality control, the Federal Meat Inspection Regulation.

FST-111 Food Preparation II (2-12-5)

This course is a continuation of the fundamental principles of food preparation. Emphasis is placed on preparation of meats, poultry, fish, baked goods and desserts.

Prerequisite: FST-102.

FST-113 Basic Nutrition (3-0-3)

This course is designed to introduce the many facets of nutrition. This includes the vocabulary necessary to effective communication, the community problems, the nutritive processes of our bodies and the understanding and interpretation of the practical guides for dietary planning.

FST-199 Co-op for Food Service Technology (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study.

Prerequisite: Fifth-quarter standing.

FST-202 Baking (2-6-4)

In this course, emphasis is placed on products used in baking, including their characteristics. Practical experience is given in yeast-made products, cakes, pies, puddings, icings and frostings.

FST-203 Food Service I (1-8-3)

This course consists of waiter/waitress service as found in various types of food service operations. It is designed to illustrate the techniques and problems, rather than to produce professional waiters/waitresses. Identification and use of the various items used in table service, as well as table settings, are emphasized.

FST-209 Food Purchasing and Handling (3-0-3)

This course is a study of purchasing food products, including

quantity and seasonal purchasing, pre-prepared items and inventory standards and controls.

FST-298 Co-op for Food Service Technology (1-39-6)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study.

Prerequisite: Fifth-quarter standing.

FST-299 Co-op for Food Service Technology (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study.

Prerequisite: Fifth-quarter standing.

FST-304 Food Service Management (2-8-4)

This course covers areas of food management, including scheduling, food production, food service personnel relationships, administration and point-of-sale systems.

Prerequisites: FST-102, FST-111, FST-305.

FST-305 Quantity Procedures I (1-12-5)

This course covers the theories and applications for the operation of commercial, institutional and industrial food services. Emphasis is placed on quantity cookery and distribution. Prerequisites: FST-102, FST-111.

FST-308 Food Service Records (3-0-3)

This course covers record keeping requirements for food service operations. It includes types of work papers, analysis sheets, profit and loss, inventories and other special applications.

FST-312 Special Projects and Field Work (2-9-5)

In this course, students are assigned to projects in campus facilities or off-campus locations, or to research dealing with food preparation.

FST-314 Specialized Food Preparation (2-8-4)

This course is a study of local and international cooking with actual preparation of local favorite dishes and common international favorites. Prerequisites: FST-102, FST-203.

FST-340 Professional Techniques for Cooks/Caterers (2-3-3)

This course is a study and practice of professional techniques for cooks and caterers. This includes planning menus, serving, garnishing, preparing hors d'oeuvres and displaying food showmanship. Prerequisites: FST-102, FST-203.

FST-398 Co-op for Food Service Technology (1-39-6)

A continuation of FST-298. Training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: FST-298.

General Technology**GT-112 Human Relations (2-3-3)**

This course is a study in the interaction of people in the business and industrial complex. Emphasis is placed on the necessity for a cooperative environment to satisfy individual needs as well as to increase productive efficiency.

GT-205 Shop Safety (2-0-2)

This course enables students to recognize hazards and potential hazards as they may occur in the shop. Specific emphasis is placed on federal safety requirements under the Occupational Safety and Health Act.

GT-207 Industrial Accounting I (2-3-3)

This course acquaints the student with the relationship between accounting and business. The student develops an understanding of steps of the accounting cycle and of principles and procedures in handling cash.

GT-209 Industrial Accounting II (2-3-3)

This course equips the student with an understanding of accounting systems, particularly cash receipt, cash payments, purchase and sales; develops an understanding of control procedures, end-of-period adjustments procedures and managerial use of accounting information; develops competency in various methods of handling, paying and recording payroll taxes; acquaints the student with the data processing system.

GT-211 Elements of Supervision (3-0-3)

This course is a study of supervisory theories, procedures and responsibilities in organizations and concepts and techniques used to plan, analyze, organize, lead and control efforts of others.

GT-230 Principles of Management (3-0-3)

This course presents the whole area of activity known as business. Students learn terminology essential to the modern business world. Students study various forms of business ownership and the function of business in the nation.

GT-262 World of Work (2-0-2)

To expedite the transition from college to the work environment; includes discussion of workplace culture and application of knowledge, values, and skills to the development of a "quality work force". Emphasis will be on skills needed to survive in the work environment. The course will cover all phases of attaining and maintaining employment.

GT-1001 Orientation (1-0-1)

This course acquaints students with the history, philosophy, organizational structure and applicable policies and procedures of TSTC. An overview of student services, various course offerings and seminars and community resources is provided. This course provides information on certificate and degree requirements, developmental courses and the Texas Assessment of Scholastic Performance (TASP) test. Certificate and/or degree plans will be completed by the students and filed with the Office of Admissions and Records. Credit is limited to either GT-1001 or GT-1003.

GT-1003 Introduction to College Life (0-3-1)

This course is designed to increase student's success in College. Course topics include goal setting, study skills, time management, test taking techniques and library usage. The content of Orientation (GT-1001) is also included. Credit is limited to either GT-1001 or GT-1003.

GT-1013 Computers and Technology (2-3-3)

This course is a general computer literacy course to develop

**Academic Course-credit is in semester hours.*

student awareness of the expanding role of computer technology, and to provide rudimentary knowledge and skills related to the personal, social and technical uses of microcomputers.

GT-1113 Interpersonal Relations in the Medical Field (2-3-3)

This course is a study of human behavior in modern health-care facilities. Emphasis is placed on the social, organizational and human elements encountered in the typical medical work environment

Government***GOVT-2301 American Government I (4-0-3)**

This course is an introduction to the principles of the American system of government, and to the origins, development and structure of the constitutions and government of Texas and the United States.

***GOVT-2302 American Government II (4-0-3)**

This course is a study of the theory and practice of the American government, including political participation, civil rights and liberties, public economics and foreign policy.

**Health Information Technology
(Formerly Medical Record Technology)****HIT-205 Health Information Systems I (3-3-4)**

Items covered in this course include: origin, use, content and format of health records; storage and retrieval systems; numbering and filing systems; record retention procedures; accreditation, certification and licensure standards applicable to health records; format and maintenance requirements of various indexes and registries; medical staff organization and bylaws. Laboratory work is required.

HIT-215 Basic Pharmacology(3-0-3)

This course is a basic introduction to the general concepts of pharmacology. This includes specific body systems, their diseases and therapeutic drug applications.
Prerequisite: BIOL-2402 with a letter grade of "C" or better.

HIT-255 Medical Legal Aspects (3-2-4)

Course topics include: legal terminology and procedures; the court system, policies and procedures for control and use of personal health information; health care legislation and regulations relating to maintenance of confidentiality and appropriate use of health records; and ethical standards for health record practice.

HIT-265 Pathophysiology I (5-0-5)

This course is an overview of the nature, cause, treatment, and management of pathological, microbial and clinical disease processes with an introduction to specific organs and their diseases.
Prerequisite: BIOL-2402 (with a letter grade of "C" or better).

HIT-266 Pathophysiology II (5-0-5)

This course is a continuation of HIT -65 with continued emphasis on specific organs and their diseases.
Prerequisite: HIT-265.

HIT-305 Health Information Systems II (3-3-4)

This course is a continuation of HIT-205, including, but not limited to, the following types of health care facilities: extended care facilities, ambulatory care, hospices, ambulatory surgery, home health, mental health and mental retardation, psychiatric, Preferred Provider Organizations, health maintenance organizations and group practice. Laboratory work is required.

Prerequisite: HIT-205 with a letter grade of "C" or better.

HIT-308 Directed Practice I (1-8-3)

In this course, students have the opportunity to correlate didactic and laboratory experiences of HIT-205 and HIT-305 with clinical learning experiences in health care facilities.

Students participate in group discussions covering topics arising from the directed practice.

Prerequisites: HIT-205, HIT-305, with a letter grade of "C" or better.

HIT-325 Quality Assurance (3-3-4)

This course covers the concept of methodologies for conducting quality assurance activities. This includes concurrent and retrospective methodologies and multidisciplinary approaches. This course includes a study of the prospective payment system's impact on health information systems. Laboratory experience is required. Prerequisites: HIT-305, HIT-308, HIT-340, HIT-266, with a letter grade of "C" or better.

HIT-340 Basic Coding (3-3-4)

This course includes a basic introduction to coding and indexing procedures with emphasis on ICD-9-CM. Exposure to the principles of other classification systems and nomenclatures. Laboratory experience is required.

Prerequisites: BIOL-2402 (with a letter grade of "C" or better), HIT-305, HIT-215. Corequisite: HIT-266.

HIT-345 Health Care Statistics (2-3-3)

This course covers descriptive and vital statistics, reporting requirements and definitions and formulas for computing hospital and public health statistics. Laboratory experience is required.

HIT-355 Advanced Coding (3-3-4)

This course is a continuation of HIT-340 with further emphasis on ICD-9-CM and DRGs. This includes sequencing, assigning principal diagnosis and principal procedure. Laboratory experience is required.

Prerequisite: HIT-340, with a letter grade of "C" or better.

HIT-356 Ambulatory Coding (3-3-4)

This course covers principles of ambulatory coding with an introduction to CPT-4 coding procedures, including the use of HCPCS. Laboratory experience is required.

Prerequisite: HIT-355 with a letter grade of "C" or better.

HIT-360 Medical Record Management (3-3-4)

Items covered in this course include: principles of authority/responsibility; delegation and effective communication; organization charts, job descriptions and policies and procedures; employee motivation, discipline and performance evaluation. Laboratory work is required.

HIT-365 Directed Practice II (0-20-5)

In this course, students are assigned to health information centers for the last six weeks of the quarter to receive experience in technical aspects of health record science that are covered in HIT-255, HIT-325, HIT-340, HIT-345, HIT-355, HIT-356, HIT-360 and IMT-1425. A pre- and post practicum seminar will also be held. Directed Practice II experience is received under the supervision of a registered record administrator or accredited record technician. Students must have completed major courses with a letter grade of "C" or better.

History***HIST-1301 United States History to 1877 (4-0-3)**

This course provides an integration of social, political and economic history of the United States. Course topics include discovery; the colonial period; the American Revolution; establishment of the nation; political, territorial and socio-economic growth; the sectional controversy; the Civil War; and the reconstruction in the South to 1877.

***HIST-1302 United States History since 1877 (4-0-3)**

This course provides an integration of social, political and economic history of the United States. Course topics include the growth of transportation and industry; the agrarian protest and movement toward economic and political reform; the creation of an overseas empire; the United States in two world wars; and the Cold War and the role of the United States as a dominant world power.

Industrial Maintenance Mechanics**IMM-101 Introduction to Fluid Systems (3-3-4)**

This course introduces the basic principles of industrial hydraulic power and acquaints the student with the major components of typical systems. This course includes schematic reading, maintenance and troubleshooting.

IMM-103 Mechanical Power Transmission (2-3-3)

This course covers the maintenance and repair of power transmission systems involving gear, V-belt and chain drives, with emphasis on both plain and anti-friction bearings.

IMM-105 Pumps and Compressors (2-3-3)

This course is an introduction to the theory of operation of various types of pumps and compressors. Laboratory activities include maintenance, repair and overhaul procedures to be used on common process pumps and compressors.

IMM-130 Industrial Relations and Safety (2-4-3)

This course is a study of organizational structure, policies and safety procedures used in industrial maintenance settings.

IMM-160 Mechanical Piping (2-4-3)

This course is an introduction to mechanical piping systems to include blueprint reading, selection, assembly and repair of piping materials.

IMM-201 Industrial Fluid Systems (3-3-4)

This course is a review of basic hydraulic theory and systems followed by a study of the operation and repair of various design configurations for system components, including

pumps, actuators, valves and accessories. Students also study a variety of common industrial hydraulic circuit configurations. Prerequisite: IMM-101.

IMM-204 Rigging and Conveying Systems (2-3-3)

In this course, the student mechanic is prepared to safely move, both vertically and horizontally, heavy objects using the appropriate media, such as fiber rope, wire rope, or chain in conjunction with the necessary hardware and lifting devices, such as hoists and cranes, all of which are common to the industrial workplace. Inspection, care and maintenance of rigging equipment is stressed, whether it be used in maintenance activities, construction activities, or in production capacities, referred to as material handling systems.

Information Management Technology

IMT-105 Computer Concepts (3-0-3)

This course is a general computer literacy course on topics which include history, terminology, system components, language, applications and the impact of societal ethical issues involving computers.

IMT-118 Introduction to Desktop Publishing (2-4-3)

This course is an introduction to desktop publishing on a microcomputer.

IMT-126 Data Storage and Retrieval (1-4-2)

This course covers basic concepts of data and computer storage structures. The organization and maintenance of data files and sorting/searching techniques are studied. This includes developing projects using various commercially available microcomputer software packages to develop business applications involving data storage and retrieval.

IMT-199 Co-op for Information Management Technology (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

IMT-216 Software Integration (2-4-3)

This course covers integration of multiple software programs with emphasis on merging various data bases with word processors to produce multiple personalized letters.

IMT-218 Intermediate Desktop Publishing (2-4-3)

This is an intermediate course in the design and printing of business documents (brochures, flyers, pamphlets and manuals) using industry standard desktop publishing software.

IMT-230 Introduction to Mainframe Operating Systems (2-4-3)

This course is a study of mainframe operating system principles, including procedure activation, memory management, process management, resource allocation and protection. Course topics also include utilities, text editors and file management.

IMT-298 Co-op for Information Management Technology (1-19-3)

In this course, training is provided under the joint cooperation

of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

IMT-299 Co-op for Information Management Technology (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

IMT-316 Software Installation (1-4-2)

This course covers techniques of software installations using reference manuals. Students develop reference manuals from which software installation is performed.

IMT-350 Work Station Components (2-4-3)

This course is a survey of various peripheral equipment used with an automated work station. This course includes labs in setting up and adjusting equipment. Cabling and connecting devices are studied and then made.

IMT-370 Local Area Networks (2-3-3)

This course covers local area networks (LANs) and their interaction with other types of networks. Course topics include network architecture, signaling methodologies, topologies and transmission media. Linking LANs to each other and other networks, security issues and implementation of standard LANs are discussed.

IMT-375 Mainframe/Microcomputer Communications (2-4-3)

This course is a study of the integration of microcomputer information with mainframe information. Downloading and uploading of data and information for use on microcomputers is emphasized.

IMT-380 Integrated Work Stations (1-4-2)

This course is a practicum in designing and implementing a work station to perform common industry functions.

IMT-390 Networking Applications and Management (1-4-2)

This course covers installation, use and management of a local area network.

IMT-395 Advanced Communication Techniques (1-4-2)

This course covers the latest developments for hardware and software in information transfer.

IMT-398 Co-op for Information Management Technology (1-39-6)

A continuation of IMT-298. Training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: IMT -98.

IMT-1013 Introduction to Computer Applications (2-4-3)

This course is an introduction to microcomputer operations and the use of application software. Microcomputer topics include word processing, spreadsheet analysis and data base. Topic reinforcement is accomplished through laboratory experience.

IMT-1213 Microcomputer Operating Systems (2-4-3)

This course is a detailed study of microcomputer operating systems, including batch processing, file management, set-up and configuring of a hard disk, formatting and partitioning and the use of operating system utilities to manage a microcomputer system. Prerequisite: IMT-1013 or work experience with PC-DOS or MS-DOS.

IMT-1425 Computers in Health Care (3-3-4)

This course covers hardware and software components of computers for integrated systems in health care, including medical record applications. This course also covers methods for controlling accuracy and security of data. Record linkage and data sharing concepts are studied. Laboratory experience is required.

IMT-2213 Electronic Spreadsheets (2-4-3)

In this course, various software applications utilizing spreadsheet analysis are introduced. The study of components, uses and problems are covered. The designing and editing of templates, graphics, macroprogramming and uploading and downloading of files are covered through laboratory experience.

IMT-2412 Management Applications (1-4-2)

This course is a survey of manual and electronic tools for scheduling, keeping calendars, project management, message exchange and graphics.

IMT-2513 Data Base Applications I (2-4-3)

This course is an introduction to data bases and their applications in business and data systems management. Other topics include the hierarchical, network and relational approaches to data base design. Commercially available data base management systems are used through laboratory experience.

IMT-2613 Data Base Applications II (2-4-3)

This course is an advanced study of electronic data bases using commercial software and the use of spreadsheets found in business. Emphasis is placed on designing and creating menu-driven applications for business. Data independence, file structures, integrity and data security are also discussed in detail.

Instrumentation Technology

INT-102 Instrumentation Hand Skills (1-4-2)

This course exposes the student to hand skills associated with instrumentation technology. Prerequisite: None

INT-115 Industrial Electricity & Motors (2-4-3)

This course is a study of common industrial electrical power devices, circuitry, and controls. Electrical safety, hands-on measurements, servicing, troubleshooting and repair, and selection of basic industrial electrical devices are emphasized in laboratory exercises.

Prerequisite: ENGL-1301, MATH-1314, EEC-1004.

INT-199 Co-op for Instrumentation Technology (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

INT-202 Measurements and Calibrations (2-4-3)

This course is a study of calibration and test instruments, the accuracy and limitation of instruments, and calibration techniques. Prerequisite: INT-215.

INT-214 Pneumatic Systems (2-4-3)

This course is a study of pneumatic systems and controls used in instrumentation.

INT-215 Industrial Electrical Control (2-4-3)

This is an advanced course in industrial electrical systems with emphasis on automatic control of electrical power application to process control equipment. SSR's, solid-state logic relays, timers, and safety interlocks and alarms, are incorporated into laboratory exercises involving the application of ladder logic control circuitry.

Prerequisite: EEC-1104, INT-115. Corequisite: EEC-1404.

INT-298 Co-op for Instrumentation Technology (1-39-6)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study.

Prerequisite: Fifth-quarter standing.

INT-299 Co-op for Instrumentation Technology (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study.

Prerequisite: Fifth-quarter standing.

INT-305 Temperature Control (3-4-4)

This course analyzes temperature process control loops and temperature measuring devices. Laboratory exercises involve the installation, testing, calibration, and application of commonly used thermal devices such as RTD's, Thermocouples, and Filled-Systems to control process temperature. Thermal physics is applied.

Prerequisites: INT-202, INT-214.

INT-315 Safety Interlock Systems (2-4-3)

In this course of study, the student analyzes, selects and installs, tests, and calibrates various safety devices used in the process industry. These devices and systems are examined as they relate to ISO-9000 PSM.

Prerequisites: IN-2103, INT-2003.

INT-398 Co-op for Instrumentation Technology (1-39-6)

A continuation of INT-298. Training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: INT-298.

INT-1100 Introduction to Instrumentation Technology (1-2-2)

This survey course familiarizes the student with industries employing Instrumentation Technicians. Hazardous industrial locations and safe work practices are specified by appropriate authorities are studied. ISO-9000 PSM concepts are introduced. Fire prevention and fire fighting techniques are discussed and demonstrated.

INT-2003 Unit Operations (2-4-3)

This course covers the complete static and dynamic aspects of several processes. Emphasis is placed on the automatic control requirements of these processes.

Prerequisite: INT-202, INT-214.

INT-2103 Control Loops (2-4-3)

In this course, students are introduced to control loops utilizing transmitters, controllers, motorized valves and auxiliary devices used in continuous and batch processes. Emphasis is placed on pressure level, flow and temperature applications. Prerequisites: INT-202, INT-214.

INT-2303 Flow Measurement and Calculations (2-4-3)

This course covers the practical methods of flow measurements and flow integration. Orifice selection is stressed. Emphasis is placed on calculation methods in accordance with AGA and API standards. Prerequisite: INT-202, INT-214.

INT-3105 Pressure, Vacuum, and Level Control (2-4-3)

This course is a study of common pressure, vacuum, and level measurement and control instruments. Laboratory exercises involving the selection, calibration, installation, and testing of these instruments is performed. Prerequisite: INT-202, INT-214.

INT-3205 Computer Based Process Control (3-4-4)

This course is a study of computer based process control. Control systems and strategies are analyzed. Laboratory emphasis is on the interfacing of process control instruments and loops to DCS, PLC, and PC control systems. Prerequisites: CMT-1603, EEC-1203, EEC-1503, INT-2103.

INT-3313 Analytical Instrumentation (3-4-4)

In this course, emphasis is placed on the utilization of analytical instruments in continuous process applications. Consideration is given to instrument types, such as chromatography, pH, conductivity and mass spectrophotometry. Prerequisites: CHEM-1411, CMT-1603.

Machining Technology

MGT-199 Co-op for Machining Technology (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

MGT-200 Manufacturing Process/Machining (2-4-3)

A study of manufacturing processes using machining tools which includes lathes, mills, and precision measuring instruments.

MGT-211 Heat Treatment and Precision Grinding (2-8-4)

This course is an introduction to heat treatment and precision grinding. Students learn to operate the equipment used in heat treating, and properly operate precision grinding tools. Successful completion acquaints the student with the normal and more difficult procedures.

MGT-298 Co-op for Machining Technology (1-39-6)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

MGT-299 Co-op for Machining Technology (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

MGT-303 SPC for Machinist (1-2-2)

This course is an introduction to the concept of statistical process control (SPC) used by machinists and machine operators in a shop. Students analyze data from inspected parts, study different types of variation in sizes and recognize the reason for control charts. Corequisite: MGT-2011.

MGT-398 Co-op for Machining Technology (1-39-6)

A continuation of MGT-298. Training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: MGT-298.

MGT-1103 Precision Tools and Measurements (2-4-3)

This course is an introduction to the function and reason for measurements and the relationship between the different types of measuring tools that a machinist is required to use. Successful completion allows the student to select the proper measuring tools and check their machining efforts to a high degree of accuracy and reliability.

MGT-1204 Bench Work and Layout (2-8-4)

This course is an introduction to bench work and layout. The student is taught to use common hand tools in the machine shop industry. The student is also taught to read steel rules and the conversion of fractions to decimals. Students are taught to read a blueprint and successfully lay out a workpiece to be completed with other machine shop tools.

MGT-1304 Basic Shop Machines (2-6-4)

This course is an introduction to basic machine tools, in which the student learns about handsaws, both horizontal and vertical. The student is also taught about radial drill presses, sensitive and upright drill presses. The student learns of the safety precautions on machine tools. Students learn about the accessories used on drill presses and handsaws. The student is taught to calculate the correct cutting speeds for the various metals and their alloys.

MGT-1404 Basic Lathe (2-8-4)

This course is an introduction to the engine lathe. Nomenclature of the major parts and their functions is covered. The mechanical design of the machine, including all accessories and controls, is thoroughly studied to give the student a good understanding of how each mechanical component operates. The student becomes acquainted with all the adjustment and lubrication points of the machine to properly maintain it in good working order.

MGT-1504 Basic Milling Machines (2-8-4)

This course is an introduction to the vertical and horizontal milling machines. The nomenclature, cutting speed, feedrate, basic operations and basic normal set-ups for the vertical and horizontal milling machine are studied. Successful completion acquaints the student with the normal function of the milling machines.

MGT-2011 Applied Shop Math (2-0-2)

This course covers formulas for set-up of speed, feeds, tapers and angles when using lathes, mills and grinders in a machine shop. Students demonstrate the ability to set-up machines using the formulas worked. The x-y-z coordinate system of machine travels is introduced.

MGT-2104 Advanced Lathe (2-8-4)

This course is a continuation of the basic lathe course. The cutting operation of the engine lathe is studied. Mathematical calculations are applied to all operations. Students perform required operations on lathe projects, such as turning, boring, internal and external threading, cutting tapers, finish and assembly of all projects to achieve accuracy to within .0005/ inch. Prerequisite: MGT-1404.

MGT-2204 Advanced Milling Machines (2-8-4)

This course is a continuation of vertical and horizontal milling machine operations. The work- holding devices and attachments for the milling machines are studied. Successful completion acquaints the student with the normal and more difficult functions of the milling machines. Prerequisite: MGT-1504.

MGT-2303 Introduction to CNC (2-4-3)

This course gives the student a basic knowledge of numerically controlled (NC) and computer numerically controlled (CNC) machine tools. This course is specifically designed for the student to understand the difference between conventional and numerically controlled machines. Emphasis is placed on safety with CNC machines. Principles of programming, tooling, set-up and machine operations are studied.

MGT-2406 Advanced CNC (3-9-6)

This course is a continuation of the basic CNC course. It extends the principles of numerical control to actual machine operations. Basic descriptions are given of computer-assisted programs. Both CNC lathe and CNC milling machine applications are utilized for the machining of complete units or student laboratory projects. Prerequisite: MGT-2303.

MGT-3012 Parts Inspection (1-3-2)

This course is an introduction of quality control inspection used in machine shop departments within manufacturing companies. The student can use this as an informative guide that aids them in producing, inspecting and controlling quality products. The student is taught to complete an inspection worksheet and inspect machine workpieces through proper inspection procedure. The student is introduced to the concept of statistical process control. Prerequisite: MGT-1103.

Mathematics***Developmental Mathematics*****MATH-80 Developmental Mathematics (2-3-3)**

This course is a study of fundamental mathematics using addition, subtraction, division, multiplication, order of operations, percents, exponents and scientific notation to solve problems using rational numbers.

MATH-85 Elementary Algebra (2-3-3)

This course is a study of fundamental mathematics and elementary algebra, including use of number concepts and computations, solving word problems involving fractions, interpreting graphs and tables, graphing numbers and relationships, solving equations and word problems in one or two variables. Prerequisite: MATH-80.

MATH-90 Introductory Algebra and Geometry (2-3-3)

This course is a study of algebra and geometry including operations with polynomials, solving word problems with quadratic, radical and fractional equations, solving word problems applied to two- and three-dimensional figures, applying reasoning skills in solving word problems applied to geometry using similarity, congruence, parallelism, perpendicularity, inductive and deductive reasoning. Prerequisite: MATH-85.

Technical Math**MTH-103 Applied Technical Mathematics (2-3-3)**

This course covers basic concepts of arithmetic, geometry, algebra and trigonometry, but only as they are commonly utilized by specialists in the students' applicable fields of study. Lectures are supplemented by applied, related labs and individualized assistance.

MTH-105 Technical Mathematics (2-3-3)

This course is designed to provide students with mathematical skills needed for success in technical programs. Course topics include simple algebraic expressions, simple equations, verbal problems, exponents, roots, radicals, linear equations and graphs, right triangle trigonometry and measurements. A greater emphasis is given to the solution of the applied problems.

MTH-106 Technical Business Mathematics (2-3-3)

This course is designed to help students solve common business problems and be able to apply mathematical principles to business-related activities. This course covers bank records, ratio and proportion, base rate and percentage, trade and cash discounts, retail merchandising, payroll, interest, finance, real estate and depreciation.

MTH-109 Mathematics for Aviation Mechanics (3-2-4)

This course covers basic concepts of arithmetic, geometry and algebra. Emphasis is placed on computation involving ration and proportion, weights and measures, areas and volumes and simple linear equations.

Academic Mathematics***MATH-1314 College Algebra (4-0-3)**

The study of complex numbers, exponential and logarithmic functions, inequalities, determinants and matrices, and sequences and series. The course includes non-linear systems of equations and higher-degree equations. Prerequisites: MATH 090 or equivalent determined by MATH Placement Test. (Formerly MATH-114)

***MATH-1316 Plane Trigonometry (4-0-3)**

Topics in trigonometric functions, right triangles, trigonometric identities, radian measure, graphs of periodic functions, and oblique triangles. Prerequisite: MATH-1313. (Formerly MATH-124)

***MATH 1321 Mathematics of Finance(4-0-3)**

Simple interest and discount, compound interest, annuities, amortization, sinking funds, stocks and bonds. Prerequisite: MATH-1314. (Formerly MATH-144)

*Academic Course-credit is in semester hours.

***MATH-1324 Business Algebra (4-0-3)**

Course topics include those from College Algebra which apply to business and economics, the application of math of finance, the applications of linear equations and inequalities and linear programming. Prerequisite: MATH-1314.

***MATH-1325 Business Calculus (4-0-3)**

Course topics include applications of differential and integral calculus to business and economics, probability and statistics. Prerequisite: MATH-1324.

***MATH-1332 College Mathematics (4-0-3)**

Modern algebra and geometry. Topics may include sets, logic, number systems, number theory, functions, equivalence, congruence, measurements, other geometric concepts, and the introduction to probability and statistics. (Formerly MATH-103)

***MATH-1342 Statistics (4-0-3)**

Presentation and interpretation of data, probability, sampling. Correlation and regression, analysis of variance, and use of statistical software. Prerequisite: MATH-1314. (Formerly MATH-144)

***MATH-1348 Analytic Geometry (4-0-3)**

Lines, circles, and other conic sections; transformation of coordinates; polar coordinates; parametric equations. Prerequisite: MATH-1316.

***MATH-2312 Precalculus (4-0-3)**

Applications of algebra and trigonometry to the study of elementary functions and their graphs including polynomial, rational, exponential, logarithmic and trigonometric functions, may include topics from analytical geometry. Prerequisite: MATH-1316. (Formerly MATH-154)

***MATH-2413 Calculus I (5-0-4)**

Limits, continuity, the derivative with applications and integration of polynomials. Prerequisite: MATH 2312. (Formerly MATH-164)

***MATH-2414 Calculus II (5-0-4)**

Derivatives and integral of transcendental functions, integration methods and applications, infinite sequences and series. Prerequisite: MATH-2413. (Formerly MATH-174)

***MATH-2415 Calculus III (5-0-4)**

The study of vectors, partial differentiation, and multiple integral. Prerequisite: MATH-2414.

Medical Information Specialist/Transcriptionist

MIS-103 Medical Transcribing I (2-8-4)

This course is a practice in the use of word processors and transcribers, with emphasis on the development of accuracy in transcribing medical records. Prerequisites: MIS-111, MIS-1410, BIOL-2402, TCM-112 (with a letter grade of "C" or better).

MIS-111 Medical Typing (1-4-2)

This course is a review of foundations upon which typing is built: correct touch of the typewriter, skill of 40 words per minute for three minutes with four or fewer mistakes and

**Academic Course-credit is in semester hours.*

experience and understanding as evidenced by correct usage of related learnings.

MIS-115 Medical Office Procedures (1-4-2)

This course familiarizes the student with duties in a medical office, with emphasis on manual submission of insurance claims. This course also covers a simple secretarial "one-write" bookkeeping system. Students also must maintain a speed of 50 words per minute within three minutes with three or less errors. Prerequisite: MIS-111.

MIS-140 Filing (1-3-2)

This course acquaints the student with methods and procedures of maintaining business records of various types, and develops basic skills in implementing those methods and procedures in various practice situations.

MIS-201 Clinical Experience (1-14-6)

This course provides the medical record student with the appropriate setting and proper supervision for correlating classroom instruction and on-the-job training. Prerequisite: Students must complete all curriculum courses with a minimum grade of 78 percent in all major courses and a letter of "C" or better in all support courses.

MIS-203 Medical Transcribing II (2-8-4)

This course is a continuation of MRC-103, with emphasis on speed and accuracy. This course offers practice in transcribing reports for specialization, such as pathology and radiology. Prerequisite: MIS-103

MIS-240 Medical Manager (1-4-2)

This course introduces the student to a physician's practice management software providing total patient coverage from appointment to final payment. Laboratory sequence provides hands-on experience. Timed writings will continue with an expected speed of 60 words per minute with three errors or less. Prerequisite: MIS-115.

MIS-1410 Medical Terminology (2-3-3)

This course is a study of the basic structure of medical words, prefixes, suffixes, roots, combining forms and plurals. Emphasis is placed on pronunciation, spelling and definition of medical terms.

MIS-2103 Coding Systems in Health Care (2-3-3)

This course is an introduction to the classification systems being used in health care facilities. Major emphasis is placed on the International Classification of Disease coding system. Prerequisite: MIS-1410, BIOL-2402.

MIS-2211 Advanced Medical Terminology (1-4-2)

This course is an intensive study of medical specialization terms as well as surgical instruments, operative terms, pharmacological terms and universally accepted medical abbreviations. Prerequisite: MIS-1410.

Nurse Assistant

NSA-102 Introduction to Long Term Care (3-8-5)

This course fulfills the objectives and training requirements for the state curriculum for Long Term Care. Includes 24 hours of clinical experience at a nursing home. Upon

successful completion of the course, the students are then qualified to take the state exam for Long Term Nurse Assistant Certification.

NSA-103 Body Systems (2-3-3)

In this course the student is introduced to the normal structure, location and basic function of body systems.

NSA-206 Patient Care (2-4-3)

In this course, the student learns basic skills for care of patients in acute care setting. Pre-op, special procedures, CPR, First Aid, and medical terminology are also included.

NSA-208 Clinical Experience (1-16-5)

In this course, students will accept responsibility of duty assignments and learn to accept constructive criticism in performance of duties. Clinical experience is provided in both nursing homes and hospital settings.

Physics

Technical Physics

PHY-102 Applied Physics (2-3-3)

This course is a study of measurements, mechanics and heat.

PHY-131 Principles of Physics I (2-2-3)

In this course, problem-solving methods are introduced and applied to solve problems in subsequent topics. Course topics include systems of measurement, work, energy, simple machines, matter and forces. Students perform selected laboratory experiments. Two hours lecture and two hours laboratory.

Academic Physics

***PHYS-114 Environmental Science (4-0-3)**

This is a general interest course requiring a minimum of previous science background and relating scientific knowledge to problems involving energy and the environment.

***PHYS-1310 Fundamentals of Physics (4-0-3)**

An algebra-level problem-oriented course. Presents special topics in classical physics, such as basic mechanics, optics, acoustics, or electricity. Prerequisite: MATH 1314.

***PHYS-1315 Physical Science (4-0-3)**

A course designed for non-science majors which surveys topic from physics, chemistry, geology, astronomy, and meteorology. Prerequisite: MATH-090.

***PHYS-1401 College Physics I (4-4-4)**

Principles and application of mechanics, wave motion, and heat with emphasis on fundamental concepts, problem solving, notation and units. Prerequisite: MATH-1316.

***PHYS-1402 College Physics II (4-4-4)**

Principles and application of electricity, magnetism, light and sound with emphasis on fundamental concepts, problem solving, notation and units. Prerequisite: PHYS-1401.

***PHYS-2325 University Physics I (4-4-4)**

This course is a calculus based study of mechanics, including

**Academic Course-credit is in semester hours.*

vibrations and wave, heat and thermodynamics.

Prerequisite: Credit or registration for MATH-2413.

***PHYS-2326 University Physics II (4-4-4)**

This course is a calculus based study of electromagnetic theory and applications, electromagnetic waves, solid state and modern physics. Prerequisite: PHYS-2325 and credit or registration for MATH-2414.

Psychology

***PSYC-2301 General Psychology (4-0-3)**

A survey of the major topics in psychology. Introduces the study of behavior and the factors that determine and affect behavior.

***PSYC-2314 Life Span Growth and Development (4-0-3)**

The study of the relationship of the physical, emotional, social, and mental factors of growth and development throughout the life span.

***PSYC-2315 Psychology of Human Adjustment (4-0-3)**

Study of the process involved in adjustment of individuals to their personal, social, and work environments. (Formerly PSYC-114)

Sociology

***SOC-1301 Introduction to Sociology (4-0-3)**

Focuses on the concepts and principles used in the study of group life, social institutions and social processes. (Formerly SOCI-104)

***SOC-1306 Contemporary Social Problems (4-0-3)**

Application of sociological principles to the major problems of contemporary society such as inequality, crime and violence, substance abuse, deviance, or family problems.

***SOC-2319 Minority Studies (4-0-3)**

This course covers the historical, economic, social and cultural development of minority groups, which may include Afro American, Mexican American, Asian American and Native American issues.

Spanish

***SPAN-1300 Spanish Conversation I (4-0-3)**

Basic practice in comprehension and production of the spoken language.

***SPAN-1311 Language Practicum in Spanish (4-0-3)**

Additional study designed to meet specific interests and needs of students.

***SPAN-1313 Beginning Spanish (4-0-3)**

Fundamental skills in listening comprehension, speaking, reading and writing, including basic vocabulary, grammatical structures and culture.

***SPAN-1314 Beginning Spanish II (4-0-3)**

This course is continuation of SPAN-1313 covering fundamental skills in listening, comprehension, speaking, reading

and writing. This course includes basic vocabulary, grammatical structures and culture. Prerequisite: SPAN-1313.

***SPAN-2311 Intermediate Spanish (4-0-3)**

Review and application of skills in listening comprehension, speaking, reading and writing, emphasizing conversation, vocabulary acquisition, reading, composition and culture. Prerequisite: SPAN 1313.

***SPAN-2312 Intermediate Spanish II (4-0-3)**

This course is a continuation of SPAN-2311 covering a review and application of skills in listening comprehension, speaking, reading and writing. This course emphasizes conversation, vocabulary acquisition, reading, composition and culture. Prerequisite: SPAN-2311.

Speech

***SPCH-1311 Introduction to Speech Communications (4-0-3)**

Theories and practice of speech communication behavior in interpersonal, small group, and public communication situations. (Formerly ENGL-154)

***SPCH-1318 Interpersonal Communication (4-0-3)**

Theories and exercises in verbal and nonverbal communication with focus on interpersonal relationships. (Formerly ENGL-134)

***SPCH-2333 Discussion and Small Group Communication (4-0-3)**

Theories and practice of speech communication in discussion and small group situations including principles of group process and interaction. (Formerly ENGL-144)

Surgical Technician

ST-100 Operating Room Protocol (1-0-1)

This course acquaints students with operating room interpersonal relations. Emphasis is placed on operating room attire, facility requirements, safety, confidentiality and accountability.

ST-101 Introduction to Surgical Techniques I (2-3-3)

This course introduces basic anatomy and physiology and medical terminology. This course enables students to understand surgical procedures and related terms.

ST-102 Introduction to Surgical Techniques II (2-3-3)

This course familiarizes students with the operating room, dress code and related departments. This course covers basic surgical instruments, gowning and gloving and commonly used operating room supplies.

ST-115 Nursing Procedures (1-6-3)

This course focuses on patient care. It includes VS, neuro signs, oxygen therapy, body mechanics, IV therapy, transportation of the surgical patient and bedmaking.

ST-120 Basic Operating Room Skills I (2-8-4)

This course deals with basic operating room skills. This course includes preps, positions, sutures and various basic operating room procedures.

**Academic Course-credit is in semester hours.*

ST-125 Patient Care in the Operating Room I (2-8-4)

This course focuses on patient care. It includes admission to the hospital, pre and post-operative care and diagnostic procedures.

ST-130 Principles of Aseptic Techniques (2-4-3)

This course covers methods and procedures of aseptic practice; process, prevention and control of infection and preparation and care of supplies and equipment for surgery.

ST-131 Introduction to Basic Microbiology (2-3-3)

This course introduces the student to various types of microorganisms and their characteristics. This course provides knowledge of disease-producing organisms and nonpathogenic organisms. Emphasis is placed on organisms of surgical importance. This course supports ST-130 and enables the student to understand the sterilization technique, which is the most important concept of the Surgical Technician program.

ST-195 Surgical Procedures I (2-3-3)

This course presents factors about surgical procedures in accordance with each specialty. This course introduces procedures in obstetrics-gynecology, oncology, urology, plastic surgery and reconstructive surgery. Students are instructed in anatomy and physiology, surgical approach, skin preparation, positioning, type of incision, sutures, closure of wounds, surgical hazards, proper setup and instrumentation. Laboratory work is conducted in a hospital under the supervision of a coordinator or instructor. Prerequisites: BIOL-125, BIOL-135 with a letter grade of "C" or better.

ST-200 Surgical Procedures II (6-24-14)

This course is a continuation of ST-195. This course presents factors of surgical procedures. This includes procedures in EENT, cardiovascular, thoracic, orthopedic and neurological surgery. This course provides knowledge of anatomy and physiology, surgical approach, skin preparation, positioning, type of incision, sutures, wound closure, surgical hazards, proper setup and instrumentation. Laboratory work is conducted in a hospital under the supervision of an instructor. Prerequisites: ST-195, BIOL-125, BIOL-135 with a letter grade of "C" or better.

ST-202 Basic Operating Room Skills II (2-8-4)

This course is a continuation of ST-120. In this course, the student increases knowledge and skills in surgical procedures in the operating room. Laboratory work is conducted in a hospital under supervision of a coordinator or instructor. Prerequisite: ST-120.

ST-204 Patient Care in the Operating Room II (3-12-7)

This course is a continuation of ST-125. In this course, the student increases knowledge and skill in assisting the anesthesiologist. Emphasis is on the technician's responsibilities related to patient care in the operating room. Laboratory work is conducted in a hospital under supervision of a coordinator or instructor. Prerequisite: ST-125.

Technical Communications

TCM-104 Reading Improvement (2-3-3)

In this course, students learn techniques of improved reading

comprehension, reading rate and vocabulary, with added emphasis on effective study methods and library familiarization.

TCM-108 Technical Communications (2-3-3)

This course is an introduction to the nature of communicative skills and thinking processes, with practical exercises in writing, reading, speaking and vocabulary as related to technical areas.

TCM-112 Technical Communication for Business (2-3-3)

This course covers principles, techniques and skills for technical writing and speaking in business.

TCM-150 Training Techniques (4-0-4)

This course covers philosophy, techniques and principles of conducting training in corporate and government environments. This course includes design and management of instruction, with emphasis on the use of audiovisual aids. Prerequisite: fourth-quarter standing.

TCM-202 Technical Report Writing (2-3-3)

This course covers techniques of collecting data and organizing, writing and editing technical reports related to the student's field of technology. Oral reporting is included. Prerequisite: TCM-108 or TCM-112 or equivalent.

Welding Technology

WLT-103 Introduction to Combination Welding (1-4-2)

This is an introductory course in oxyacetylene welding, cutting and brazing techniques. Proper use and care of welding equipment is taught, with special emphasis on safety techniques.

WLT-104 Aircraft Welding (2-3-3)

This course is a study in welding theory using oxyacetylene welding and cutting processes. This course provided practice in oxyacetylene welding and brazing alloy tubing structures to meet FAA aircraft welding requirements. Theory and application of destructive and non-destructive testing of welds and heat treatments are considered.

WLT-199 Co-op for Welding Technology (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

WLT-298 Co-op for Welding Technology (1-39-6)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

WLT-299 Co-op for Welding Technology (1-19-3)

In this course, training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: Fifth-quarter standing.

WLT-301 Testing and Inspection (3-9-6)

This course covers the design of welded structures and the use and construction of jigs and fixtures. Special emphasis is placed on nondestructive testing of student weldments for qualification purposes using testing techniques such as

ultrasonics, dye penetrant, magnetic particle, eddy current and other inspecting processes and techniques.

WLT-302 Welding Processes and Power Sources (3-4-4)

This course involves comprehension and troubleshooting of various welding power sources and equipment. Several advanced welding processes are discussed in detail from an engineer's viewpoint. Theory and hands-on training are incorporated to give students skill and knowledge necessary to find, correct and repair problems with power source efficiency.

WLT-303 Welding Metallurgy (2-9-5)

This course is an introduction to properties of metals, effects of working metals in various forms and shapes, thermo treatments, phase diagrams, metallic crystalline structure and theory of alloys. Lab activities include analysis and microscopic studies of crystalline structure. Hardness tests are performed, along with other metal tests.

WLT-304 Advanced Welding Processes (2-9-5)

This course broadens the student's knowledge in each sophisticated production welding and cutting process. Students use laser beam, plasma arc, electron beam, friction, submerged arc and other advanced processes. Emphasis is on parameter settings and equipment methodology.

WLT-398 Co-op for Welding Technology (1-39-6)

A continuation of WLT-298. Training is provided under the joint cooperation of TSTC and industry in the student's program of study. Prerequisite: WLT-298.

WLT-1013 Oxyacetylene Welding and Cutting (1-6-3)

This course is an introduction to basic welding, brazing and cutting operations using oxyacetylene equipment. Emphasis is placed on skill development in manual and automatic cutting operations. Students are taught relevant safety and maintenance skills. Safety and care of equipment are emphasized.

WLT-1116 Arc Welding (2-12-6) or WLT-1112 (1-3-2) and WLT-1114 (1-9-4)

This is a course in shielded metal arc welding involving the use of several types of electrodes in all positions. Students perform advanced applications of 7018 electrodes. A two position backup strap plate test is passed to code-related criteria. (AWS-D1.1-5.19) WLT 1112-flat position, WLT 1114-horizontal position.

WLT-1619 Structural Welding (3-18-9) or WLT-1512 (1-3-2), WLT-1514 (1-9-4) and WLT-1613 (1-6-3)

In this course, AC/DC welding equipment and supplies are introduced and weld joint preparation is covered. Students perform advanced applications of 6010 and 7018 electrodes and pass the three-position open-butt plate test to code-related standards. The advanced study of 6010 and 7018 electrodes on plate includes practical applications. Students pass a downhill welding test to code-related criteria. (AWS-D1.1-5.19) WLT 1512-vertical down position, WLT 1514-overhead position, WLT 1613 vertical up position.

WLT-2016 Job Planning, Layout and Fabrication (3-9-6)

This course is a study of fabrication methods using structural materials to form projects laid out using basic radial lines,

parallel lines and triangulation techniques. This course covers principles of weld joint design, welding sequence and distortion control.

WLT-2114 Gas Metal Arc Welding I (2-6-4)

This course is an introduction to MIG welding processes, gases, filler metals and machine operations. Students perform gas metal arc welding of ferrous and nonferrous metals. (D.1.-4.14)

WLT-2514 Gas Tungsten Arc Heliarc Welding (1-9-4)

This course is an introduction to TIG welding processes, gases, filler metals and machine operations. Students perform gas tungsten arc welding of ferrous and non-ferrous metals. (A.P.I.1104)

WLT-2614 Pipe Welding I (2-6-4)

This course is a study and practice of fixed position pipe welding in the horizontal position using 6010 and 7018 electrodes. This course prepares the student to take the ASME A.P.I. 1104 code welding test. 2 G position.
Prerequisite: WLT-1613.

WLT-2714 Pipe Welding II (2-6-4)

This course is a study and practice of fixed position pipe welding in the vertical position using 6010 and 7018 electrodes. The pipeline code A.P.I. 1104 is studied. 5G and 6 G positions.
Prerequisite: WLT-2614.

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