



# College Catalog & Student Handbook 2018–2019



*Ten* LOCATIONS

ABILENE

BRECKENRIDGE

BROWNWOOD

FORT BEND COUNTY

HARLINGEN

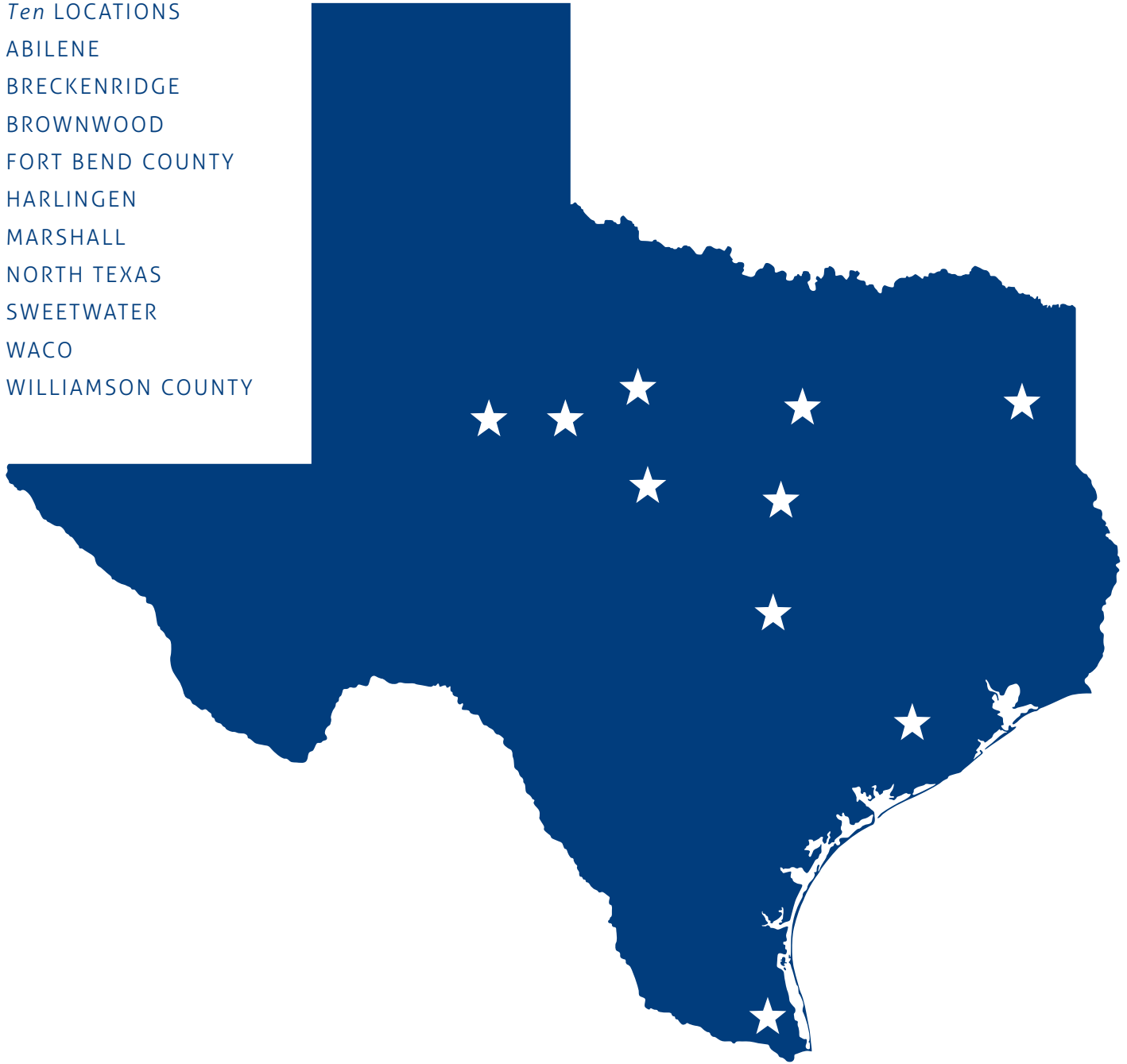
MARSHALL

NORTH TEXAS

SWEETWATER

WACO

WILLIAMSON COUNTY



Equal opportunity shall be afforded within TSTC to all employees and applicants for admission or employment regardless of race, color, gender, religion, national origin, age, genetic information, disability or veteran status. TSTC will make reasonable accommodations for persons with disabilities. TSTC's policy is that, in all aspects of its operations, each person with a disability shall be considered for admission or access to or treatment or employment in its programs and activities in accordance with Part 84 of Title 45, the regulation implementing Section 504 of the Rehabilitation Act of 1973.

TSTC reserves the right to limit the enrollment of any program and to make any changes in the provisions of this catalog when such action is deemed to be in the best interest of the student or TSTC. TSTC reserves the right to change any of this catalog's provisions, 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. This catalog is not a legal document and does not constitute a contract between TSTC and the user.

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# Mission and Purpose

## Statement of Purpose

The Texas State Technical College mission is defined by the Texas State Legislature and published in Vernon's Texas Education Code Section 135.01:

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

*Texas State Technical College shall contribute to the educational and economic development of the state of Texas by offering occupationally oriented programs with supporting academic course work, emphasizing highly specialized advanced and emerging technical and vocational areas for certificates or associate degrees. The Texas State Technical College is authorized to serve the state of Texas through excellence in instruction, public service, faculty and manpower research, and economic development. The College's economic development efforts to improve the competitiveness of Texas business and industry include exemplary centers of excellence in technical program clusters on the College campuses and support of education research commercialization initiatives. Through close collaboration with business, industry, governmental agencies and communities, including public and private secondary and 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 campus shall be on advanced or emerging programs not commonly offered by public junior colleges. (TEC 135.01)

## Expanded Statement of Purpose

Texas State Technical College (TSTC) is a coeducational two-year, multicampus institution of higher education providing innovative and responsive programs and courses of study in technical education for which there is demand in the state of Texas, with emphasis on advanced and emerging technologies. TSTC is a leader in building the economic vibrancy of Texas by providing excellence in learning experiences, on location and at a distance, and through diverse technical programs and rigorous curricula offerings. TSTC facilitates the transfer of technical expertise through the placement of former students who have obtained hands-on learning experience in jobs with

Texas business and industry. TSTC works collaboratively both internally and with other organizations to increase the availability of relevant technical education in Texas and to be accountable to its various constituencies. Integrity in all of its dealings provides the foundation of TSTC's mission. TSTC awards include Associate of Applied Science degrees, Certificates of Completion, badges (skill-set institutional awards) and workforce certificates. TSTC also provides opportunities for the seamless transfer of credits to other colleges and universities, including awards at its Harlingen campus for Associate of Science degrees and institutional recognitions for completion of the General Education Core curricula.

TSTC makes higher education affordable, readily accessible and personal through multiple instructional delivery systems, support services, student activities and the opportunity to learn in a residential setting at several of its campuses. By offering TSTC programs and services in flexible times and places, TSTC students are able to achieve their educational and career goals at a pace that meets their needs while minimizing the elapsed time needed to reach those goals. To achieve time and place flexibility, TSTC offers traditional higher education credit programs taught on a semester basis, dual credit programs that lead to marketable skills achievement or further education (in partnerships with independent school districts), competency-based education and training delivery, online instruction, project-based learning activities, continuing education, and specialized training for business and industry. TSTC operates its programs and services in accordance with the public trust for which it is responsible.

Diversity in the student body and in faculty and staff is a value that TSTC strives to achieve. It is TSTC's goal for the ethnicity of these groups to mirror statewide and local demographics. Likewise, serving nontraditional and special population groups has always been a TSTC keynote, with specialized services provided to assist where and when needed.

## Vision and Values

### Vision

Texas State Technical College will be a leader in strengthening the competitiveness of Texas business and industry by building the state's capacity to develop the highest quality workforce.

### Values

<b>Integrity</b>	Dealing honestly and openly with all of our constituencies and with one another.
<b>Excellence</b>	Achieving the highest quality in all we do.
<b>Leadership</b>	Developing visions and strategies for a desired future, and aligning and energizing people to achieve those visions.
<b>Innovation</b>	Creating and implementing new ideas and methods.
<b>Collaboration</b>	Working cooperatively with other organizations and within our own system.
<b>Responsiveness</b>	Providing appropriate programs and services in a proactive, flexible and timely manner.
<b>Accountability</b>	Measuring our performance and using the results for improvement.
<b>Stewardship</b>	Ensuring our programs and services add value to our students and communities throughout the state, and operate in accordance with the public trust for which we are responsible.
<b>Diversity</b>	Striving for inclusivity in our faculty, staff and students as reflected in state demographics; treating others fairly and equitably as we would all like to be treated.

## Texas State Technical College

Texas State Technical College (TSTC) was established in 1965 as the James Connally Technical Institute (JCTI) of Texas A&M University to meet the state's evolving workforce needs. This college was located in Central Texas at the former James Connally Air Force Base in Waco. At the time, Governor John Connally predicted that it would be "the most sophisticated technical-vocational institute in the country."

In 1967, JCTI expanded to include a South Texas campus in Harlingen. In 1969, the colleges separated from Texas A&M University and became an independent state system, with the name Texas State Technical Institute (TSTI) and its own Board of Regents. An additional campus was created in 1970 in the Panhandle of Texas and in Sweetwater in West Texas. As the demand for quality technical education continued to grow, campuses were established in Abilene (1985), Breckenridge (1989), Brownwood (1991), Marshall (1991), Williamson County and North Texas (2013) and Fort Bend County (2016). In 1991, TSTI was renamed Texas State Technical College.



Today, serving as the state's college for workforce and economic development, TSTC offers new, emerging and customized curriculum at 10 campuses in Abilene, Breckenridge, Brownwood, Fort Bend County, Harlingen, Marshall, North Texas, Sweetwater, Waco and Williamson County. In addition, programs and customized training are offered at partnership centers throughout the state.

TSTC's statewide role and mission is to efficiently and effectively help Texas meet the high-tech challenges of today's global economy in partnership with business and industry, government agencies and other educational institutions. TSTC has high graduation rates, exceptional postgraduate success rates, and an outstanding record in graduating individuals from diverse cultural and socioeconomic backgrounds. Students are served through traditional degree programs, short-term continuing education and corporate training programs.

Among TSTC's strengths are its emphasis toward hands-on learning and its strong relationships with business and industry, state-of-the-art laboratories, residential campuses and student-centered philosophy:

TSTC believes in people and their desire to be responsible and productive citizens. TSTC believes technology is a force to be explored and channeled by people in a productive and responsible manner for the benefit of all humankind. Therefore, TSTC believes all people should be provided with the educational opportunity to learn the skills necessary to perform meaningful work and, thereby, pursue their goals as responsible citizens contributing to the welfare and success of their families, communities, state, nation and world.

## Governance and Accreditation

Texas State Technical College is governed by a nine-member Board of Regents and is operated under the leadership of the Chancellor and Chief Executive Officer (CEO), whom the Board appoints. Board members are appointed by the Governor of Texas to six-year staggered terms and are confirmed by the Texas Senate. The Board meets a minimum of four times a year to enact policies and take actions that support the successful operation and management of the College.

The TSTC Chancellor and Chief Executive Officer is  
**Michael L. Reeser**

The TSTC Administration

**Dr. Elton E. Stuckly Jr.**, Executive Vice Chancellor &  
Chief Academic Officer

**Jonathan Hoesktra**, Vice Chancellor &  
Chief Financial Officer

**Jeff Kilgore**, Vice Chancellor & Chief Marketing Officer

**Gail Lawrence**, Senior Vice Chancellor & Chief of Staff  
to the Chancellor & CEO

**Roger Miller**, Senior Vice Chancellor & Chief  
Governmental Affairs Officer

**Rick Herrera**, Vice Chancellor & Chief Student  
Services Officer

**Michael Bettersworth**, Vice Chancellor & CEO of C4EO

**Ray Rushing**, Vice Chancellor &  
Chief Legal Affairs Officer

The TSTC Board of Regents

**John K. Hatchel**, Chair

**Ivan Andarza**, Vice Chair

**Ellis M. Skinner II**, Executive Committee Place 1

**Tony Abad**, Member

**Curtis Cleveland**, Member

**Keith Honey**, Member

**Charles "Pat" McDonald**, Member

**Alejandro "Alex" Meade III**, Member

**Tiffany Tremont**, Member

Texas State Technical College (TSTC) is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) to award Associate Degrees and Certificates of Completion. Contact the Southern Association of Colleges and Schools Commission on Colleges at 1866 Southern Lane, Decatur, Georgia 30033-4097 or call 404-679-4500 for questions about the accreditation of Texas State Technical College.

Information about the accreditation status of TSTC can be found on the [SACSCOC website](#). The procedure for filing a complaint against the College is detailed on SACSCOC's [Complaint Procedures Against SACSCOC or its Accredited Institutions](#) Policy Statement. Filing a complaint with

SACSCOC should only address significant, documented, alleged noncompliance with the SACSCOC accreditation standards, policies or procedures. SACSCOC expects individuals to attempt to resolve the issue through all means available to the complainant, including following the institution's own published [grievance procedures](#), before submitting a complaint to SACSCOC.

TSTC is a member of the American Association of Collegiate Registrars and Admissions Officers and is listed in that association's Report of Credit Given.

The following programs are accredited by the:

American Dental Association (ADA)

- Dental Hygiene

Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM)

- Health Information Technology

Commission on Accreditation of Allied Health Education Programs (CAAHEP)

- Surgical Technology
- Paramedic

National Institute for Metalworking Skills (NIMS)

- Precision Machining Technology

National Institute for Automotive Service Excellence (ASE)

- Auto Collision Technology
- Automotive Technology

The following program is approved by the:

Texas Board of Nursing

- Registered Nursing
- Vocational Nursing

Texas Department of State Health Services

- Emergency Medical Services

The following programs are certified by the:

Inter-Industry Conference on Auto Collision Repair (I/CAR)

- Auto Collision Technology

Federal Aviation Administration (FAA)

- Aviation Maintenance Technology

The following programs are recognized by the:

Texas Skills Standards Board (TSSB)

- Biomedical Equipment Technology
- Computer Networking and Security
- Digital Media Design Technology
- Electrical Lineworker
- Process Operations Technology
- Solar Energy Technology
- Wind Energy Technology

# General Information

# Student Recruitment Office

## Campus Tours

Prospective students and their families are strongly encouraged to visit TSTC before registering for classes. During a campus visit, each prospective student is assigned to a student recruitment representative who serves as a personal contact to help in the transition to college and the admissions process. Contact the Recruitment Office to schedule an appointment with a student recruitment representative and a campus tour.

For general information, please contact the following:

**East Texas Region**  
(Marshall campus)  
903-923-3207

**North Central Texas Region**  
(Waco, North Texas and Williamson County campuses)  
512-759-5626

**South Texas Region**  
(Fort Bend County and Harlingen campuses)  
956-364-4119

**West Texas Region**  
(Abilene, Breckenridge, Brownwood and Sweetwater campuses)  
325-738-3322

## Enrollment Center

## Admission Requirements

### General Admission Requirements

The admission of each student into the College will be in accordance with institutional procedures, which include the completion of the appropriate forms. In order to register into a specific program, a student must satisfy program entry requirements.

Equal opportunity shall be afforded within Texas State Technical College to all employees and applicants for admission or employment without regard to race, color, religion, gender, national origin, age, genetic information, disability or veteran status.

### Admission Categories

Prospective students may be admitted to any TSTC campus as regular students under the following conditions:

- A. **High School Graduate:** A student is admitted upon proof of graduation from an accredited high school upon submission of an official high school transcript. In this policy, accredited high school means a Texas public high school accredited by the Texas Education Agency, a Texas nonpublic high school accredited by the Texas Private School Accreditation Commission, an out-of-state high school accredited by an equivalent official accrediting body for the state in which the high school is located, or a home school directed by a parent as defined in case law by *TEA vs. Leeper*. A student who graduated from a home school is admitted once a notarized record of the high school equivalent work completed with a date of successful completion is submitted. This work should be consistent with Texas Education Agency minimums for high school completion.
- B. **College Transfer:** Prior attendance at a regionally accredited college or university. A student is admitted upon receipt of official transcripts from all previously attended institutions of higher education.
- C. **TxCHSE (Texas Certificate of High School Equivalency):** The SBOE awarded contracts to three test vendors: GED, HiSET and TASC. The test taker will be issued a State of Texas Certificate.
- D. **An individual who does not qualify for admission under one of the previous admissions categories and who can present sufficient evidence indicating their capability to do college-level work.** Students may be eligible for exception admissions by following one of the Exceptional Admissions/Individual Approval categories. Students must complete an Exceptional Admissions/Individual Approval Form, which includes appropriate authorization.

### Individual Approval Categories/Exceptional Admissions:

- A. **Individual Approval A:**
  1. Students who have completed their sophomore year of high school or the home school equivalent by the start of the academic term.
  2. Students age 16 or older who are graduates of an unaccredited high school.
  3. Students age 17 or older who are attending a course of instruction to prepare for the high school equivalency examination and who can present sufficient evidence indicating their capability to do college-level work.
  4. Students 18 or older who can present sufficient evidence indicating their capability to do college-level work.

Exceptional Admission Students shall be considered to have capability to do college-level work by one of the following:

1. Passing all sections of the TSI Assessment.
  2. Completing the TSTC developmental sequence of courses to achieve TSI-met status.
  3. Completing six or more college-level course hours (nondevelopmental) with a grade of "C" or better.
- B. Individual Approval B: Dual enrollment students who are currently attending a high school and do not have a diploma or TxCHSE.

## Campus Immunizations

Students who will be attending classes on campus and are ages 22 or younger are required by Texas state law to obtain the Bacterial Meningitis vaccination. Additional vaccinations or boosters may be required for admission into specific programs. Students are encouraged to contact their programs of interest for further details.

## Admission Enrollment Procedures

- A. Submit an admission application form which includes an Oath of Residency and a declaration of intent to enroll as a degree-seeking or non-degree-seeking student. All applicants applying for admissions to the College will be required to complete the information regarding felony charges on the Application for Admissions form. Applicants who answer "Yes" will be required to complete a "Supplemental form" and may be required to submit additional documentation.
- B. Submit all required documents based on admissions category. See admission categories above for more information.
- C. Comply with applicable testing requirements:
  1. Submitting TSI Assessment Test results; or
  2. Submitting documentation of TSI exemption or waiver; or
  3. Taking the TSI Assessment test.
- D. Comply with any immunization related requirements as specified by law.
- E. Students seeking admission to specific programs must also satisfy any established and approved program entry-level standards.

Note: TSTC campuses entering into contractual agreements (including State Authorization Reciprocity Agreements) with independent school districts, businesses and/or other entities for the delivery of courses to specific student populations may develop supplemental requirements and documentation to meet the conditions of the agreement. In such cases, the supplemental requirements and documentation will be in addition to the minimum requirements stated in these operating requirements.

- F. Attend a New Student Orientation session. New Student Orientation is recommended for all new students.

All documents submitted by applicants who do not register for the term indicated on the admission application will be retained for one year in the Enrollment Processing Center. At the end of one year, all records are discarded unless the applicant has notified the Enrollment Center of continued interest in attending TSTC. All documents become the property of TSTC and are not returned to the students.

## Former TSTC Students

College credit students who were previously enrolled at TSTC but have not attended TSTC for more than one year must reapply by completing the admission enrollment procedures and providing the appropriate required documents.

## Readmission of Students

- A. Reapplying for admission after an interruption of enrollment of more than one year prior;
- B. Comply with applicable testing requirements;
- C. Comply with any immunization related requirements as specified by law;
- D. Submissions of official transcripts for any College/ University previously attended, TxCHSE or High School transcript.

## Academic Fresh Start

Texas Senate Bill 1321, entitled "Right to An Academic Fresh Start" allows a person who is a resident of Texas to apply for admission and not have coursework completed 10 or more years prior to the date of anticipated enrollment included as consideration in the admission decision. This allows the student to begin a new course of study with a clear academic record.

- A. This is an all or nothing option. Students are not able to pick and choose which courses to ignore and which courses to count. This option clears only the student's academic record. If the student chooses the "Academic Fresh Start" option, the student does not receive any credit for any courses taken 10 or more years prior to the re-enrollment. This means that:
  1. Courses taken previously cannot be used to fulfill new prerequisite requirements.
  2. Courses taken previously cannot be counted toward a new degree.
  3. Courses taken previously will not be counted in the student's GPA calculation.
- B. The student must still complete the usual admissions

process, including providing information on all colleges or universities previously attended and provide official copies of transcripts from all schools attended.

- C. Once the “Right to an Academic Fresh Start” provision has been claimed, and the student has enrolled, the provision cannot be reversed.

## Registration for Classes

After the above requirements are met and the required procedures completed, students may register for credit classes. Consult with your faculty advisor or success coach and review the TSTC course schedule for more information on these classes. Registration for workforce training and continuing education programs are different from those described in this section. Contact the Workforce Training & Continuing Education Office for more information.

## Change of Personal Information

Students are responsible for maintaining accurate personal information on their educational records to ensure communication with college departments. Official changes to personal information are made at the Student Resource Center on a Data Change Form although changes of address, email address, and telephone numbers may be made online through WebAdvisor. Some changes require additional documentation as outlined below. All changes are processed immediately upon receipt.



Name changes must be completed in person at the Student Resource Center. Students must provide legal documentation, such as an original marriage license or certificate, passport, court order, divorce decree, birth certificate or naturalization papers. A driver's license or Social Security card will not be accepted. Name changes for graduation candidates must be completed by the census date of the semester the student is eligible for graduation.

Social Security number changes must also be completed in person at the Student Resource Center. The student must present an original Social Security card as documentation.

## Tuition and Fees

A college education is one of the most important investments a person can make. TSTC is committed to providing access to everyone who can benefit from such an education.

The cost of attending TSTC varies depending on a variety of factors, such as a student's residency status, whether or not the student lives on campus, the program of study and any other services that the student may need. The Financial Assistance section of this catalog defines the types of financial aid that may be available to help pay these costs. This assistance can help provide the financial support students need for tuition, housing, books and other educational items. It is not intended to completely fund a student's education.

The tuition and fees information in this catalog is subject to change without notice.

### Tuition

A student's tuition is determined by residency status, the number of hours taken, the type of course and/or program, and whether the courses are for college credit or for continuing education or workforce training. Tuition rates are subject to change on a semester-by-semester basis as approved by the Board of Regents.

## Tuition Table Effective Fall 2018

### Texas Resident Students - Tier 1

Program: Culinary Arts

Credit Hours	Tuition	Designated Tuition	TOTAL
1	\$50	\$244	\$294
2	\$50	\$488	\$538
3	\$75	\$732	\$807
4	\$100	\$976	\$1,076
5	\$125	\$1,220	\$1,345
6	\$150	\$1,464	\$1,614
7	\$175	\$1,708	\$1,883
8	\$200	\$1,952	\$2,152
9	\$225	\$2,196	\$2,421
10	\$250	\$2,440	\$2,690
11	\$275	\$2,684	\$2,959
12	\$300	\$2,928	\$3,228
13	\$325	\$3,172	\$3,497
14	\$350	\$3,416	\$3,766
15	\$375	\$3,660	\$4,035
16	\$400	\$3,904	\$4,304
17	\$425	\$4,148	\$4,573
18	\$450	\$4,392	\$4,842
19	\$475	\$4,636	\$5,111
20	\$500	\$4,880	\$5,380
21	\$525	\$5,124	\$5,649

### Texas Resident Students - Tier 2

Programs: Cyber Security, Welding Technology, LVN-RN Transition, Vocational Nursing, Surgical Technology, Aircraft Airframe Technology, Aircraft Powerplant Technology, Instrumentation Technology and Dental Hygiene

Credit Hours	Tuition	Designated Tuition	TOTAL
1	\$50	\$191	\$241
2	\$50	\$382	\$432
3	\$75	\$573	\$648
4	\$100	\$764	\$864
5	\$125	\$955	\$1,080
6	\$150	\$1,146	\$1,296
7	\$175	\$1,337	\$1,512
8	\$200	\$1,528	\$1,728
9	\$225	\$1,719	\$1,944
10	\$250	\$1,910	\$2,160
11	\$275	\$2,101	\$2,376
12	\$300	\$2,292	\$2,592
13	\$325	\$2,483	\$2,808
14	\$350	\$2,674	\$3,024
15	\$375	\$2,865	\$3,240
16	\$400	\$3,056	\$3,456
17	\$425	\$3,247	\$3,672
18	\$450	\$3,438	\$3,888
19	\$475	\$3,629	\$4,104
20	\$500	\$3,820	\$4,320
21	\$525	\$4,011	\$4,536

**Texas Resident Students - Tier 3**

*Programs: Computer Networking & Systems Administration, Building Construction Technology, Diesel Equipment Technology, Biomedical Equipment Technology, Electrical Power & Controls, Electrical Lineworker Technology, Electrical Construction, Energy Efficiency Specialist, Plumbing & Pipefitting Technology and Solar Energy Technology*

Credit Hours	Tuition	Designated Tuition	TOTAL
1	\$50	\$172	\$222
2	\$50	\$344	\$394
3	\$75	\$516	\$591
4	\$100	\$688	\$788
5	\$125	\$860	\$985
6	\$150	\$1,032	\$1,182
7	\$175	\$1,204	\$1,379
8	\$200	\$1,376	\$1,576
9	\$225	\$1,548	\$1,773
10	\$250	\$1,720	\$1,970
11	\$275	\$1,892	\$2,167
12	\$300	\$2,064	\$2,364
13	\$325	\$2,236	\$2,561
14	\$350	\$2,408	\$2,758
15	\$375	\$2,580	\$2,955
16	\$400	\$2,752	\$3,152
17	\$425	\$2,924	\$3,349
18	\$450	\$3,096	\$3,546
19	\$475	\$3,268	\$3,743
20	\$500	\$3,440	\$3,940
21	\$525	\$3,612	\$4,137

**Texas Resident Students - Tier 4**

*All other Technical classes not included in Tiers One, Two and Three. All General Academics Courses*

Credit Hours	Tuition	Designated Tuition	TOTAL
1	\$50	\$150	\$200
2	\$50	\$300	\$350
3	\$75	\$450	\$525
4	\$100	\$600	\$700
5	\$125	\$750	\$875
6	\$150	\$900	\$1,050
7	\$175	\$1,050	\$1,225
8	\$200	\$1,200	\$1,400
9	\$225	\$1,350	\$1,575
10	\$250	\$1,500	\$1,750
11	\$275	\$1,650	\$1,925
12	\$300	\$1,800	\$2,100
13	\$325	\$1,950	\$2,275
14	\$350	\$2,100	\$2,450
15	\$375	\$2,250	\$2,625
16	\$400	\$2,400	\$2,800
17	\$425	\$2,550	\$2,975
18	\$450	\$2,700	\$3,150
19	\$475	\$2,850	\$3,325
20	\$500	\$3,000	\$3,500
21	\$525	\$3,150	\$3,675

**Notice:** The charges listed above may change if the TSTC Board approves necessary updates during the academic year.

**Returned-check fee:** \$50, which is applicable for all types of transactions.

**Nonresident Students - Tier 1***Program: Culinary Arts*

Credit Hours	Tuition	Designated Tuition	TOTAL
1	\$170	\$244	\$414
2	\$340	\$488	\$828
3	\$510	\$732	\$1,242
4	\$680	\$976	\$1,656
5	\$850	\$1,220	\$2,070
6	\$1,020	\$1,464	\$2,484
7	\$1,190	\$1,708	\$2,898
8	\$1,360	\$1,952	\$3,312
9	\$1,530	\$2,196	\$3,726
10	\$1,700	\$2,440	\$4,140
11	\$1,870	\$2,684	\$4,554
12	\$2,040	\$2,928	\$4,968
13	\$2,210	\$3,172	\$5,382
14	\$2,380	\$3,416	\$5,796
15	\$2,550	\$3,660	\$6,210
16	\$2,720	\$3,904	\$6,624
17	\$2,890	\$4,148	\$7,038
18	\$3,060	\$4,392	\$7,452
19	\$3,230	\$4,636	\$7,866
20	\$3,400	\$4,880	\$8,280
21	\$3,570	\$5,124	\$8,694

**Nonresident Students - Tier 2**

*Programs: Cyber Security, Welding Technology, LVN-RN Transition, Vocational Nursing, Surgical Technology, Aircraft Airframe Technology, Aircraft Powerplant Technology, Instrumentation Technology and Dental Hygiene*

Credit Hours	Tuition	Designated Tuition	TOTAL
1	\$170	\$191	\$361
2	\$340	\$382	\$722
3	\$510	\$573	\$1,083
4	\$680	\$764	\$1,444
5	\$850	\$955	\$1,805
6	\$1,020	\$1,146	\$2,166
7	\$1,190	\$1,337	\$2,527
8	\$1,360	\$1,528	\$2,888
9	\$1,530	\$1,719	\$3,249
10	\$1,700	\$1,910	\$3,610
11	\$1,870	\$2,101	\$3,971
12	\$2,040	\$2,292	\$4,332
13	\$2,210	\$2,483	\$4,693
14	\$2,380	\$2,674	\$5,054
15	\$2,550	\$2,865	\$5,415
16	\$2,720	\$3,056	\$5,776
17	\$2,890	\$3,247	\$6,137
18	\$3,060	\$3,438	\$6,498
19	\$3,230	\$3,629	\$6,859
20	\$3,400	\$3,820	\$7,220
21	\$3,570	\$4,011	\$7,581

**Nonresident Students - Tier 3**

*Programs: Computer Networking & Systems Administration, Building Construction Technology, Diesel Equipment Technology, Biomedical Equipment Technology, Electrical Power & Controls, Electrical Lineworker Technology, Electrical Construction, Energy Efficiency Specialist, Plumbing & Pipefitting Technology and Solar Energy Technology*

Credit Hours	Tuition	Designated Tuition	TOTAL
1	\$170	\$172	\$342
2	\$340	\$344	\$684
3	\$510	\$516	\$1,026
4	\$680	\$688	\$1,368
5	\$850	\$860	\$1,710
6	\$1,020	\$1,032	\$2,052
7	\$1,190	\$1,204	\$2,394
8	\$1,360	\$1,376	\$2,736
9	\$1,530	\$1,548	\$3,078
10	\$1,700	\$1,720	\$3,420
11	\$1,870	\$1,892	\$3,762
12	\$2,040	\$2,064	\$4,104
13	\$2,210	\$2,236	\$4,446
14	\$2,380	\$2,408	\$4,788
15	\$2,550	\$2,580	\$5,130
16	\$2,720	\$2,752	\$5,472
17	\$2,890	\$2,924	\$5,814
18	\$3,060	\$3,096	\$6,156
19	\$3,230	\$3,268	\$6,498
20	\$3,400	\$3,440	\$6,840
21	\$3,570	\$3,612	\$7,182

**Nonresident Students - Tier 4**

*All other Technical classes not included in Tiers One, Two and Three. All General Academics Courses*

Credit Hours	Tuition	Designated Tuition	TOTAL
1	\$170	\$150	\$320
2	\$340	\$300	\$640
3	\$510	\$450	\$960
4	\$680	\$600	\$1,280
5	\$850	\$750	\$1,600
6	\$1,020	\$900	\$1,920
7	\$1,190	\$1,050	\$2,240
8	\$1,360	\$1,200	\$2,560
9	\$1,530	\$1,350	\$2,880
10	\$1,700	\$1,500	\$3,200
11	\$1,870	\$1,650	\$3,520
12	\$2,040	\$1,800	\$3,840
13	\$2,210	\$1,950	\$4,160
14	\$2,380	\$2,100	\$4,480
15	\$2,550	\$2,250	\$4,800
16	\$2,720	\$2,400	\$5,120
17	\$2,890	\$2,550	\$5,440
18	\$3,060	\$2,700	\$5,760
19	\$3,230	\$2,850	\$6,080
20	\$3,400	\$3,000	\$6,400
21	\$3,570	\$3,150	\$6,720

Notice: The charges listed above may change if the TSTC Board approves necessary updates during the academic year.

Returned-check fee: \$50, which is applicable for all types of transactions.

As defined by the Texas Higher Education Coordinating Board, a resident of Texas is a citizen, national or permanent resident of the United States or an alien (foreign or international student) who has been permitted by Congress to adopt the United States as his/her domicile while in this country and who has otherwise met the state requirements for establishing residency

for tuition purposes. In Texas, students enrolling in an institution of higher education must have resided in Texas for the 12 months immediately preceding the time of enrollment to be classified as a resident for tuition purposes; otherwise, they are classified as nonresidents. Certain non-U.S. citizens who have resided in Texas for at least 36 months and have graduated from a Texas high school may be considered for classification as a resident for tuition purposes. Contact the Enrollment Center for more information regarding the residency of minors, dependents, members of the armed forces or other special circumstances.

The Aircraft Pilot Training Technology program and its Helicopter Specialization require additional fees.

### Aircraft Pilot Training: Airplane

#### Redbird/Simulator Fees:\*

Private Pilot Ground	\$100: Unlimited time
Instrument Ground	\$200: Unlimited time
Commercial Ground	\$100: Unlimited time
Total Airplane Course Simulator Fees: \$400	

\*The simulator hours do not apply to the licensure. The use of the simulator is solely for practice purposes as a training aide. This is a one-time fee per course. Simulator fees shall not be billed for VA education benefits.

#### Airplane (Fixed-Wing Rates):

**C-172** Solo \$110 per hour.

Fuel surcharge is \$43.83 per hour.

**PA28R** Solo \$140 per hour.

Fuel surcharge is \$43.83 per hour.

**PA44-180** Solo \$160 per hour.

Fuel surcharge is \$87.66 per hour

**Dual and Pre and Post Flight Review and Instruction:** \$58 per hour.

Fuel charges may be changed as applicable per semester/academic year. Pre and Post review is instructor and student time only, it is not flight time.

Note: FAA examiner fees for practical flight exams are typically \$400 and are charged by the examiner and are the responsibility of the applicant for payment, except for the Instructor rating which is typically \$800. FAA written exams are currently \$165 per test and are the personal responsibility of the applicant for payment.

### Aircraft Pilot Training: Helicopter Specialization

#### Helicopter/Simulator Fees:\*

Private Pilot Ground	\$100: Unlimited time
Instrument Ground	\$200: Unlimited time
Commercial Ground	\$100: Unlimited time
Total Helicopter Course Simulator Fees: \$400	

\*The simulator hours do not apply to the licensure. The use of the simulator is solely for practice purposes as a training aide. This is a one-time fee per course. Simulator fees shall not be billed for VA education benefits.

#### Helicopter (Rotary-Wing Rates):

**R-44** Dual/with fuel \$550 per hour. (Flight instruction is \$58 per hour, fuel is \$96 per hour, and aircraft is \$396 per hour.) Solo/with fuel \$492 per hour. (Aircraft is \$396 per hour, fuel is \$96 per hour.)

**R-22** Dual/with fuel \$398 per hour. (Flight instruction is \$58 per hour, fuel is \$55 per hour, and aircraft is \$285 per hour.) Solo/with fuel \$340 per hour. (Aircraft is \$285 per hour, fuel is \$55 per hour.)

**Dual and Pre and Post Flight Review and Instruction:** \$58 per hour.

Fuel charges may be changed as applicable per semester/academic year. Pre and Post Flight review is instructor and student time only, it is not flight time. FAA check rides are 1.5 hours of helicopter time (typically) per rating.

Note: FAA examiner fees for practical flight exams are typically \$500 and are charged by the examiner and are the responsibility of the applicant for payment, except for the instructor rating which is typically \$800. FAA written exams are currently \$165 per test and are the personal responsibility of the applicant for payment.

### \$1,000 Tuition Rebate for Certain Undergraduates

The tuition rebate program provides a financial incentive for students to complete a bachelor's degree efficiently, taking as few courses outside their degree plan as possible. The program's goal is minimizing the number of courses students take - saving money for the student, the student's parents and the state of Texas.

Students must meet the following eligibility requirements:

- First college course after high school graduation must be taken in Fall 1997 or later;
- Student must have been a Texas resident at all times while pursuing the degree;
- Student must have been entitled to pay in-state tuition at all times while pursuing the degree; and
- Student must not have graduated yet.

For more information on this rebate program, go to [www.collegeforalltexas.com](http://www.collegeforalltexas.com).

## Student Payments

Student charges for Tuition and Fees are due and payable by dates published each semester to ensure that the student's schedule is not affected. All tuition and fees may be paid by cash, check or credit card at the cashier's office or online through the students' TSTC Portal account. Checks are not accepted online.

Note: TSTC may delete your classes for nonpayment, but several factors can prevent your classes from being deleted. Therefore, if you decide not to attend, it is your responsibility to drop your classes by submitting a Course Schedule Change form prior to the established deadline. Failure to drop by the established deadline can result in you being financially and academically responsible for those classes.

The Installment Payment Plan, Emergency Tuition Loan or Student Financial Aid constitute additional forms of payment; however all payment arrangements must be completed by the published deadlines to avoid deregistration from classes.

To save time, please use WebAdvisor to make payments online.

For all campuses except Williamson County: If you want a Payment Plan, please enroll online through WebAdvisor. In the Financial Information section, click on "Online Payments." Then log in again with your WebAdvisor credentials. On the top bar (just below the TSTC logo), click on "Payments" to pay in full, or click on "Payment Plan" to enroll in (or pay toward) a payment plan. You can also review your account information through this page. Please see cashiers if you need assistance, or if paying with cash.

For Williamson County students: Please see the cashier for assistance.

## Past Due Accounts

A student with a past due unpaid balance is considered delinquent. Delinquent students may not register for subsequent terms, add classes in the current term or receive an official transcript. Delinquent accounts may be turned over to a collection agency, potentially affecting

students' personal credit ratings. Students with delinquent accounts are responsible for the fees of any collection agency, which may be based on a percentage, with a maximum of 30 percent of the debt, and all costs and expenses, including reasonable attorney fees TSTC incurs in such collection efforts after internal collection efforts have failed to result in the full payment of the student's account. Student accounts may be sent to an outside collection agency and may be reported to one or more credit bureau reporting service(s)

## Fees

Student fees are determined by a variety of factors, as described in the accompanying table. Not all of these fees apply to workforce training and continuing education programs. Contact Student Accounting for more information. Fees in force for Fall 2018 are as follows.



TYPE OF FEE	AMOUNT OF FEE	NOTES
Application Fee	Up to \$100 per application	
Late Registration Fee	\$100	After close of registration
Nonresident E-Learning Fee	\$300 per semester credit hour	For out-of-state residents enrolled in online learning credit courses. Courses are exempt from all other state and designated tuition.
Testing Center Exam Fee	Cost of exam	Applies to tests taken at TSTC Testing Centers and to TSTC Challenge Exams; Includes fee for test administration
Program-specific Fees and Costs	Varies	For some credit programs
Continuing Education/Workforce Training Fees and Costs	Varies	For some courses
Out-of-State Resident and Worker Continuing Education Tuition	At least twice the continuing education tuition rate for the associated course-section	For nonresidents who are brought from outside the state by their employers to attend the course
Credit Award Evaluation Fee	\$25 per evaluation	Applies to evaluation of CEUs and/or learning for the purpose of awarding TSTC semester credit
External Certification of Specialty	Cost of exam	
Student Medical Health and/or Accident Insurance	Cost of insurance	Optional, unless required by program
Library Fines	Book items—10 cents per day Non-book items—\$1 per day (includes puppets, equipment and media) Lost Item—cost of replacement plus a 10% processing fee	
Locker Rental Fee	\$25 per semester	Voluntary fee to reserve a locker for a semester
Background Security Check	Cost of security check	Required for certain programs
Student ID Replacement Fee	\$10 per card	
Digital Materials Fee	Cost of materials including administrative fee	Varies by course
Installment Plan Fee	\$25 per semester per installment plan	
Installment Plan Late Fee	\$25 after 7 business days grace period	
Returned-check Fee	\$50 per check	
Audit Fee	Applicable tuition plus \$25 per semester credit hour	
Concurrent Enrollment Fee	Regular tuition/fee charges apply	
Handicap Parking Violation Moving Violation Other Offenses	\$100— Handicap Parking Violation \$40— Moving Violation Other Offenses: \$25 - First offense \$50 - Second offense \$100 - Third offense	Other offenses include, but are not limited to, housing violations, code of conduct violation, smoking in a nonsmoking-designated area and other parking violations
Allied Health Insurance	Cost of Insurance	Required for certain Allied Health programs. Includes malpractice and/or needlestick insurance.
Dental Hygiene Clinical Fee	\$100 per clinical course	
Late Graduation Application Fee	\$100	

## Waivers and Exemptions

The tables in this section describe tuition waivers and exemptions for college credit courses. Students classified as Texas Residents for purposes of tuition assessment may be eligible to have all or part of their state tuition and/or designated tuition waived if they qualify for one of the waivers or exemptions. Contact the appropriate office for additional information and to determine eligibility.

Effective Fall 2014, a law has been adopted by State Legislation (SB 1210, passed in 2013). The law requires that students must meet the Financial Aid Standards of Academic Progress for certain waivers and exemptions. These standards are outlined under the TSTC Satisfactory Academic Progress (SAP policy for Financial Aid)

### WAIVERS & EXEMPTIONS FOR RESIDENTS

### OFFICE

Students who are the highest-ranking graduate of their high school class (valedictorian)	Student Accounting
High school graduates who received TANF benefits while in high school	Student Accounting
Children of POWs and MIAs as certified by the U.S. Department of Defense	Veteran Services
Children of disabled Firefighters or Peace Officers as certified by the Texas Higher Education Coordinating Board	Student Accounting
Blind or Deaf Students as certified by the Texas Health and Human Services – Blind and Deaf-Blind Services, and Deaf and Hard of Hearing Services.	Student Accounting/Disability Services
Students in foster or other residential care as certified by the Texas Department of Protective and Regulatory Services	Student Accounting

Students classified as residents or nonresidents for purposes of tuition assessment may be eligible to have all or part of their state tuition and/or designated tuition waived if they qualify for one of the waivers or exemptions listed. Contact the appropriate office for additional information and to determine eligibility.

### WAIVERS & EXEMPTIONS FOR RESIDENTS OR NONRESIDENTS

### OFFICE

High school students enrolled in class sections for dual high school and college credit may have state and designated tuition waived or reduced	Dual Enrollment
Dependents of Texas veterans who were killed in action or died while in service (Hazlewood)	Veteran Services
Students enrolled in more than one Texas public institution of higher education at the same time may have a reduction in minimum state tuition charges	Enrollment Center
Senior citizens 65 years of age or older may audit courses without payment of state and designated tuition	Student Accounting
TSTC employees, their spouses and/or dependents have a reduction in state tuition and a waiver of designated tuition	Human Resources
Students classified as nonresidents of Texas for purposes of tuition assessment may be eligible to pay resident rates if they qualify for one of the waivers or exemptions listed.	Enrollment Center

### WAIVERS & EXEMPTIONS FOR NONRESIDENTS

### OFFICE

Military personnel stationed in Texas and their spouses and children	Veteran Services
Veteran, spouse/dependent of a non-Texas member of the U.S. Armed Forces whose intent is to make Texas his/her new home.	Veteran Services
Individuals employed at least half time as teachers or professors at Texas institutions of higher education and their spouses and children	Student Accounting
Students whose families transferred to Texas as a part of the State's plan for economic development. Employer company must be certified as eligible by the Texas Higher Education Coordinating Board	Student Accounting
Students who receive a competitive scholarship of at least \$1,000	Enrollment Center
Students who reside in a county or parish of Arkansas, Louisiana, New Mexico, or Oklahoma, that is adjacent to Texas in the out-of-state county or parish where a current reciprocity agreement is in effect with a college or university.	Enrollment Center
Students from Mexico or Canada enrolled through a Texas Higher Education Coordinating Board approved Exchange Program	Student Accounting

Students from Mexico who demonstrate financial need

Student Accounting

Nonimmigrant aliens residing in Texas in accordance with NATO treaties and their spouses and children

Student Accounting

Documentation should be submitted by the third class day of the semester.

## Installment Payment Plan

College credit students may pay their registration charges (state tuition and designated tuition), campus housing (other than Harlingen family and Waco nonstudent housing) and meal plans on an installment payment plan. In accordance with state law, these students may pay their state and designated tuition in installments for the fall and spring semesters and for certain summer terms.

In order to validate the payment plan option, the initial payment and the signed Installment Agreement must be completed online through the TSTC Portal (or in person) prior to published deadlines.

The payments are due as follows:

### Fifteen-Week Term:

- 34 percent prior to published deadlines plus the \$25 installment plan fee
- 33 percent prior to the sixth class week
- 33 percent prior to the eleventh-class week

### Twelve-Week Summer Term:

- 34 percent prior to published deadlines plus the \$25 installment plan fee
- 33 percent prior to the fifth class week
- 33 percent prior to the ninth class week

### Less Than Twelve-Week Term:

- 50 percent prior to published deadlines plus the \$25 installment plan fee
- Remainder 50 percent before the class week prior to the halfway point of the term

A student who elects to pay in installments will:

1. pay an \$25 installment plan fee;
2. be responsible for making payments on or before the due dates established at the time of registration;
3. be charged a late fee of \$25 for each payment made more than seven business days after the payment is due;
4. not be able to obtain official copies of his/her student records until the debt is paid in full;
5. be at risk of being dropped or barred from attending classes until the debt is paid or acceptable arrangements are made with Student Accounting; and
6. be responsible for payment of any remaining balance upon withdrawal from the College.

## Emergency Tuition Loan

College credit students who are unable to pay their state

and designated tuition at the time of registration because of financial hardship may be eligible for emergency tuition loans. Funds are limited and the student must meet several qualifications. Emergency Tuition Loans are due in full approximately 30 days after first class day. Contact Student Accounting for more information.

## Housing

Required items include the Housing Application with the appropriate deposit, the Release of Background Information Form and the nonrefundable application fee.

Please see the Housing Office for information regarding room and board.

## Student Insurance

Students may purchase accident insurance, malpractice (liability) insurance, or needlestick insurance through Student Accounting (cashiers). Coverage is available each semester through the census date of the student's class(es). Please see the cashiers for rates.

## Refunds

### Refunds for Changes in Enrollment

The following definitions apply when calculating refunds for changes in enrollment. Changes must occur by the published deadlines. Reduction in course load occurs when a student drops a course(s) having more credit hours than he/she adds, resulting in the student being enrolled in fewer credit hours overall. Withdrawal occurs when a student completely ends his/her enrollment at the College for the current term.

Credit courses are courses for which a student is eligible to earn semester credit hours toward an institutional award, certificate or associate degree. Credit courses also include support courses required for the student's enrollment, such as developmental education, etc.

### Refunds for Drops/Reduction in Course Load

Students who drop credit courses and reduce their course loads while remaining enrolled at the College will have their state and designated tuition refunded, based on the official drop date recorded by the Student Resource

Center according to the following schedule. Students who concurrently add and drop the same number of credit hours will not be charged or refunded for these simultaneous transactions if they occur by the published deadlines.

Refunds for semester credit courses are calculated using a formula based on the number of weeks scheduled for a term or class. Students who are enrolled in semester credit hour courses who drop a class or withdraw from school prior to the first class day will receive a 100 percent refund.

Students in semester credit hour courses who officially withdraw from school or drop a course after classes begin will have their state and designated tuition and fees refunded according to the following schedule unless the fees are specifically designated as nonrefundable. Class days are defined as calendar days during which classes are normally scheduled and not the specific days a particular class meets.

Length of Class Term in Weeks	Last Class Day for 70 Percent Refund	Last Class Day for 25 Percent Refund
2 or less	2	n/a
3	3	4
4	4	5
5	5	6
6	5	7
7	7	9
8	8	10
9	9	11
10	9	12
11	10	14
12	12	15
13	13	16
14	13	17
15	14	19
16 or longer	15	20

A refund of normally nonrefundable fees could be approved in cases when the student is not accepted for enrollment by TSTC or when a class is canceled. TSTC reserves the right to withhold refunds when a student is suspended for disciplinary reasons. No refunds will be processed until time has elapsed for a check to clear the bank. Refunds are given to a student after receipt of the withdrawal notice from the Student Resource Center. Cash refunds are not permitted. Financial aid balances and other credit balances are disbursed via the BankMobile Card on the date announced at registration.

## Refunds for Federal Financial Aid Recipients

Special refund requirements apply to students who receive federal aid that is classified as "Title IV" funds. Title IV funds include awards such as Federal Pell Grant, Federal Supplemental Educational Opportunity Grant (FSEOG), William D. Ford Federal Direct Loans, PLUS loans and other federal awards. Students must attend classes to remain eligible for federal financial aid. Students who are considering withdrawing from all classes before completing 60 percent of the semester should contact the Student Resource Center to learn how this will affect their financial aid.

If a student reduces a course load or withdraws from TSTC, the College and/or the student may be required to return federal funds awarded to the student. The student may be eligible for a refund of a portion of the state and designated tuition paid to TSTC for that term.

An unofficial withdrawal is when the student stops participating in all the classes during the semester, and all final grades are F's. Students will be responsible for repaying federal aid based on return of Title IV calculations, based on the last date of participation, unless an instructor certifies and documents that the student was participating in at least one class after the 60 percent point of the term or until the end of the term. A term may consist of one or more blocks or modules.

If the student received financial assistance, the refund is returned to the grant, scholarship or loan sources from which the assistance was received.

A federal formula dictates the amount of Title IV aid that must be returned to the federal government by the College and the student. This formula applies to a student who is receiving Title IV funds if the student withdraws from the College before the 60 percent point in time of the term. The percentage of Title IV aid to be returned is equal to the number of calendar days remaining in the term divided by the number of calendar days in the term. Scheduled breaks of five consecutive days or more are excluded from this calculation.

If any funds are to be returned after the refund of Title IV aid, they are used to repay TSTC funds, state funds and other private sources. If there is an unpaid balance, then all aid sources are repaid before any funds are returned to the student. Funds released to a student due to a credit balance on the student's account do not relieve the student's obligation to repay Title IV funds when the student withdraws.

## Order of Return of Title IV Funds

A school must return the Title IV funds to the programs for

which the student received aid during the payment period or period of enrollment as applicable, in the following order, up to the net amount disbursed from each source:

1. William D. Ford Unsubsidized Federal Direct Loan (other than PLUS loans).
2. William D. Ford Subsidized Federal Direct Loan.
3. Federal Pell Grant for which a return of funds is required.
4. Federal Supplemental Educational Opportunity Grant (FSEOG) for which a return of funds is required.
5. State, Institutional, Scholarship or other program requiring a refund for enrollment changes.

For more detailed information on the entire refund procedures for Financial Aid students or about the calculation of refund amounts, contact the Student Resource Center.

## Bookstore Refunds

Please visit or contact the bookstore for return and buy back policies.

Continuing Education books must be returned three days from the first day of class. Textbooks returned for a full refund must be in saleable condition and packaging, if applicable, must not be broken.

Tools, supplies and consumables are nonrefundable, unless they are defective. If they are defective, the items must be returned within two weeks of purchase and must be accompanied by the sales receipt in order to receive a refund.

## Housing Refunds

Upon completion and authorization of College Housing clearance documents, refunds will be based on the following TSTC approved fee schedule:

- Refundable portion of security deposit or remaining balance after charges.
- No refunds of rental fee will be given during the last 10 school days of the semester.
- Rent refunds are based on a pro-rated formula.

## Refund of Other Fees

No refunds are given for installment plan fees. No refunds are given for health insurance, malpractice insurance, and other miscellaneous student-requested fees after expenses have been incurred by the College.

# Financial Assistance

TSTC's philosophy is to provide financial assistance to students who would otherwise be unable to pursue a postsecondary education. However, the primary responsibility for paying the cost of a college education rests with the student and his/her family. Funds are available through the Enrollment Center or Student Resource Center to supplement those resources and staff members are available to assist students with financial aid questions and concerns.

TSTC offers a variety of financial assistance programs to help eligible students with the cost of attending TSTC. The funds provided through these programs can be in the form of a grant, payment for part-time employment (Federal or State Work-study), Federal Direct Loan, scholarship, or a combination of any of these programs.

A grant is a gift that does not need to be repaid.

The Work-study Program is part-time employment that allows students to earn money and provides them with the opportunity to gain work experience.

Scholarships are funds that are awarded to students to help them with the cost of their education, and scholarships do not have to be repaid. A student may receive a scholarship based on academic merit, financial need, or for other criteria set forth by scholarship donors.

A Federal Direct Loan is borrowed money and must be repaid with interest.

See the Financial Aid website for a complete listing of financial assistance programs.

## Financial Literacy

TSTC, joined by other colleges and universities throughout the country, is concerned about student debt and financial literacy. In an effort to help students and their families, TSTC is providing money management tools right at their fingertips. There are many reports and statistics that indicate having high debt affects a student's enrollment, retention, and graduation.

Go online at <https://studentaid.ed.gov/sa/resources#college-prep-and-pay> or download your free app today. The TRELIS Company website offers information on how to budget by providing finance tools, including but not limited to, loan calculator, interest calculator and credit card calculator. There is also information on paying credit cards balances and repaying loans.

# Applying for Financial Assistance

## When to Apply

The key to obtaining financial assistance is to apply early. In order to ensure that an aid package is available and ready, TSTC recommends the completed file be received in the Enrollment Processing Center according to the following schedule:

### Priority Deadlines

Fall Term - June 1  
Spring Term - October 1  
Summer Term - March 1

Applications completed by these deadlines are processed for available funds on a first-come first-served basis. Late applications may not have funds available on registration (payment) day, when payment for state and designated tuition is due.

Since financial assistance is not always available by the payment deadline, it is recommended that students make alternative arrangements to pay registration expenses. Contact Student Accounting for information on installment plans or information on emergency tuition loans.

To be eligible for assistance, a student must:

- Complete the Free Application for Federal Student Aid (FAFSA). Be sure to complete the correct application for the year that you are applying for.
  - For Fall 2018 through Summer 2019 semesters, complete the 2018-2019 FAFSA.
  - For the Fall 2019-Summer 2020, please the 2019-2020 FAFSA available starting October 1, 2018.
- Verification documents and other forms may need to be submitted after the office reviews the application.
- Complete the admissions requirements, be accepted for enrollment, and enroll in an eligible program.
- Meet the TSTC financial aid standards of academic progress.
- Be a United States citizen or an eligible noncitizen.
- Other rules for foreign students and noncitizens may apply.
- Be registered with the U.S. Selective Service (if you are a male born after December 31, 1959). All males residing in the United States are required to register for Selective Service immediately following their 18th birthday. For Selective Service information go to [www.sss.gov](http://www.sss.gov).
- Must have a high school diploma or a GED (effective after July 1, 2012).
- Not be in default on an educational loan or owe a refund on any federal grants.
- Be registered each semester and pay tuition no later

than the 11th class day of the 15-week semester, the 9th class day of the 12-week semester, or by the census date for the class/classes registered for. Students registering after the 11th class day of the 15-week semester, the 9th class day of the 12-week semester or after census date may not be eligible for financial aid for that semester. Other rules apply to short summer sessions and online education courses.

Note: When the student is reported as not attending class prior to census, the student's financial aid eligibility may be affected.

Awards are based on full-time enrollment. Awards will be reduced when students register for less than 12 credit hours.

## Determination of Award

TSTC attempts to meet the educational financial needs of students. Financial need is determined by subtracting the parent(s)' and/or student's expected family contribution (EFC, as determined by the Free Application for Federal Student Aid, known as FAFSA), from the total estimated cost of attendance or COA. Educational Financial Need = COA - EFC. Students are awarded aid based on financial need and the availability of funds. Financial aid programs have limited funds; therefore, the Enrollment Processing Center may not be able to meet the student's financial aid packaging expectations, but it will try to meet the direct educational needs. Students will need to have a balance of gift aid and self-help assistance. Students are responsible for notifying the office about all resources provided to the student.

## Student Cost of Attendance Budget (include COA budget)

Cost of Attendance (COA) at TSTC is based on the number of credit hours that are eligible for Financial Aid funding. The initial calculation of a student's COA is based on full time enrollment. The COA is adjusted based on a student's actual enrollment level on the latest census date for courses in which the student is enrolled within the term.

Transportation and housing costs will be based on the housing code reported on the student's FAFSA.

- Adjustments to the cost of attendance may be considered on a case-by-case basis for child care expenses, excessive transportation costs, purchase of a computer, etc.
- TSTC employees and their eligible dependents are charged the adjusted tuition rate approved by the TSTC Board of Regents.

Due to time constraints, the student may not receive immediate notification of the adjustment; therefore, students should monitor their awards and balances on WebAdvisor.

## How to Apply

These are the first steps in applying for financial assistance.

1. Complete the Free Application for Federal Student Aid (FAFSA), using the appropriate federal tax forms.
2. Complete the FAFSA through the Internet at [www.fafsa.gov](http://www.fafsa.gov). For more information regarding this, contact FAFSA Customer Service at 1-800-433-3243 or TTY: 1-800-730-8913.

or

If you would like the TSTC Enrollment Center or Student Resource Center to assist you in submitting your FAFSA electronically, please have the following available:

- (a.) You will need records of income earned in the year prior to when you will start school. You may also need records of your parent's income information if you are a dependent student.
- (b.) For the 2018-2019 school year you will need financial information from 2016. For the 2019-2020 school year you will need financial information from 2017. You will need to refer to:
  - (i) Your Social Security Number (can be found on Social Security card).
  - (ii) Your driver's license (if any).
  - (iii) Your W-2 Forms and other records of money earned.
  - (iv) Your (and your spouse's, if you are married) Federal Income Tax Return - IRS Form 1040, 1040A, 1040EZ, 1040 Telefile, foreign tax return or tax return for Puerto Rico, Guam, American Samoa, the U.S. Virgin Islands, the Marshall Islands, the Federated States of Micronesia.
  - (v) Your parent's Federal Income Tax Return (if you are a dependent student).
  - (vi) Your untaxed income records - Social Security, Temporary Assistance to Needy Families, welfare or veterans benefits records.
  - (vii) Your current bank statements.
  - (viii) Your current business and investment mortgage information, business and farm records, stocks, bonds and other investment records.
  - (ix) Your alien registration card (if you are not a U.S. citizen).
3. Officially declare a major to the TSTC Enrollment

Center and complete the admissions process.

Undeclared majors are not eligible for financial aid.

4. Preregister according to College registration dates and guidelines. Please keep in mind that financial aid will only cover courses that are within your degree plan.

If your awards are cleared and you register early, your financial aid will be credited to your student account prior to the start of classes. Additional steps may be required for some types of financial assistance. For example, loans need promissory notes. Certain programs require additional documentation before grant processing. Contact the Enrollment Center for more information and assistance.

## Packaging Philosophy

The Federal Pell grant is initially awarded based on full-time enrollment status. Adjustments are made based on a student's actual enrollment level; students enrolled for 12 or more credit hours receive the maximum Pell entitlement, nine to 11 credit hours receive 3/4, and six to eight credit hours receive 1/2 the award. Less than half-time students who qualify receive the Pell amount determined for enrollment between one and five financial aid credit hours. TSTC uses the student's latest census date for all classes enrolled for within the term as the official lock date for the term. Adjustments will be made to Pell awards if classes are dropped prior to that date. Other grants, loans, and scholarships may be canceled if the student is enrolled for one to five credits.

Additional financial aid is awarded on a first-come, first-served basis or based on program eligibility. Due to limited funds, preference may be given to full-time students who meet priority deadlines. Students who are enrolled at least half-time may request to be considered for additional assistance. Funds are not guaranteed due to the limited availability.

## Denial of Aid and/or Repayment

Financial assistance may be reduced, denied or canceled, and students may owe repayment if they:

- Purposely give false or misleading information (they may be fined \$20,000, sent to prison, or both);
- Are on academic/financial aid suspension;
- Owe money to TSTC or the Department of Education;
- Fail to report any changes in circumstances that may affect the award such as assistance from Workforce Innovation and Opportunity Act (WIOA), Department of Assistive and Rehabilitative Services (DARS), outside scholarships, child care assistance and other programs of assistance;
- Withdraw from TSTC or drop below half-time at

any time of the semester, or fail to meet eligibility requirements;

- Fail to begin attendance in one or all classes between the first day and census day;
- Are awarded Federal Pell Grant for more than one school for the same period of time;
- Stop attending classes without officially dropping or withdrawing; or
- Fail to notify TSTC about aid awarded at other institutions;
- Default on a student loan;
- Owe overpayment of grants.

### Change in Circumstances

Financial aid awards are based on information reported on the financial aid application and the student's enrollment status. Any financial situation that has recently changed because of, but not limited to, loss of job or benefits, death or other hardship may qualify a student for an Unusual Circumstances Evaluation.

The document is available at the Enrollment Center or Student Resource Center or can be obtained through the Student Portal at [www.portal.tstc.edu](http://www.portal.tstc.edu).

### Reapplying/Renewal Applications

Financial aid is not automatically renewable. The FAFSA must be submitted each academic year. Applications for the following academic year are available each prior year on October 1. The priority application deadline for the fall semester is March 1. An academic year includes three semesters: fall, spring and summer.

### Verification of Information

All applications and forms must be completed carefully and accurately. The Department of Education or TSTC may select your application for verification. Visit the TSTC Portal at [www.portal.tstc.edu](http://www.portal.tstc.edu) to complete the necessary documents or request them at the Enrollment Center or Student Resource Center. Parent and/or student/spouse's Federal Income Tax Transcripts, W-2's, Social Security, unemployment, child support paid or received, received SNAP or other income benefit documentation will be required. Students are responsible for submitting accurate information in order to prevent a delay in the processing of the application. Failure to complete the verification process will prevent financial aid awarding.

Note: Documents submitted should be official documents from agencies such as IRS, Social Security, Office of Attorney General or other agencies.

## Types of Financial Assistance

A variety of resources are available for financial assistance at TSTC. Some of these are included in the following list. Visit the Financial Aid website for more complete information.

- **Federal Pell Grant:** This federal aid program provides financial assistance for obtaining a postsecondary education. It is intended to be the base of a student's financial aid package. Eligibility is based on the student's FAFSA need analysis results, the cost of attendance and enrollment status. Students are only eligible to receive six academic years (600 percent) of Pell Grant funds which is referred to as Lifetime Eligibility Used.
- **Federal Supplemental Educational Opportunity Grant (FSEOG):** This federal aid program helps college students who have exceptional need. The amount of the FSEOG varies according to the availability of other grants, scholarships, loans and student employment. FSEOG funds are limited and are awarded on a first-come first-served basis.
- **Texas Public Education Grant (TPEG):** This state program provides financial assistance in obtaining a postsecondary education. Eligibility is based on a student's financial need.
- **Texas Educational Opportunity Grant (TEOG):** These state awards pay state and designated tuition for students who are Texas residents, show financial need and do not have an Estimated Family Contribution of more than \$5,233. They must be enrolled in a TSTC certificate or degree-seeking program (Academic Core and non-degree-seeking students are not eligible). Students must be within the first 30 credit hours for consideration. TEOG funds are limited and are awarded on a first-come first-served basis.
- **Federal and State Work-study Program:** The Federal College Work-study Program is funded under the authority of the Economic Opportunity Act of 1964 and subsequent amendments. This program is jointly funded by the federal government under Title IV. In addition, the Texas College Work-study Program provides eligible, financially needy students with jobs, which are partly funded by the state of Texas. All students considered for employment under the Work-study Program are ensured equal employment opportunities without regard to race, color, religion, gender, national origin, age, genetic information, disability, or veteran status.

Federal and Texas Work-study Programs allow students to work part-time to help them pay for educational expenses. The programs encourage community service jobs as well as work related to the student's chosen program of study. At all times, the priority should be given to the student's academics. Therefore, the Work-study Program is not intended to interfere with the student's education. Student Work-study employees cannot work during scheduled class time.

Students who are interested in applying for the Work-study Program may indicate their interest in work-study on the Free Application for Federal Student Aid (FAFSA) and must apply online for specific jobs at [www.tstc.jobs](http://www.tstc.jobs). Students must be meeting the Financial Aid Standards of Academic Progress and be enrolled at least half-time in order to be eligible to participate in the Work-study Program. Funds awarded are subject to change due to enrollment status or failure to meet program requirements. A background check is required for some Work-study students. As applicants of a position students may be selected for interviews and if selected will be notified by phone and/or email once selected by the Human Resources Office. A selected student will meet with Human Resources staff to complete employment forms.

- **Texas Department of Assistive and Rehabilitative Services:** The Texas Department of Assistive and Rehabilitative Services (DARS) provides financial assistance to eligible students whose disability may result in substantial vocational limitations. In order to provide training assistance, DARS must determine that such training is necessary for employment and that the individual has a good chance of success in the chosen program. Contact your local DARS office for more information.
- **Workforce Innovation and Opportunity Act (WIOA):** The Workforce Development Board in your area may offer payment of tuition and/or other expenses to students who qualify for this program. Interested applicants should contact the nearest Workforce Center or call 1-800-457-5600 or 1-800-457-5633. Applications for the program should be made as far in advance of registering as possible.
- **Federal Loans:** Various types of federal loans are available, including the Federal Direct Subsidized, Federal Direct Unsubsidized and Federal Direct Parent Loan. To be certified for a loan, students must first complete the Free Application for Federal Student Aid (FAFSA), as described earlier in the Financial Assistance section. First-time Federal Direct Loan borrowers will need to complete an online entrance

counseling and electronically sign a Master Promissory note before completing the loan process.

## Student Loan

If the student is on financial aid suspension, the application will not be approved. The student will need to meet satisfactory academic progress guidelines. First-year, first-time borrowers must wait 30 days before their first disbursement can be released. To be eligible for a loan, students must have a current financial aid application on file, must be enrolled for six credit hours, not be on financial aid suspension or in default, and meet any other current eligibility requirements.

TSTC candidates for graduation who have borrowed a Direct or FFEL loan are required to complete a loan exit counseling session at <https://studentloans.gov>. This should be done before graduation in order to avoid graduation holds. The 150 percent limit on Direct Subsidized Loan eligibility is not the same as the financial aid standards of satisfactory academic progress maximum time frame of 150 percent for completion of a degree or certificate program. The financial aid standards of satisfactory academic progress maximum time frame is based on 150 percent of the program length as determined by total attempted credits.

NOTE: Other awards may be adjusted accordingly once the Federal Direct Loan has been processed and awarded.

## Maximum eligibility period to receive Direct Subsidized Loans

Time Limitation on Direct Subsidized Loan Eligibility for First-Time Borrowers on or after July 1, 2013.

There is a limit on the maximum period of time (measured in academic years) that you can receive Direct Subsidized Loans. In general, you may not receive Direct Subsidized Loans for more than 150 percent of the published length of your program. This is called your "maximum eligibility period." You can find the published length of any program of study in this catalog.

For example, if you are enrolled in a 1-year certificate degree program, the maximum period for which you can receive Direct Subsidized Loans is one and a half years (150 percent of 1 year = 1.5 years). If you are enrolled in a 2-year associate degree program, the maximum period for which you can receive Direct Subsidized Loans is three years (150 percent of 2 years = 3 years).

Your maximum eligibility period is based on the published length of your current program. This means that your maximum eligibility period can change if you change

programs. Also, if you receive Direct Subsidized Loans for one program and then change to another program, the Direct Subsidized Loans you received for the earlier program will generally count against your new maximum eligibility period.

To complete Stafford Entrance Counseling: All new TSTC student loan borrowers including transfer students borrowing for the first time at TSTC must complete online entrance counseling. Log in to <https://studentloans.gov>. You **may** see a message stating that you have already completed Entrance Counseling, however, you must select "continue" in order to proceed to the Entrance Counseling session. As part of your "Entrance Counseling" please review the information about the 150 percent borrowing regulation at Federal Student Aid.

## Maintaining Eligibility for Financial Aid

The following Standards of Academic Progress (SAP) are adopted for the purpose of determining continuing student eligibility that are receiving or applying for financial aid. Academic progress will be reviewed at the end of each term to determine that the student is making satisfactory progress. This review will include all periods of the student's enrollment, even those for which the student did not receive financial aid. Students are expected to be continually aware of their grades.

### Financial Aid Standards of Academic Progress

TSTC evaluates all parts of the Satisfactory Academic Progress standards at the end of each term of enrollment.

Students who receive financial aid must be enrolled in an eligible program and are required to maintain the following standards of satisfactory academic progress (SAP). These measurements shall be used to determine eligibility for all federal Title IV aid, state and institutional aid, and for other financial assistance unless the terms of a particular grant or funding source require additional terms. SAP is calculated at the end of each term. Some aid programs require higher standards, such as higher grade point averages (GPA) or specific enrollment statuses. Students receiving financial aid must have a declared major in a degree or eligible certificate program. Students are expected to be continually aware of their progress toward their completion. A student who fails to meet the standard of progress (SAP) will be notified by email at the email address on the student record; however, failure to receive notification will not change the SAP status.

Appeals will only be granted for conditions causing extreme hardship to the student, such as the death of a

family member, illness or injury of the student, or other mitigating circumstances. The appeal should include supporting documentation regarding your mitigating circumstance, such as medical statements or death certificates, or other supporting documentation. Appeals for mitigating circumstances will be considered during a student's enrollment at TSTC, on a case by case basis. Submitting an appeal does not guarantee approval of the appeal. Appeals will be reviewed by financial aid staff and may be appealed to the Assistant Director of Financial Aid and to the Director of Financial Aid. The decision of the Director of Financial Aid will be final and cannot be appealed. Appeals for students who have exceeded the maximum time frame are reviewed by the Financial Aid staff. Students are notified of the appeal decision by email. The decision of the Financial Aid staff may be appealed to the Assistant Director of Financial Aid and to the Director of Financial Aid. The decision of the Director of Financial Aid is final and cannot be appealed. Not enrolling for one or more terms does not remove the probation or suspension status.

### Qualitative Progress Measure:

#### Minimum Cumulative Grade Point Average (GPA)

To continue receiving financial aid, you are expected to successfully complete your classes with passing grades. You must have at least a 2.00 cumulative GPA (based on all terms of enrollment) and at least a 2.00 term GPA during each period of enrollment. All courses that a student has taken, including transfer credits accepted towards their certificate or degree at TSTC, college-level courses and developmental courses will be evaluated.

Transfer students who did not meet SAP at another institution of higher learning may not be eligible for a waiver/exemption at TSTC until they meet SAP requirements at TSTC.

### Quantitative Progress Measure #1: The Pace of Progression or Completion Rate each Semester

When you enroll in classes and receive financial aid to pay for those classes, you are expected to successfully complete those classes. Effective July 1, 2011, you must complete at least 67 percent of the credit hours in which you enrolled during each term. You must also achieve a minimum cumulative completion rate of 67 percent of all courses attempted during your enrollment. Only passing grades count as successful completions. Incomplete, in progress, failing grades, and drop/withdrawals are not considered completed courses, but are considered attempted courses, and will be calculated in the 67 percent completion requirement. All courses, including remedial courses, are included in the calculation.

## Quantitative Progress Measure #2: Maximum Time to Complete a Degree/Program

To ensure that you complete your program in a reasonable amount of time, a limit set by 34 CFR 668.34 has been placed on the number of hours that you can attempt. The limit is 150 percent of the minimum number of hours required to complete your program. For example, if your degree program requires 60 credit hours for completion, you must complete your degree or certificate program within a maximum of 90 attempted credit hours. Once you reach the 150 percent limit or the Financial Aid Office determines that you cannot complete your program within the 150 percent limit, you will no longer be able to receive financial aid. Several variables are considered when calculating the 150 percent limit and the satisfactory progression rules. These variables include, but are not limited to:

- All attempted credit hours are counted even if you were not receiving aid to pay for them. Attempted hours are the hours in which you are enrolled, as of the census date, in every term.
- Any transfer hours that are accepted from other colleges and applied toward the completion of your program are counted in the maximum time frame. If you have previously attended any college, you must submit official transcripts from all previous colleges prior to any financial aid being released.
- If you repeat a course, both attempts will be counted in the maximum credit hours and progression calculation, even if you did not receive aid for both attempts. Financial aid will only pay for two attempts in a college-level course. Separate rules apply for developmental courses.
- If you withdraw from a course(s) after the census date for that course, it is still counted as an attempted course and is included in the SAP calculation.
- All periods of enrollment and attempted credits will be evaluated, as they apply to the current program of study, whether or not financial aid was awarded during prior enrollment periods.

When you receive financial aid to help pay for a program of study, you are expected to complete that program within the specified time frame for that program. You should not enroll in classes that are not required for your chosen program of study. Classes not required for your degree plan are not eligible for financial aid. Additionally, audit courses, continuing education courses, previously passed courses and courses for which you enroll after the census date are also not eligible for financial aid.

## Change of Major and Transfer Credits

Students receiving financial aid must have a declared certificate or degree eligible program. Students should register for courses approved for their designated degree plan/catalog year. Change of Major requests will be considered. Change of Major request forms must be submitted to the Student Resource Center and personnel will change the student's major to ensure that the student's new program is tracked for SAP.

Transfer credits that are applicable to the student's degree plan will be counted in both the attempted and completed credits.

## Additional Certificates and Degrees

Additional certificates and degrees will be considered or reviewed on a case by case basis. The student must be meeting SAP requirements. Changing programs will not change a student's current status. The student's timeframe and continued eligibility will be re-evaluated at the time of the review.

## Additional SAP Rules: Remedial or Developmental Coursework

You may be able to take up to 27 hours of remedial or developmental coursework and receive financial aid to pay for those costs. These courses will be included in the qualitative and quantitative measurements for SAP. All courses, including failures, incompletes, in progress, or drop/withdrawal are counted toward the maximum 27 credit hour limit. Once you have attempted 27 credit hours of remedial or developmental classes, you will not be able to receive additional financial aid to pay for those courses. Enrollment in these courses is indicated by testing or as recommended by an advisor.

Financial aid will **NOT** pay for:

- Courses taken by audit.
- Courses taken outside of your degree plan requirements.
- Courses attempted more than two times (except remedial/developmental courses).
- Also not covered are credits exceeding the 27 maximum credits for developmental courses.
- Courses previously passed unless, the course grade failed the minimum grade requirement for the program of study.
- Starting July 1, 2011, only two attempts will be approved, if a course was previously passed. A third attempt will not be paid by financial aid. The student's degree plan must specify the minimum course grade required.
- Credit hours earned by placement tests.

- Continuing education courses.
- Courses for which you register after the official census date of the term.
- Timeframe and/or credit hours in excess of the 150 percent maximum program limit.
- Courses taken without having a declared eligible program (enrolled as undeclared, undecided, or non-degree-seeking).

### Failure to Meet the Financial Aid Standards of Academic Progress Warning

This status is assigned to students, who fail to meet Standards of Academic progress at the end of a semester. Students on 'warning' status may receive financial aid, without completing an appeal.

The first time that a student fails to meet the qualitative (minimum 2.0 semester or cumulative GPA) or quantitative requirements (minimum 67 percent of courses completed for the term or cumulatively), the student will be placed on financial aid warning. The only exception is for exceeding maximum hours, which results in immediate suspension. Failing to meet any one of the SAP measurements during the warning period will place a student on suspension.

### Suspension

There are several conditions that may place a student on suspension. The student is responsible for paying all expenses during any enrollment period(s) while on suspension. Students can be placed on suspension after a warning or probation status.

- Reaching the maximum time frame for the program of study can also lead a student to suspension.
- A student who fails to meet any of the standards of academic progress measures during a warning period will be placed on financial aid suspension and will lose eligibility for all financial aid until all SAP measures have been met. It may take several terms of enrollment to regain eligibility.
- A student who is on probation and who fails to meet the academic or Success Plan measurements will be placed on suspension.

### Other types of Financial Aid Suspension:

#### Maximum Time Frame

- A student who has reached the maximum time frame for their program of study will be placed on maximum time frame, which is a type of financial aid suspension. The maximum time frame is calculated by multiplying the number of hours required for the program by 1.5.
- If the Financial Aid Office mathematically determines

that you cannot complete your program within the 150 percent limit, you will immediately be placed on maximum time frame.

- Once the 150 percent limit has been met, you cannot regain satisfactory progress or financial aid eligibility for that program of study.

### Maximum Time Frame Suspension

A student who has reached the maximum time frame for their program of study and has also failed to comply with another SAP requirement, such as having a term or cumulative GPA below 2.0 or a term or cumulative completion rate below 67 percent will be placed on maximum time frame suspension.

### Reinstatement of Financial Aid Eligibility

If you are on financial aid suspension, for reasons other than reaching the maximum time frame, you may have your aid reinstated in one of the following manners:

1. Continue to attend Texas State Technical College without financial aid until you are able to achieve both:
  - A cumulative GPA of 2.0 or higher along with 2.0 GPA for your last term of enrollment.
  - A 67 percent cumulative completion rate along with a 67 percent completion rate for your last term of enrollment.

Once you have met both of these standards, you will once again be eligible to receive aid as long as you continue to maintain academic progress. It may require multiple terms for students with an extremely low GPA and or completion rate to regain financial aid eligibility.

2. File an appeal demonstrating mitigating circumstances and be approved.

Note: If you have reached the maximum time frame, you may not regain eligibility to receive additional financial aid unless an appeal is granted.

### Appeal Process

Students who are placed on financial aid suspension, maximum time frame, or maximum time frame suspension may file an appeal based on mitigating circumstances.

Note: Appeals should include supporting documentation.

The student is responsible for any payments and meeting payment deadlines, during the appeal process. The student should not miss payment deadlines, while waiting for a response. Failure to pay for tuition and fees may result in deregistration. The student is responsible for

balances due, if the student withdraws before or after an appeal is denied.

Appeals will only be granted for conditions causing extreme hardship to the student, such as the death of a family member, illness or injury of the student, or other mitigating circumstances. The appeal should include supporting documentation regarding your mitigating circumstance, such as medical statements or death certificates, or other supporting documentation. Appeals for mitigating circumstances will be considered during a student's enrollment at TSTC, on a case by case basis. Submitting an appeal does not guarantee approval of the appeal. Appeals will be reviewed by Student Resource Center staff and may be appealed to the Assistant Director of Financial Aid. The decision of the Assistant Director of Financial Aid will be final and cannot be appealed. Appeals for students who have exceeded the maximum time frame are reviewed by the Financial Aid staff. Students are notified of the appeal decision by email. The decision of the Student Resource Center staff may be appealed to the Assistant Director of Financial Aid. The decision of the Assistant Director of Financial Aid is final and cannot be appealed. Not enrolling for one or more terms does not remove the probation or suspension status.

**A suspension appeal must include the following:**

- A completed Satisfactory Academic Progress Appeal Form.
- A written description of the mitigating circumstances.
- Documentation to support any claims.
- A description of the steps you have taken to remedy the situation (Success Plan).
- Recommendation from instructor/advisor.

**A maximum time frame appeal must include the following:**

- A completed Maximum Time Frame Extension Appeal Form.
- A written description of the mitigating circumstances.
- A degree plan showing the number of hours remaining until graduation.
- Recommendation from instructor/advisor.

**A maximum time frame suspension appeal must include the following:**

- A completed Satisfactory Academic Progress Appeal Form.
- A written description of the mitigating circumstances.
- A degree plan showing the number of hours remaining until graduation.
- A description of the steps you have taken to remedy the situation (Success Plan).

Once you are notified of not being eligible for financial aid (financial aid suspension), you have (5) working days to submit an appeal or up to the subsequent semester census date, whichever comes first.

## Appeal Decisions

### Maximum Time Frame Appeal Approved

The student's progress will be reviewed at the end of each term. Failure to meet both GPA and completion rate standards will result in suspension of aid.

### Maximum Suspension Appeal Approved

The student will be placed on an academic plan and their progress will be reviewed at the end of each term. Failure to meet both GPA and completion rate standards will result in suspension from aid.

### Probation

A student will be placed on probation if we determine that he or she should be able to reach both the 2.0 term and cumulative GPA and 67 percent term and cumulative completion rate requirements at the end of the next term of enrollment. If the student fails to meet any of these standards, he or she will be placed on financial aid suspension.

### Academic Plan

A student may be placed on an academic plan under which they are able to achieve a 2.0 GPA by the end of their second year of enrollment so that they will be eligible for graduation. While on this status, a student must be making progress according to an academic plan which dictates that a student must achieve a term GPA of 2.0 or higher and a term completion rate of at least 67 percent in order to continue to retain aid eligibility. The first term that a student is under an academic plan will be a probationary term. If the student complies with the terms of the academic plan, he or she will be making academic progress and can continue to receive aid as long as they meet the conditions of the plan. Failure to achieve these conditions will result in suspension.

### Appeal Denied

The student will not be eligible to receive financial aid until he or she meets the Satisfactory Academic Progress (SAP) standards as listed above; both a cumulative 2.0 GPA and a cumulative completion rate of 67 percent. It may take several semesters in order for a student to regain aid eligibility.

## Repayment of Federal Funds: Return of Title IV

If a student receives federal financial aid and stops attending or withdraws from all courses at or before 60 percent of the term is completed, the student will be required to repay all or a portion of the federal aid received, including aid used to pay for college expenses. If the student received a grade of F in all courses for any term, the student will be required to repay a portion of the federal aid received, based on last date of participation, unless an instructor certifies and documents that the student was participating in at least one class after the 60 percent point of the term or until the end of the term. A term may consist of one or more blocks or modules.

For information on the return of Title IV funds, go to [www.tstc.edu/financialaid/returnoffunds](http://www.tstc.edu/financialaid/returnoffunds)

## Veteran Services

Veteran Services will serve as a centralized point of contact to assist prospective and current veterans, veteran dependents and active duty military students with navigating college resources to ensure a successful college experience. The Veteran Services staff may serve as advocates for student veterans and act as liaisons between the student and other college offices, community resources and the Veteran Affairs Department.

The following services are provided by Veteran Services:

- Application support—FAFSA, Admissions, Hazlewood and GI Bill.
- TSTC Portal and WebAdvisor training.
- College policies and procedures support.
- On campus job information and referral.
- Veteran benefits information and assistance.
- Coordinate referrals for veterans and their dependents.
- Educationally related printing and faxing support for veterans and their dependents.
- Assistance with scholarship searches and application process.
- Referral to campus Student Support Services Office .
- Tutoring support and referral.
- Computer lab access and support.
- Academic advisement support.
- College credit evaluation support.

## Veteran Benefits

TSTC is approved for training service members, veterans and their eligible dependents under the provisions of various laws commonly called the GI Bill. The student is responsible for tuition and fees not covered by GI Bill or the Hazlewood Tuition Exemption. A spouse or child of a veteran may receive benefits under certain conditions. The DD form 214 and all official college, university and military transcripts are required. Veterans who are eligible for assistance under any of the Department of Veterans Affairs programs should contact Veteran Services.

Veterans interested in using their GI Bill benefits must submit the following documents to Veteran Services before enrollment certification can be processed and submitted to the Veterans Affairs Education Department.

1. Certificate of Eligibility – apply for benefits by submitting VA Form 22-1990 at [www.ebenefits.va.gov](http://www.ebenefits.va.gov).
2. DD Form 214 (member 4).
3. Official Military Transcripts and University/College transcripts (to the Enrollment Center).
4. VA Form 22-1905 – required for Veterans using Chapter 31 (Vocational Rehabilitation & Employment Division).
5. DD Form 2384 (NOBE) – required for Veterans using Chapter 1606.
6. Transcript Evaluation Form.
7. VA Form 22-1995 – when changing major field of study or incoming transfer student.
8. Valid State ID.

Dependents using GI Bill Chapter 35 or Chapter 33 must submit the following documents:

1. Certificate of Eligibility - apply for benefits by submitting VA Form 22-5490 at [www.ebenefits.va.gov](http://www.ebenefits.va.gov).
2. DD Form 214 (member 4) – Chapter 33 exempt, if Veteran is on active duty.
3. Veteran's service-connected compensation claim, decision letter. (Chapter 35).
4. University/College transcripts (to the Enrollment Center).
5. Transcript Evaluation Form.
6. VA Form 22-5495 - (Chapter 35) when changing degree plan or incoming transfer student.
7. Valid State ID.

Service members, Veterans and dependents are encouraged to review all benefits at [www.gibill.va.gov](http://www.gibill.va.gov) before applying for educational benefits. Texas Veterans and their dependents may be eligible for benefits under the Texas Hazlewood Act. The Texas Hazlewood Act

encompasses many different tuition exemptions and/or waivers for eligible Veterans and their dependents. Please visit [www.tvc.texas.gov](http://www.tvc.texas.gov) to view all eligibility requirements. Texas Veterans interested in using the Hazlewood Tuition Exemption must submit the proper application and all supporting documentations to the Veterans Services Office.

### No Show Status

Veterans reported as a No Show will have their enrollment certification interrupted and may lose their seat for one or all of their courses. Overpayment due to a No Show Status is the Veteran's responsibility, and money may be owed to TSTC and/or VA Education Department.

### Enrollment Certification

Only classes that earn credit toward the Veteran's VA approved signed degree plan will be certified to VA. Veterans will not be certified for repeat courses that are considered completed. It is the Veteran's responsibility to meet with their Program Advisor and register for the required classes. You may request a printout of your program evaluation from your Department Advisor, Veteran Services or print the Program Evaluation that is available in the TSTC Portal.

## Veterans Guide For Success

### Step 1:

**Apply for Admissions and complete the required admissions process. (Admissions Checklist.) Veterans are recommended to check their residency status with the Enrollment Center.**

If your **HOME OF RECORD** is Texas and you have been discharged within 12 months, please submit a copy of your DD214 (member 4) to the Enrollment Center. Please visit [www.collegforalltexas.com](http://www.collegforalltexas.com) to view other residency waivers available for service members, veterans and/or their dependents.

An acceptance letter containing your student ID number will be mailed to you.

### Step 2:

**Apply for your GI Bill and/or Texas Hazelwood Act**

Apply for your GI Bill benefits online at [www.vets.gov](http://www.vets.gov).

- Form 22-1990 for Veterans using (Chapter 30, 33, 1606).
- Form 22-1990e for Dependents and Spouses using Post 9/11 GI Bill (Chapter 33) transfer of entitlement.

- Form 22-5490 for Dependents and Spouses using Dependents' Education Assistance (Chapter 35).

You will receive a Certificate of Eligibility letter from the Veterans Administration in 4-6 weeks. Please submit a copy of your Certificate of Eligibility to the Veteran Services Office.

**NOTE: If you have previously used your GI Bill benefits at another school then you will have to complete a transfer form. Please visit Veteran Services for assistance with the forms below. An updated Certificate of Eligibility will be required by Veteran Services.**

- Form 22-5495 for Dependents or Spouses.
- Veterans using Vocational Rehabilitation & Employment Division (Chapter 31) are required to submit Form 28-1905. You may request that your VocRehab counselor send the form directly to Veteran Services.

### Step 3:

**Submit all required documentation**

Veterans are required to submit the following documentation to Veteran Services.

1. Certificate of Eligibility (COE).
2. DD Form 214 (member 4).
3. Official military transcripts (Request Official Military Transcripts from the [Joint Service Transcript System](#), or Community College of the Air Force (CCAF)) and university/college transcripts (Submitted to the Enrollment Center).
4. VA Form 22-1905 - required for Veterans using Chapter 31.
5. DD Form 2384 (NOBE) - Required for Veterans using Chapter 1606.
6. VA Form 22-1995 - When changing major field of study or incoming transfer students.
7. Valid State ID.

Dependents using GI Bill Chapter 35 or Chapter 33 transfer of entitlements must submit the following documents:

1. Certificate of Eligibility (COE).
2. DD Form 214 (member) - Chapter 33 transfer of entitlement is exempt if Veteran is on Active Duty.
3. Veterans service - connected compensation claim, decision letter (Chapter 35).
4. University/College transcripts (Submit to the Enrollment Center).
5. VA Form 22-5495 - (Chapter 35) when changing degree plan or incoming transfer student.

#### Step 4: Apply for Financial Aid

Service Members, Veterans and their dependents are encouraged to apply for Financial Aid using the [Free Application for Federal Student Aid](#). To learn more about financial assistance, please visit our [Financial Aid website](#).

#### Step 5: Register with VA eBenefits

Create an eBenefits PREMIUM account to check your deposits from VA along with the history of your enrollment certification status and months of benefits remaining. You can set up direct deposit or update your address with VA.

#### To Contact Veterans Services in Your Area:

TSTC in Harlingen or Fort Bend County: 956-364-4386  
 TSTC in Marshall: 956-364-4386 or 325-734-3626  
 TSTC in North Texas: 254-867-3651  
 TSTC in Waco or Williamson County: 254-867-4817  
 TSTC in Abilene, Brownwood, Breckenridge or Sweetwater: 325-738-3347

#### Notes:

- Chapter 33 Veterans who are eligible for Hazlewood can use Hazlewood to "stack" on top of their 33 benefits to pay any remainder of tuition and fees ONLY not paid by Chapter 33 benefits.
- All students must apply for Hazlewood each semester they intend to use the tuition exemption.
- You MUST be enrolled in classes in order for the exemption to be posted. Please do NOT submit the application before enrolling.

#### Hazlewood Hours Account

To create an account for your Hazlewood benefits, or to log in to your account to obtain your hours used, go to the Texas Veterans Commission website: [tvc.texas.gov](http://tvc.texas.gov).

#### Waivers and Exemptions

TSTC is authorized to grant tuition and fee waivers to qualified resident and nonresident students based on Texas Higher Education Coordinating Board rules. For details, see "Tuition Waivers and Exemptions" in the Tuition and Fees section of this catalog.

\*NOTE: Effective Fall 2014, a law has been adopted by State Legislation (SB 1210, passed in 2013). The law requires that students must meet the Financial Aid Standards of Academic Progress for certain waivers and exemptions such as the Hazlewood Tuition Waiver.

These standards are outlined under the TSTC Satisfactory Academic Progress (SAP policy for Financial Aid).

## Scholastic Information

### Grading Standards

TSTC measures student achievement of skills, knowledge and competencies through a system of grading standards. Four grades (A, B, C, D) indicate that credit was received and a grade was awarded. One mark (CR) indicates that credit was received but no grade was awarded. One grade (F) and various other marks indicate that no credit was received and no grade points were awarded.

The following system of final grades and marks is used by TSTC to report student performance for each course attempted and/or credited toward graduation.

Grade	Interpretation	Grade Pts.
A	Excellent/Superior Performance Level	4
B	Above Required Performance Level	3
C	Minimum Required Performance Level	2
D	Below Required Performance Level	1
F	Failure to Meet Performance Requirements	0
P	Pass/Meets Required Performance Level (For use in a developmental course or a specialized course and may be used, at the discretion of the College, for up to six credit hours in a program)	NC
IP	In Progress (For use when a student has not had sufficient time to complete the course due to extended illness or other circumstances beyond the student's control. A grade of IP will be changed to a grade of F if the student does not complete the course requirements by a date specified by the faculty member or within one year, whichever is less.)	NC
IM	Incomplete-Military Leave (For use by students who are called to active military service near the end of a term. A grade of IM will be changed to a grade of W if the student does not complete the course requirements within two years of the date the IM grade was awarded.)	NC
W	Withdrawal	NC
CR	Credit (represents credit for courses that are accepted toward program completion and graduation as a result of transfer from other institutions or programs, advanced standing evaluation, credit by examination, articulation agreements, or other validations of course-required knowledge and skills)	NC

AUD	Audit of Course	NC
S	Satisfactory (for use in Continuing Education courses and programs)	NC
UN	Unsatisfactory (for use in Continuing Education courses and programs)	NC
X	No Grade Assigned	NC
FA	Failing (prior to September 1988)	0
I	Incomplete (prior to September 1988)	NC
U	Unsatisfactory (prior to September 1988)	0
WF	Withdrew Failing (prior to September 1988)	0
WP	Withdrew Passing (prior to September 1988)	NC

NC: Not Calculated

## Grade Point Averages

Grade points earned for each course are determined by multiplying the number of points for each grade by the number of credit hours the course carries. For example, a student who takes a three-hour course and earns an "A" accumulates 12 grade points for that course (3 hours X 4 points for an A = 12 points). A student's grade point average is computed by adding the grade point values for all college-level courses for which grade point values may be computed (A, B, C, D, F, FA, U, WF), and dividing this total by the number of credit hours attempted during the same period. Only hours for which grades are awarded are used in calculating the grade point average (GPA).

### Term Grade Point Average

The Term GPA is computed for all TSTC college-level courses with grades of A, B, C, D and F recorded during a specific term. Developmental education courses are excluded from the Term GPA calculation.

### Cumulative Grade Point Average

The Cumulative GPA is computed for all TSTC college-level courses using all grades and grade points earned since enrolling at TSTC. Developmental education courses are excluded from the Cumulative GPA calculation. The Cumulative GPA is used to qualify students for graduation and for graduation honors.

### Standards of Progress Grade Point Average

A Term and Cumulative Standards of Progress GPA is computed using all TSTC college-level and developmental education courses. The Standards of Progress GPAs are used for determining scholastic standing, term scholastic honors and financial aid eligibility. See "Financial Aid Standards of Academic Progress" in the Financial Aid section for more information.

## Scholastic Standing

TSTC's scholastic standards are based on a philosophy of advancing student progress toward successful course and program completion. The criteria for scholastic standing are designed to monitor student progress so that faculty and staff can intervene and assist students who have difficulty meeting minimum requirements. Scholastic standing is computed at the end of each enrollment period and is based on the Standards of Progress (SOP) Term and Cumulative GPAs.

### Good Standing

A student who maintains minimum 2.00 standards of progress cumulative and term grade point averages will be in good academic standing.

### Scholastic Probation

A student whose standards of progress cumulative and or term grade point average is below 2.00 at the end of an enrollment period is placed on scholastic probation. A student may continue on scholastic probation by achieving a minimum standard of progress term grade point average of 2.00 at the end of the enrollment period. A student is removed from scholastic probation when the standards of progress cumulative and term grade point averages are 2.00 or higher.

Scholastic probation is a serious warning that the quality of the student's work must improve in order for the student to continue enrollment in the College. Students on scholastic probation are required to meet with an advisor prior to registration and may be required to enroll in special programs or courses in order to improve grade point average. After meeting with an advisor, the student may be permitted to enroll in a new program while on scholastic probation.

### Scholastic Suspension

Scholastic suspension occurs when a student on scholastic probation fails to maintain minimum academic standards. A student on scholastic probation who fails to achieve a standard of progress term grade point average of 2.00 or higher will be suspended for a time period not less than one semester. At the end of the suspension period, the student may be permitted to re-enroll in the College. A suspended student may appeal for a waiver of a suspension to the Vice President for Student Learning or designee. A student who re-enters the College after having been suspended will be placed on scholastic probation status and will be subject to the minimum requirements governing scholastic probation.

## Term Scholastic Honors

Full-time students as of the end of term who earn a standards of progress term grade point average of 3.50-3.99 shall be recognized with the notation of Scholastic Excellence on the official transcript.

Full-time students as of the end of term who earn a standards of progress term grade point average of 4.00 shall be recognized with the notation of Chancellors Honor Roll on the official transcript.

### Graduation Scholastic Honors

Graduation honors will be awarded to students who graduate from a credit program based on the following cumulative grade point averages:

Board of Regents Honors: 4.00

With Honors: 3.50 - 3.99

Graduation honors will be listed on the official transcript.

## Notification of Grades

Students are expected to monitor their academic progress. Student grades are available upon course completion and students can view grades by accessing WebAdvisor. Students should review the grade reports for accuracy. All requests for review or correction must be submitted to the Student Resource Center within 12 months of the close of the semester in which the course was taken.

### Grade Changes

Student grades are among the most important records kept by the College. Policies and procedures ensure the privacy and integrity of student grade records and, at the same time, provide students a process to appeal final course grade decisions. The following policies and procedures must be followed to request a grade change.

- A grade change must be requested within 12 months of the issuance of a grade.
- A grade may be changed due to an error, a student completing course work previously graded "IP" (In Progress), or a fact-supported finding by appropriate members of the administration or appeal committee operating in accordance with established college procedures.
- A grade cannot be changed to a "W" (Withdrawal) unless doing so is in conjunction with an administrative drop or withdrawal from the College that is approved in accordance with college procedures.
- A change of grade form must be completed, noting

the reason for the grade change and signed by the student's instructor, appropriate department designee and the Registrar.

- Upon receipt of the completed and signed grade change form, the Registrar makes the official change to a student's transcript record.
- A copy of the change of grade form is placed in the student's permanent file for audit purposes.

## Transcript of Credit

The transcript of credit is an official statement of the student's complete academic record accumulated at TSTC. Upon a written or Web request to any TSTC campus, the Student Resource Center will release official transcripts to the student or to a third-party that is authorized by the student to receive the transcript. Normally, the minimum time for processing such requests is 24 hours; however, transcripts requested at the end of a term or during holidays may take longer for processing.

Students who request transcripts prior to the end of a term, with current courses and grades to be included in the transcripts, must clearly note the current work as part of the request. Official transcripts may be withheld if any financial obligations to TSTC have not been paid or if official transcripts have not been received from previously attended institutions. Students who have not complied with all exit requirements will not be provided with transcripts.

## Classification

Students are classified as freshmen if they have earned less than 30 hours of college credit. They are classified as sophomores if they have earned 30 to 72 hours of college credit.

## Course Load

Students in good standing may register for course loads equivalent to those specified in their instructional programs.

Students may register for less than normal loads but must register for a minimum of 12 credits to be considered full-time. Students who are making unsatisfactory progress or carrying excessive outside work may be required by department chairs or advisors to register for less than normal loads.

Students may register for up to 18 credits with the approval of the faculty advisor. Enrollment for more than 18 credits requires approval of the appropriate department designee.

## Texas Success Initiative (TSI) Requirements

In the Fall 2013 semester, the Texas Success Initiative (TSI) established college readiness standards for incoming students who have declared a certificate level II or associate degree program (42 hours or more) and are not otherwise exempt from testing. The TSI Assessment is designed to help higher education institutions determine if students are ready for college-level coursework in the general areas of Reading, Writing and Math. If the student does not meet testing requirements, the assessment will also help with student placement in courses that will aid in the preparation of student skills for college-level classes. For the latest exemptions please visit the Testing Center website.

### TSI Advisement

Students who do not meet TSI standards must meet with the identified Success Coaches at each campus. Success Coaches will work with students to establish an individualized Academic Success Plan. The Academic Success Plan is developed for each individual student according to the specific needs of the student and may include enrollment in developmental courses, tutorials, laboratories and/or other non-course-based activities to prepare the student for college-level coursework. The Plan will specify the appropriate measure for determining a student's college readiness. Academic Success Plans may include provisions for students to retake an approved TSI Assessment, subject to availability. For a list of identified Success Coach(es) please visit the Advisement Center in the Portal.

### TSI Test Standards

The following table provides the minimum passing scores on the TSI Assessment taken August 26, 2013 or after.

Reading: 351

Writing: Essay Score of 5 or higher; or Essay Score of 4 and Multiple-Choice of 340 or higher

Math: 350

### TSI Testing Schedule

The TSI Assessment and Pre-Assessment Activity are administered at the Testing Center. Check with the Testing Center for specific dates and times at each campus. The TSI Assessment and Pre-Assessment Activity are computer-based and can only be offered in a paper format for those with documented disabilities. For special accommodations, students are encouraged to make arrangements at least two weeks prior to test date.

Please be advised that late requests will be considered, but cannot be guaranteed. For more information please contact the Disability Services Office at your campus.

### Exemptions from TSI Requirements

1. Students who meet the score standards for ACT, SAT, STAAR, TAKS or TAAS tests may be exempt from TSI assessment standards in a specific skill area if the tests have been taken within the approved time frame. Students must provide official scores to the Testing Center prior to enrollment in order to qualify for this exemption. For a list of qualifying scores please visit the Testing Center website.
2. A student who has graduated with an associate or baccalaureate degree from an institution of higher education.
3. A student who transfers to an institution from a private or independent institution of higher education or an accredited out-of-state institution of higher education and who has satisfactorily completed college-level coursework as determined by the receiving institution.
4. A student who has previously attended any institution and has been determined to have met readiness standards by that institution. For students meeting non-algebra-intensive readiness standards in mathematics as defined in §4.59(d)(1)(B) of title 19 part (relating to Determination of Readiness to Perform Entry-Level Freshman Coursework), institutions may choose to require additional preparatory coursework/interventions for algebra-intensive courses, including MATH 1314/1324/1414 (or their local equivalent).
5. A student who is enrolled in a certificate program of one year or less (Level-One certificates, 42 or fewer semester credit hours or the equivalent) at a public junior college, a public technical institute, or a public state college.
6. A student who is serving on active duty as a member of the armed forces of the United States, the Texas National Guard, or as a member of a reserve component of the armed forces of the United States and has been serving for at least three years preceding enrollment.
7. A student who on or after August 1, 1990, was honorably discharged, retired, or released from active duty as a member of the armed forces of the United States or the Texas National Guard or service as a member of a reserve component of the armed forces of the United States.
8. A student who successfully completes a college preparatory course under Texas Education Code §28.014 is exempt for a period of twenty four months from the date of high school graduation with respect to the content area of the course. This exemption applies only at the institution of higher

education that partners with the school district in which the student is enrolled to provide the course. Additionally, an institution of higher education may enter into a Memorandum of Understanding with a partnering institution of higher education to accept the exemption for the college preparatory course.

## College-level Courses

TSTC has designated courses to satisfy requirements with TSI standards. Students who transfer from regionally accredited institutions of higher education with grades of C or higher in these courses (or equivalents) are determined to be “college ready.” Students must submit official transcripts indicating successful completion of the course(s). For more information, please visit the Enrollment Center.

## Advising

Texas State Technical College recognizes advisement as an essential contributor to the educational experience, student learning, and student success. TSTC provides strong institutional support and has developed a comprehensive advisement program to support student success. In support of student success, advisement services are designed to guide students through the various levels of the college experience to enable them to realize their personal, career, and educational goals, as well as prepare them for lifelong learning. Advisement services are available to all degree and non-degree-seeking prospective and current students.

All TSTC students are responsible for:

- seeking advisement;
- understanding assessments and Texas Success Initiative (TSI) requirements for their program of study;
- enrolling in courses in the appropriate sequence to ensure progress and success toward their educational objectives; and
- understanding and adhering to all policies and procedures.

Each TSTC campus provides faculty program advisors and identified staff to assist with TSI advisement. Students should consult WebAdvisor for their primary advisor assignment.

## New Student Advising

During the admissions process an Enrollment Center staff member acts as a guide for new students to make sure all admissions requirements are met. All new students are encouraged to contact an Success Coach to begin the advising process prior to or upon completing the admissions requirements.

## New Student Orientation

After the registration process, students will be advised of the campus New Student Orientation (NSO) schedule. New Student Orientation is a great way to begin your TSTC journey off in the right direction! You will be introduced to industry leaders, campus resources and learn how to get involved with campus activities. For details visit [www.tstc.edu/nso/home](http://www.tstc.edu/nso/home).

## Faculty Program Advisor

Program advisement will continue throughout the student's enrollment. All students are assigned a Faculty Program Advisor based on their major and a staff Success Coach. Students are responsible for scheduling an appointment with a Faculty Program Advisor, prior to registering for the subsequent semester. Faculty Program Advisors will inform students of any restrictions that may prevent them from registering. It is the student's responsibility to clear all restrictions. Faculty Program Advisors can assist with:

- Program admission requirements, if applicable.
- Degree and certificate completion, program changes.
- Licenses or certification for job placement.
- TSI compliance, as needed.
- Program completion time, course transfer, and substitutions.
- Time commitment to lecture and lab.
- Opportunities for career assessment and advisement.
- First Year seminar requirement.
- Maintaining academic and Financial Aid Standards of Progress.
- Departmental participation policy.
- Dropping/adding class(es) or withdrawing from the College.
- Job placement, gainful employment information, and job market expectations.
- Applying for graduation.

Students will meet with the program advisor each semester to make sure that the student is meeting all of the requirements to successfully graduate from the program.

## Testing Center

The Testing Center offers the TSI Assessment and distance learning proctored exams. Selected TSTC campuses may offer high school equivalency exam testing, CLEP and professional certification exams. For a complete list of assessments and tests please visit the Testing Center website.

## Nontraditional Services

Nontraditional occupations for females and males are defined as “a field in which either gender comprises less than 25 percent of the current enrollment.” Each TSTC campus provides services to assist qualifying students that are enrolled full-time in a declared nontraditional program of study leading to an Associate Degree or Certificate. For more information on services provided to nontraditional students please consult the following individuals:

Fort Bend County  
Coordinator of Support Services  
346-239-3394

Harlingen  
Coordinator of Support Services  
956-364-4525

Marshall  
Director of Student Services  
903-923-3313

North Texas  
Director of Student Services  
972-617-4724

Waco  
Coordinator of Support Services  
254-867-3066

West Texas (Abilene, Breckenridge, Brownwood and Sweetwater)  
Director of Support Services  
325-236-8292

Williamson County  
Director of Student Services  
512-759-5631

Services are funded through the Carl D. Perkins Vocational & Applied Technology Act and are contingent upon the availability of funds during the pertinent semester and the adherence to program policies.

## New Student Seminar Course

All current TSTC students and all transfer students with fewer than 24 Semester Credit Hours (SCH) are required to take New Student seminar course. This one-credit-hour, student-success course will present students with the essential knowledge to accomplish their goals at TSTC. New Student seminar course is the most important class a student will take at the College and provides a strong foundation for a student's academic career by focusing on student development, utilizing campus resources, and building

lifelong learning skills for academic and workplace success.

Dual enrollment students are exempt from taking the New Student seminar course. Students who intend to attend TSTC for one semester only may request a one-time exemption from New Student seminar course from the Office of Student Learning.

Transfer students who have successfully completed more than 24 credit hours may be exempted from taking a required New Student seminar course. All students are responsible for providing official transcripts to the Enrollment Center to receive the exemption. Transcripts should be received no later than one week prior to the start of the semester. The student is responsible for updating his/her schedule after providing transcripts that show 24 or more hours of successfully completed credit or after an exemption has been approved.

## Credentials

TSTC offers programs of study leading to Associate of Science degrees, Associate of Applied Science degrees and the Certificate of Completion. All programs are approved by the Texas Higher Education Coordinating Board.

- Associate of Science programs are designed specifically for students planning to pursue a bachelor's degree in the areas of biology, computer science, engineering, mathematics and physics. They include the institution's approved academic core curriculum and form the foundation and prerequisites for a seamless transition into a baccalaureate program at four-year institutions. Graduates of these programs will receive an Associate of Science degree.
- Associate of Applied Science degree programs are designed to train technicians who work with professionals. Because technicians must be able to understand the profession and translate ideas into actual processes, the technical programs combine theory and laboratory classes with laboratory and shop experience. All graduates of associate degree programs must show they are competent in Communication and the use of computers by satisfactorily completing at least one course in which communication and basic computer skills are covered. Graduates of these programs receive Associate of Applied Science degrees.
- Certificate programs are designed to produce the skilled workers needed by modern industry. Skill programs emphasize laboratory and shop experience, rather than theory. All graduates of certificate programs show they are competent in oral communication and the use of computers by satisfactorily completing at least one course in which

oral communications and basic computer skills are covered. Graduates of these programs receive Certificates of Completion.

### Institutional Awards

TSTC offers technical training in defined skill sets which can be grouped in various combinations to meet specific job requirements for business or industry. These pathways are designed to allow students and/or incumbent workers to enter, exit and re-enter TSTC training while they continue to work or pursue further training.

Credits earned in these pathways may be applied to a college credit Certificate of Completion and/or Associate of Applied Science degree.

### Degree and Certificate Plans

A degree or certificate plan includes a set of courses that are required to earn a specific degree or certificate. Electives are approved by the student's faculty advisor and indicated in the plan. Course credit may be earned at TSTC, transferred from another college or university or awarded through examination.

Courses may be substituted if they are approved by the department designee. No condition guarantees that a course substitution will be approved. Each request is decided on its own merit.

Credits earned at other colleges and universities must be approved for transfer credit by the lead instructor in the student's major field of study. Credit for courses in related areas may also require approval from the lead instructor of that program area. Before consideration of transfer credit can begin, the student must be eligible to return to the last institution in which he or she was enrolled, official transcripts from all the institutions the student attended must be in the Enrollment Center and a grade of C or better must have been earned in the course(s).

A student is certified for graduation only when credit has been earned for all courses in the degree or certificate plan and any appropriate course substitution and/or transfer credit authorizations are on file. Although advisors are available to assist them, students are responsible for keeping track of their progress toward meeting program requirements. Contact the faculty advisor for assistance.

### Change of Major

A student may change majors only between terms or prior to the 11th class day of a 15-week semester, the 5th class day of a 12-week semester or the 4th class day of a 6-week session. Students who wish to change programs should meet with an advisor. Students must meet the

entry requirements if specified. Students receiving financial aid should meet with the Student Resource Center before changing their major.

To change majors, students must follow these procedures.

1. Complete the change of major form, including obtaining all required signatures. Students may be required to meet additional admission criteria for the new major.
2. Return the completed form to the Student Resource Center for processing.

### Additional Degrees and Certificates

Credit hours may be applied toward more than one degree and/or certificate, as long as those hours meet requirements of those credentials.

### Repeat Courses

It is the policy of Texas State Technical College to allow students to repeat a course only when the initial grade earned was below a grade of "A."

When a student repeats a course in which the grade earned was below a "A" the first grade earned will not be calculated into the cumulative grade point average. The last grade issued (regardless of whether higher or lower than the first grade) will be calculated into the cumulative grade point average. See SOS ES 4.15.

## Graduation and Commencement

### Graduation Requirements

Within five years of initial enrollment in credit courses at Texas State Technical College, a student may graduate with a degree or certificate according to the catalog requirements in effect at the time of first enrollment at Texas State Technical College provided the degree, certificate, the program and requisite courses are still being offered.

If a student fails to complete within five years all requirements of the catalog in effect at the time of initial enrollment, the student will be required to graduate under a catalog not older than five years.

Exception to this requirement may be approved in extenuating circumstances by the campus academic officer. To obtain a diploma, a student must satisfy all financial obligations to the College.

## Graduation Application

Students must complete the online Graduation Application Form prior to the posted deadline. Failure to apply by the posted deadlines may result in a late graduation application fee. The Registrar or designee will certify that the student has met graduation criteria and requirements.

Students are notified of their eligibility for graduation when they achieve the following requirements for the applicable degree or certificate.

1. All TSI-related requirements are met if applicable.
2. All required course work is satisfactorily completed.
3. At least 25 percent of the total required credit hours are earned at the college granting the degree or certificate.
4. The student's cumulative grade point average is 2.0 or higher.
5. The student's grades in all major courses are C or better.
6. All transfer credits accepted by TSTC and applied to the degree or certificate are approved by the faculty of the program.
7. The student has no pending disciplinary issues as defined in the college student handbook. Settlement of all financial obligations to TSTC must be made prior to graduation. If any business is pending with TSTC by commencement, TSTC withholds the diploma until clearance approval.

## Commencement Ceremonies

Candidates for graduation are encouraged to participate in commencement ceremonies held at the end of each semester. Participation is voluntary; however, only those students who participate in the commencement ceremony receive diploma covers, as well as honor cords and medals if eligible. Students not planning to attend the commencement ceremony may pick up their diplomas at the Student Resource Center upon notice of graduation eligibility. Diplomas not picked up will be mailed to the graduate at the address in the College's administrative database.

Candidates for graduation participating in the commencement ceremony must wear only TSTC designated regalia (cap, gown, tassel) which may be purchased at the TSTC Bookstore.

Students requiring accommodations for commencement will need to make arrangements with Disability Services in a timely manner.

## Graduation Honors

Students receiving associate degrees or certificates of

completion who earn Cumulative GPAs of 4.0 receive TSTC Board of Regents' Honors.

Students receiving associate degrees or certificates of completion who earn Cumulative GPAs of 3.50 to 3.99 receive Honors.

## Graduate Guarantee

If an associate degree or certificate of completion graduate or marketable skills achievement award completer is judged by his/her employer to be lacking in technical job skills identified as exit competencies for the program under which the student graduated or completed, TSTC will provide the graduate with up to 12 tuition-free semester credit hours of additional skill training, in accordance with the following.

1. The graduate must have earned the degree, certificate or award in a technical or occupational program or pathway published in the TSTC catalog.
2. The graduate must have earned at least 75 percent of the total credits of the associate degree or certificate of completion at TSTC, and must have completed the degree or certificate of completion within five years of initial enrollment.
3. The graduate must be employed full-time in an area directly related to the program concentration, as certified by the campus academic officer.
4. The employment must have commenced within 12 months of graduation or completion.
5. The Graduate Guarantee process must be initiated in writing to the TSTC Office of the Chancellor and CEO, by either the graduate or the employer.
6. The employer must certify in writing that the employee is lacking entry-level skills identified by TSTC as program exit competencies and must specify the areas of deficiency within 90 days of the graduate's initial employment.
7. The employer, the graduate, career counselor and appropriate chairperson will develop a written educational plan for retraining.
8. Retraining will be limited to 12 semester credit hours related to the identified skill deficiency and to those classes regularly scheduled during the period covered by the retraining plan.
9. All retraining must be completed within one calendar year from the time the educational plan is agreed upon.
10. The graduate and/or employer will be responsible for the cost of books, insurance, uniforms, fees and/or other course-related expenses.
11. The guarantee does not imply that the graduate will pass any licensing or qualifying examination for a particular career.

A student's sole remedy against TSTC and its employees for skill deficiencies shall be limited to 12 semester credit hours of tuition-free education, as described above.

## The TSTC Foundation Alumni Network

The TSTC Foundation Alumni Network serves and supports Texas State Technical College, its students and alumni. Through the Alumni Network, students and alumni can read updates about other alumni, connect with them, share success stories and more.

Being a part of the Alumni Network comes at no cost and gives students and alumni access to the following benefits:

- The TSTC Foundation Alumni Job Network.
- Career resources and networking opportunities.
- The hireTSTC job portal, including job alerts, interview tips and invitations to upcoming job fairs.
- Monthly e-newsletter.
- Invitations to special events.
- Volunteer opportunities.
- The alumni savings program featuring discounts on hotels, amusement parks, sporting events and more.

More than 67,000 alumni are already part of The TSTC Foundation Alumni Network. Sign up today by visiting our website at [tstc.edu/alumni](http://tstc.edu/alumni), or contact us at [tstc.alumni@tstc.edu](mailto:tstc.alumni@tstc.edu) or 254-867-3958.

## Curriculum

### Developmental Education Courses

TSTC provides courses and learning activities for students who need assistance with basic academic skills. Developmental education courses are not counted as credit toward graduation. However, they are used along with the credit courses for determining course load and satisfactory academic progress for financial aid.

### General Education Courses

Under this accreditation, Associate of Applied Science degree programs must contain a basic core of general education courses. This basic core must contain a minimum of 15 semester credit hours and include at least one course from each of the following areas: humanities/fine arts, social/behavioral sciences and natural sciences/mathematics. Specific core course requirements are

included within each associate degree plan.

Associate of Science degrees must contain the full Academic Core.

General education courses are an integral part of a student's preparation for work, and along with the technical course requirements, form the basis of a student's program of study at TSTC.

### Purpose

The general education courses are basic to the purpose of TSTC and represent a commitment to offer breadth as well as depth to a student's technical education program of study. TSTC's inventory of general education courses offers a comprehensive general education program because:

1. Employers are interested in hiring technically trained graduates, who with an appropriate grounding in science (natural, behavioral and social), mathematics and technology, can communicate effectively, work well with others, make appropriate decisions, adapt to change, and in many cases, continue their education.
2. The general education courses provide foundational and thorough education that do not focus on specific skills, techniques, procedures, or vocations.
3. General education courses assist in developing the ability to think critically, use logical reasoning in analyzing and solving problems, and appreciate cultural diversity.
4. Many of our students need assistance in becoming prepared for college studies in the technical and the general education components of their studies.
5. The general education courses are required to meet accreditation standards of regional, state and occupational groups requiring a broad range of knowledge when obtaining a degree or certification, and they fulfill the requirements agreed upon in articulation agreements with other colleges and universities.

However, not all courses are part of the General Education Academic Core and may not satisfy the core requirements for graduation. General Education and Transfer General education is an integral part of the College's programs of instruction. The general education departments strive toward delivering courses that impart common knowledge, intellectual concepts and attitudes every person should have for career and life roles in addition to providing some of the basic competencies needed by technical students. Through establishing a common group of required and elective courses, through cognitive experiences, and through the demonstration of skills, TSTC seeks to provide students in:

- Degree programs with instruction in knowledge and skills designed to impart common knowledge, intellectual concepts and appropriate attitudes for work and life. These courses assist the student's participation in social, technological and cultural environments. These courses contain college-level content in areas of communication, social and behavioral sciences, humanities, business, mathematics and natural science. Their common course numbers are recognized by the Texas Higher Education Coordinating Board in the Lower Division Academic Course Guide Manual and meet all requirements for transfer to other accredited colleges and universities.
- Certificate programs with instruction in knowledge, skills and attitudes appropriate for and that support the technical programs of study. These college-level courses are in the areas of communications, human relations, mathematics, natural science, social and behavioral sciences, business and humanities. These related studies courses in the certificate programs have numbers from the Workforce Education Course Manual as recognized by the Texas Higher Education Coordinating Board and typically are transferable for courses in occupational programs of study at other colleges or as part of an articulation agreement with another college. Additional courses come from the Lower Division Academic Course Guide Manual and meet all requirements for transfer to other accredited colleges and universities.
- Developmental education provides courses that strengthen academic skills, teach positive study habits, develop basic skill competencies necessary for major program success and allow students to explore career options of the College's major programs. These courses seek to make students better prepared to complete their studies in their major programs of study. Finally, these courses support skills that must be acquired for students to successfully meet the requirements of TSTC's Texas Success Initiative.

### Humanities Electives

Credits for Humanities and Fine Arts Electives are based upon the definition of the Shared Vision Task Force of the National Council for Occupational Education and the Community College Humanities Association:

"Humanities in Associate Degree occupational programs are studies which expand the student's awareness of the human condition and appreciation of human needs, values and achievements. The Humanities assist in developing insights, capacities and well-reasoned convictions essential for a fulfilled public and private life, as well as a success in a career. They include studies of literature and all languages, history, philosophy and religion, and the history and appreciation of the fine arts. They do not include the development of basic communication skills in any human language."

Course	Course Title	Prerequisite(s)
Humanities/Fine Arts		
ARTS 1301	Art Appreciation	
ARTS 1303	Art History I	
ARTS 1304	Art History II	
ENGL 2321	British Literature	ENGL 1301
ENGL 2322	British Literature I	ENGL 1301
ENGL 2326	American Literature	ENGL 1301
ENGL 2327	American Literature I	ENGL 1301
ENGL 2331	World Literature	ENGL 1301
ENGL 2332	World Literature I	ENGL 1301
ENGL 2341	Forms of Literature	ENGL 1301
ENGL 2342	Forms of Literature I	ENGL 1301
HUMA 1301	Introduction to Humanities	
HUMA 2323	World Cultures	
MUSI 1306	Music Appreciation	
PHIL 1304	Introduction to World Religions	
PHIL 2306	Introduction to Ethics	

**Math/Natural Sciences:**

BIOL 1306	Biology for Science Majors I	
BIOL 1307	Biology for Science Majors II	
BIOL 1308	Biology for Non-Science Majors I	
BIOL 1309	Biology for Non-Science Majors II	
BIOL 2301	Anatomy & Physiology I	
BIOL 2302	Anatomy & Physiology II	BIOL 2301
BIOL 2421	Microbiology for Science Majors	BIOL 2301
CHEM 1305	Introductory Chemistry I	
CHEM 1311	General Chemistry I	MATH 1314 or required placement scores
CHEM 1312	General Chemistry II	CHEM 1311
CHEM 2323	Organic Chemistry I	CHEM 1312
MATH 1314	College Algebra	
MATH 1316	Plane Trigonometry	
MATH 1332	Contemporary Mathematics (Quantitative Reasoning)	
MATH 1350	Fundamentals of Mathematics I	MATH 1314
MATH 1351	Fundamentals of Mathematics II	MATH 1314
MATH 2312	Precalculus Math	MATH 1314 or MATH 1316
MATH 1342	Elementary Statistical Methods	
MATH 2413	Calculus I	MATH 2312
PHYS 1415	Physical Science I	
PHYS 1417	Physical Science II	
PHYS 2425	University Physics I	MATH 2413
PHYS 2426	University Physics II	PHYS 2425

**Behavioral/Social Sciences:**

ECON 2301	Principles of Macroeconomics
ECON 2302	Principles of Microeconomics
GOVT 2305	Federal Government
GOVT 2306	Texas Government
HIST 1301	United States History I
HIST 1302	United States History II
PSYC 2301	General Psychology
PSYC 2314	Lifespan Growth & Development
SOCI 1301	Introductory Sociology
SOCI 1306	Social Problems

*Note: Transfer courses not listed may be evaluated on an individual basis. Not all courses may be offered on all TSTC campus locations. Additional General Academic courses to be determined by program advisor and campus location.*

**More Information**

Anyone have questions regarding transfer credit should contact the Enrollment Center and questions regarding special partnerships should contact the Curriculum Office.

Additional courses may be accepted on transfer from other colleges.

Questions on the transferability of outside courses to meet the Humanities/Fine Arts elective, the Natural Sciences/Mathematics or Behavioral/Social Science elective requirements should be addressed to the chairs of the respective academic departments.

## Academic Core Courses

The following is a list General Education courses offered by TSTC General Education Academic Core departments which vary by campus.

TSTC in Harlingen offers the Texas Core Curriculum, a core package of transferable academic courses defined by the Texas Higher Education Coordinating Board that will transfer to any college or university in the state of Texas. More information on course content and lecture and lab hours is included in the Course Descriptions section of this catalog.

Selection of courses within each category must be based upon the student's demonstrated abilities, desired major and intentions for graduation. Not all courses are offered every semester. Students must attain a "C" or better in all academic Core courses to be eligible for certificate of completion. Additional hours may be taken beyond the minimum shown. The categories and minimum hours for the basic core are as follows:

### Course Title

#### Communication (6 hours)

ENGL 1301	Composition
ENGL 1302	Composition II

#### Mathematics (3 hours)

MATH 1314	College Algebra
MATH 1316	Plane Trigonometry
MATH 1332	Contemporary Mathematics

#### Life and Physical Sciences (6 hours)

BIOL 1306	Biology for Science Majors I (Lecture)
BIOL 1307	Biology for Science Majors II (Lecture)
BIOL 1308	Biology for Non-Science Majors I (Lecture)
BIOL 1309	Biology for Non-Science Majors II (Lecture)
BIOL 2301	Anatomy & Physiology I (Lecture)

BIOL 2302	Anatomy & Physiology II (Lecture)
CHEM 1311	General Chemistry I (Lecture)
CHEM 1312	General Chemistry II (Lecture)
PHYS 1301	College Physics I (Lecture)
PHYS 1302	College Physics II (Lecture)
PHYS 1315	Physical Science I (Lecture)
PHYS 1317	Physical Science II (Lecture)

#### Language, Philosophy & Culture (3 hours)

ENGL 2321	British Literature
ENGL 2331	World Literature
ENGL 2326	American Literature
PHIL 1304	Introduction to World Religions

#### Creative Arts (3 hours)

ARTS 1301	Art Appreciation
MUSI 1306	Music Appreciation

#### American History (6 hours)

HIST 1301	U.S. History I (to 1877)
HIST 1302	U.S. History II (since 1877)

#### Government/Political Science (6 hours)

GOVT 2305	Federal Government
GOVT 2306	Texas Government

#### Social/Behavioral Science (3 hours)

ECON 2301	Principles of Macroeconomics
ECON 2302	Principles of Microeconomics
PSYC 2301	General Psychology
PSYC 2314	Life Span Growth & Development
SOCI 1301	Introductory Sociology

#### Component Area Option A (minimum of 3 hours)

BIOL 1106	Biology for Science Majors I (lab)
BIOL 1107	Biology for Science Majors II (lab)
BIOL 1108	Biology for Non-Science Majors I (lab)
BIOL 1109	Biology for Non-Science Majors II (lab)
BIOL 2101	Anatomy/Physiology I (lab)
BIOL 2102	Anatomy/Physiology II (lab)
CHEM 1111	General Chemistry I (lab)
CHEM 1112	General Chemistry II (lab)
ENGL 2321	British Literature
ENGL 2326	American Literature
ENGL 2331	World Literature
PHYS 1101	College Physics I (lab)
PHYS 1102	College Physics II (lab)
PHYS 1115	Physical Science I (lab)
PHYS 1117	Physical Science II (lab)

PSYC 2314      Life Span Growth & Development

**Component Area Option B (3 hours)**

- SPCH 1311      Introduction to Speech Communication
- SPCH 1315      Public Speaking
- SPCH 1318      Interpersonal Communication
- SPCH 1321      Business & Professional Communication

**Other Academic Transfer Courses**

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

Course	Title
ACCT 2301	Principles of Accounting I - Financial
ACCT 2302	Principles of Accounting II - Managerial (ACCT 2301*)
ANTH 2346	General Anthropology
BCIS 1305	Business Computer Applications
BUSI 1301	Business Principles
BUSI 2301	Business Law
COSC 1301	Microcomputer Applications
ENGL 2314	Technical & Business Writing
ENGL 2307	Creative Writing
ENGR 1201	Introduction to Engineering
ENGR 1204	Engineering Graphics
ENGR 2301	Engineering Mechanics I - Statics
ENGR 2304	Programming for Engineers
ENGR 2305	Circuit Analysis I
ENGR 2105	Circuit Analysis I Lab
ENVR 1401	Environmental Science I
GEOG 1303	World Regional Geography
HIST 2321	World Civilizations
MATH 2305	Discrete Mathematics (MATH 2413*)
TECA 1354	Child Growth and Development

(\*Course Prerequisites)

**Prerequisites and Corequisites**

Students must complete designated prerequisite courses before registering for certain courses and must take corequisite courses during the same term. Such requirements are indicated as part of the course descriptions. Students are responsible for taking courses in sequence and at the proper level. Failure to adhere to prerequisite and corequisite requirements may result in

the students being withdrawn from the courses.

**Credit Award for Assessments and Training**

Credit awards for Texas State Technical College (TSTC) courses based on credit by examination or nontraditional training and experiences is available to students who plan to enroll at TSTC and to currently enrolled students. TSTC awards credit for various examinations published by the College Board, including the College Board Advanced Placement Program (AP) and the College-Level Examination Program Subject Exams (CLEP-S). TSTC also awards credit for training received while in the United States Armed Services, for credit earned through the International Baccalaureate Diploma Program and, for credit earned in high school dual enrollment courses. Students may also be eligible to receive credit awards for other types of training and experience subject to review and approval by the appropriate college official.

**General Rules and Regulations**

The total number of semester credit hours awarded for Credit Awards may vary depending upon the student's program of study; however, the total credit awarded (including transfer credits) cannot exceed 75 percent of the total credits required for the student's declared program of study. At least 25 percent of the total credits in a TSTC student's certificate or AAS degree plan must be earned through regular SCH instruction at a TSTC college or at another institution of higher education in partnership with TSTC.

To receive Credit Awards, students must be enrolled at TSTC and have completed a minimum of six semester credit hours of nondevelopmental coursework at TSTC. New students who request and meet the standards for Credit Awards will be granted credit pending completion of six nondevelopmental semester credit hours at TSTC.

While credit may be awarded by TSTC for external exams and training, this credit may not satisfy requirements for a specific program of study. Students should check with program advisors to determine if accepted Credit Awards will meet program requirements.

A grade of CR (credit) will be assigned for any course in which Credit Awards are received. This grade is not computed in the grade point average, and the credit does not count toward calculation of student load for a term.

The student is responsible for obtaining documentation of external exam scores and/or other training and submitting it to the Enrollment Center at a TSTC College. Scores for the College Examination Program (CLEP) and Advanced Placement (AP) examinations, as well as other Credit Award documentation, should be received prior to

enrollment for use in course advisement and placement.

Students must complete the appropriate Credit Award Request form with appropriate documentation to initiate the Credit Award process. Payment of any fees associated with Credit Award program must be received before credit can be posted to the student's transcript.

### CLEP Subject Area Exams

The College-Level Examination Program (CLEP) is a series of tests offered by the College Board. The tests cover a variety of subject areas including business, science and mathematics, history and social sciences, foreign languages, and composition and literature. CLEP exams are offered on most college and university campuses. The CLEP exam is currently offered at our Harlingen, Waco and Abilene locations. Eligible DANTES funded test takers attempting a CLEP test for the first time will have their exam fee funded by DANTES and the administration fee waived. Please contact the Testing Center for more information.

TSTC awards course credit for the following CLEP Subject Exams providing the minimum score has been obtained on the specific test. TSTC does not award credit for the CLEP General Exams. CLEP Scores are valid for 10 years from the test date. Subjects approved by TSTC may be found on the Admissions website.

### Advanced Placement

Advanced Placement (AP) exams are offered by the College Board to students who complete AP courses while enrolled in high school. The exams cover a variety of subject areas including business, science and mathematics, history and social sciences, foreign languages, and composition and literature. Approved exams may be found on the TSTC Admissions website.

### Credit for Military Training

Students who received training while in the United States Armed Services may receive credit for that training, provided appropriate documentation is provided and the training is equivalent to a course or courses offered

by TSTC. Credit awarded for military training is based on the recommendations from the American Council on Education (ACE) in its Guide to the Evaluation of Educational Experiences in the Armed Services and must be approved by the appropriate TSTC department chair for the specific subject area.

The Military Registries provide quality assurance and policy guidance to the U.S. Army, Navy and Marine Corps in support of the Army/ACE Registry Transcript Service (AARTS) and the Sailor/Marine/ACE Registry Transcript (SMART). More than 2,300 colleges and universities recognize these ACE-endorsed transcripts as official documentation of military experiences and accurate records of applicable ACE credit recommendations.

Students who wish to receive credit for military training should obtain a transcript from the Defense Activity for Non-Traditional Education Support (DANTES). This agency maintains the educational records of the service members who have completed DANTES Subject Standardized Tests (DSSTs), CLEP examinations, USAFI (United States Armed forces Institute) and a high school equivalency exam.

Before July 1, 1974, the results of courses and tests taken under the auspices of USAFI (United States Armed Forces Institute, disestablished 1974) are also available from the DANTES Program:

DANTES Program  
The Chauncey Group International  
P. O. Box 6605  
Princeton, NJ 08541-6605

### International Baccalaureate Diploma Program (IBD)

Students who have received an International Baccalaureate Diploma (IB) may receive TSTC course credit for the following exams with scores of four or higher on either standard level (SL) or higher level (HL) examinations. Students who have taken IB exams but do not have an IB diploma may receive credit for scores of five or higher on higher level (HL) examinations only.

IBD Exam Name	Minimum Score with IB Diploma	Minimum Score without IB Diploma	Credits	TSTC Course(s)
Biology (HL)	4	5	8	BIOL 1406, 1407
Biology (SL)	4	n/a	8	BIOL 1406, 1407
Chemistry (HL)	4	5	8	CHEM 1411, 1412
Chemistry (SL)	4	n/a	8	CHEM 1411, 1412
Economics (HL)	4	5	6	ECON 2301, 2302
Economics (SL)	4	n/a	6	ECON 2301, 2302
English Language A1 (HL)	4	5	6	ENGL 2322, 2323
English Language A1 (SL)	4	n/a	6	ENGL 2322, 2323
Mathematics (HL)	4	n/a	6	MATH 1314, 1316
Math Methods (SL)	4	n/a	3	MATH 1314
Math Studies (SL)	4	n/a	3	MATH 1324 or 1325
Philosophy (HL)	4	5	3	PHIL 1301
Philosophy (SL)	4	n/a	3	PHIL 1301
Physics (HL)	4	5	4	PHYS 1401
Physics (SL)	4	n/a	4	PHYS 1401
Psychology (HL)	4	5	3	PSYC 2301
Psychology (SL)	4	n/a	3	PSYC 2301

### Credit Award for Continuing Education and Experiential Learning

Students who have successfully completed continuing education (CE) courses offered by a TSTC college are eligible to apply for semester credit hour technical course credit. CE coursework must be demonstrated to be substantially the same as the equivalent semester credit coursework. Students taking a CE training that leads to an industry recognized credential, licensure, or certification can utilize the credential to request college credit. Students must sign and submit a Continuing Education Hours Course Equivalency Evaluation form to the instructional administrator of the appropriate technical program in which the course(s) are managed.

Experiential learning allows students to receive college credit for equivalent educational experiences acquired through earlier schooling situations, work/on-the-job training or life experiences. Upon approval of the appropriate department chair and/or department chair, a student may develop a petition for a course or courses offered by TSTC to gain college-level credit. Petitions are reviewed by the appropriate department chair and/or division director and submitted to the campus academic officer for approval.

Students with applicable skills and knowledge may also receive credit for technical courses in which proficiency is determined by examination. These challenge exams are designed and written by qualified faculty and may be administered in the technical department or testing center.

More specific information on credit award for continuing education units and experiential learning may be obtained from the Workforce Training and Continuing Education Office. Testing center and/or evaluation fees may apply.

### Audited Courses

Students may audit courses with permission from the course instructors. Students auditing courses must adhere to the same class requirements as those students taking the courses for credit. Audited courses are not considered when determining a credit hour load, and a grade of "AUD" is shown on the students' grade reports. Students may take courses for credit after auditing them but may not receive credit by examination or use audited courses as course substitutions in degree or certificate plans. Students who audit courses will be charged state and designated tuition and an audit fee specified in the Tuition and Fees section of this catalog. Contact the Enrollment Center for more information.

### Cooperative Education

Most certificate and degree programs offer students opportunities to participate in cooperative training with industry for at least one semester. Students in cooperative experiences earn up to 12 credit hours working off-campus at jobs related to their fields of study. This phase of training is a cooperative effort between the student, industry and TSTC to provide valuable work experience. Cooperative education is competitive, enabling some qualified students to earn income to help support their

education. Students who are interested in participating in cooperative experiences should discuss the opportunities with their department chairpersons.

### Individualized Instruction

Some programs of study offer individualized instruction. In these programs, students may complete course requirements without attending regularly scheduled lectures or laboratory sessions. Students enroll in an agreed-upon number of contact hours and are awarded credit when course objectives are met. This allows students to advance through program requirements at a comfortable speed, which may be slower or faster than the more traditional approach. Students should talk with their lead instructors about the availability of individual instruction in their programs of study.

### Dual Enrollment Courses

The TSTC Dual Enrollment program provides an opportunity for high school students to earn college and high school credit simultaneously while still in high school. High School Partners must have an official Partnership with TSTC and meet applicable eligibility requirements for students to enroll in courses. Contact the Dual Enrollment Office for more information.

### Day, Evening and Weekend Courses

The majority of college credit courses are taught on weekdays during the day, with selected courses offered during the evenings and/or on weekends. Workforce training and continuing education courses are scheduled throughout these time periods. Contact the Workforce Training Office for details.

### Online Learning

TSTC offers instruction through a variety of electronic media. Online classes offer students the opportunity to complete college courses using personal computers and Internet connections. Each TSTC program that offers online learning courses has requirements specific to that department.

Online learning courses are not self-paced. However, depending on the nature of the instructional method, students may complete course requirements as their schedules permit. Students enrolled in online learning courses must meet deadlines, take scheduled tests, etc., but typically they do not have to be in classrooms at specific times, except when required by the instructors. Those students who take online learning courses complete assignments and communicate with instructors via the

established Learning Management System (LMS). Some online learning courses require proctored testing. A proctored exam is taken on campus or at an approved proctored testing center and monitored by a Proctor. Please follow testing instructions indicated on the course syllabus and for proctored testing requirements and arrangements.

Prior to beginning a fully online course, students must complete the Student Online Learning Orientation (SOLO) course to demonstrate ability to succeed in TSTC's online learning environment. Contact the Office of Online Learning for information on the SOLO course. Failure to complete the SOLO course may result in the student being withdrawn from the online course(s).

In most cases, tuition for online learning courses is the same as on campus courses. The Tuition and Fees section of this catalog provides more details. Students planning to take only online learning courses should notify the TSTC Enrollment Center so that the appropriate information and advising can be arranged.

## Enrollment

### Registration

Returning students and new students who have completed admission procedures should contact their local TSTC campus for specific registration information. Students must register for classes prior to the beginning of the semester of attendance. Students may register for classes during the scheduled registration period. Students must clear all holds or restrictions prior to registration.

Note: Attending class or doing course work for a course in which they are not properly registered (which includes paying fees) is prohibited and grounds for dismissal from the College.

### Schedule Changes

The published [academic calendar](#) outlines the dates during which schedule changes may occur. Students may add, drop courses, or change sections before classes begin by contacting their program advisor or Success Coach. After classes begin, all students may change their schedules by obtaining course schedule change forms available from the Student Resource Center, instructors and/or lead instructors. The completed forms must be submitted to the Student Resource Center by the deadline published in the TSTC college [academic calendar](#). Changes are effective only when this process has been completed.

## Drops and Withdrawals

Students may drop courses or withdraw from the College by completing a course schedule change form, obtaining the appropriate approval signatures, and submitting the form to the Student Resource Center. The effective date is the date the course schedule change form is received by the Student Resource Center. Deadlines for course drops and withdrawals from the College are published in the TSTC college [academic calendar](#).

See "Refunds for Changes in Enrollment" in the Refunds section for more information.

Courses that are dropped prior to the official census dates do not appear on the student's transcript. After the official census dates, students who drop courses or withdraw from the institution receive marks of "W" (Withdrawal), provided the forms are received on or before the published deadline. Students who withdraw from the institution may be asked to meet with a college representative.

Under section 51.907 of the Texas Education Code, "an institution of higher education may not permit a student to drop more than six courses, including any course a transfer student has dropped at another institution of higher education." This statute was enacted by the state of Texas in spring 2007 and applies to students who enroll in a public institution of higher education as first-time freshmen in Fall 2007 or later. Any course that a student drops is counted toward the six-course limit if "the student was able to drop the course without receiving a grade or incurring an academic penalty; the student's transcript indicates or will indicate that the student was enrolled in the course; and the student is not dropping the course in order to withdraw from the institution." Some exemptions for good cause could allow a student to drop a course without having it counted toward this limit, but it is the responsibility of the student to establish that good cause.

Students who have completed at least 75 percent of the term and who are called to active military service may request an excused absence rather than withdrawal from their courses. Students who request leave based on military service will be given grades of "IM" in all courses and will have two years from the end of the term to complete course work. Grades of "IM" awarded to students called to military service will be changed to "W" grades if the required course work is not completed by the end of the two-year period.

Students who withdraw from the College must ensure that all library books and laboratory equipment are returned and all financial obligations are settled before they leave.

## Student Participation

Students are responsible for their own class attendance and participation. Faculty members may establish requirements for student participation in specific learning activities both in and out of the classroom and may consider these requirements when determining final grades.

## Student Absence and Religious Holy Days

Under Texas Education Code 51.911, a student who is absent from class for the observance of a religious Holy Day is allowed to take an examination or complete an assignment scheduled for that day within a reasonable time period, as established by the faculty member. The student must give written notice by submitting a completed absence request form to the instructor within the first 10 days of the term. Contact the Student Resource Center for more information.

## Transfer of Credit

The transfer of course credit from TSTC to other Texas colleges and universities is facilitated by the Texas Higher Education Coordinating Board (THECB) Academic Course Guide Manual and Workforce Education Course Manual. In general, students may submit an official TSTC transcript to another college or university for consideration of transfer credits. Acceptance of credits is at the discretion of the receiving institution. Contact the appropriate department chair for more information.

## Resolution of Transfer Disputes for Lower Division Courses

The following procedures specified in Texas Higher Education Coordinating Board Rules (Chapter 4, Subchapter B, Section 4.27) shall be followed by institutions of higher education in the resolution of credit 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, the receiving institution shall give written notice to the student and to the sending institution that transfer of the course credit is denied, and shall include in that notice the reasons for denying the credit. Attached to the written notice shall be the procedures for resolution of transfer disputes for lower-division courses as outlined in this section, accompanied by clear instructions outlining the procedure for

- appealing the decision to the Commissioner.
2. A student who receives notice as specified in paragraph 1 of this subsection may dispute the denial of credit by contacting a designated official at either the sending or the receiving institution.
3. The two institutions and the student shall attempt to resolve the transfer of the course credit in accordance with Board rules and guidelines.
4. If the transfer dispute is not resolved to the satisfaction of the student or the sending institution within 45 days after the date the student received written notice of denial, the sending institution may notify the Commissioner in writing of the request for transfer dispute resolution, and the institution that denies the course credit for transfer shall notify the Commissioner in writing of its denial and the reasons for the denial.

The Commissioner 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 institutions.

Each institution of higher education shall publish in its course catalogs the procedures specified in all subsections of Section 4.27 in the Texas Higher Education Coordinating Board rules.

The Board shall collect data on the types of transfer disputes that are reported and the disposition of each case that is considered by the Commissioner or the Commissioner's designee.

If a receiving institution has cause to believe that a course being presented by a student for transfer from another school is not of an acceptable level of quality, it should first contact the sending institution and attempt to resolve the problem. In the event that the two institutions are unable to come to a satisfactory resolution, the receiving institution may notify the Commissioner, who may investigate the course. If its quality is found to be unacceptable, the Board may discontinue funding for the course.

## Academic Integrity

TSTC expects all students to engage in scholastic pursuits in a manner that is beyond reproach. Students are expected to maintain complete honesty and integrity. Any student found guilty of academic dishonesty is subject to disciplinary action. Academic dishonesty includes, but is not limited to, cheating on academic work, plagiarism and collusion.

- *Cheating* on academic work includes, but is not limited to:
  - copying from another student's test paper or other academic work;
  - using materials during a test that have not been authorized by the individual giving the test;
  - collaborating with another student, without authorization, during an examination or in preparing academic work;
  - bribing another person to obtain an unadministered test;
  - knowingly using, buying, selling, stealing, transporting, or soliciting, in whole or in part, the contents of an unadministered test; and
  - substituting for another student, or permitting another student to substitute for oneself, to take a test or prepare other academic work.
- *Plagiarism* means claiming another's work as one's own without acknowledging its origin and doing so for credit.
- *Collusion* means unauthorized collaboration with another person in preparing a written work offered for credit.

For more information and procedures regarding a violation of Academic Dishonesty, see the Code of Student Conduct, Section J. Violations of Academic Integrity.

## Workforce Training and Continuing Education

TSTC offers a range of workforce training and continuing education courses (CE) programs. Credit in these courses and programs is awarded as "Continuing Education Units" (CEUs), or Clock Hours, upon successful completion of course and program objectives. Courses may be offered to the general public or in a customized format for businesses and industries to meet specific workplace needs. Typical curriculum offerings include:

- Training and retraining programs that respond to requests or needs of business or other institutions and agencies
- Specialized customized training courses, workshops, seminars and clinics.
- Training for industrial start-up or expansion programs.
- Workforce Training to train for new careers and to provide skill updates, professional development, personal improvement and recreation.

## Admission and Registration

The majority of CE courses and programs have no admission requirements; however, all participants are required to complete a registration form with basic demographic information. Some specialized programs may require demonstrated skills, competencies and some program requirements prior to enrollment.

## Tuition and Fees

CE courses vary in price depending on the length of the course, special equipment or labs used in training and other factors. Customized CE training courses may be billed directly to the sponsoring business or industry or employers may reimburse students for approved CE training courses.

Unless the course or student is sponsored by a business or agency, payment of all tuition and fees is required three business days prior to the first class meeting.

## Class Records and Certificates for CEU Programs

Students completing CE courses receive one CEU for every 10 hours of participation in a workforce training and continuing education course or program.

Grades of Satisfactory "S" or Unsatisfactory "U" are typically awarded in CE classes. Other types of grades may be awarded depending on the requirements of the course sponsor. Students who successfully complete CE courses receive a certificate certifying the number of CEUs awarded.

CEUs earned in classes taught by TSTC may be converted to semester hour (college) credit that is applicable to a certificate of completion or associate degree. Refer to the Credit Award for Assessments and Training section of this catalog for more information.

## Class Records and Certificates for Clock Hour programs

Students completing CE courses receive one hour for every hour of participation in a workforce training and continuing education course or program.

The following is the grading scale used for clock hour programs:

Grading Scale:

90 – 100	A
80 – 89	B
75 – 79	C
70 – 74	D
0 - 69	F

Hours earned in classes taught by TSTC may be converted to semester hour (college) credit that is applicable to a certificate of completion or associate degree. Refer to the Credit Award for Assessments and Training section of this catalog for more information.

## SAP Policy

Students must complete each course with at least a C or better to successfully complete the program. Students who do not have acceptable classroom attendance or fail to meet learning objectives with a potential to not meet the grade requirement will be removed from the program.

## SAP Standing

Good Standing = C or better.

Probation = less than C

Suspension = 3rd attempt of same course not meeting C or better

## Refund Policy for CE Courses

Students who drop a CE course prior to the first class day will receive an 100 percent refund. Students who drop on or after the first class day will receive a 0 percent refund and will be responsible for all course fees.

## CE Attendance Policy

CE students must typically hold a minimum of 90 percent attendance per course in order to maintain satisfactory progress unless a program's external governing agency requires differently. Such modification will be listed in the course syllabus.

## Customized Training for Business and Industry

TSTC has a representative to respond to requests from businesses and other institutions or agencies to develop and offer specialized training for employees. Training may be provided at the College or at the sponsor's site of choice. For more information on specialized business and industry training contact the Workforce Training and Continuing Education Office.

# College Readiness and Advancement

College Readiness & Advancement offers students the educational support needed to make the successful transition into college. College Readiness and Advancement offers programs such as Upward Bound, High Equivalency Program and a variety of summer programs. All students who participate in any of the College Readiness and Advancement programs are expected to adhere to the rules and regulations set forth in this Catalog/Handbook. Additionally, specific programs may have additional policies and rules that participants must also abide by.

## Student Services

### Student Housing

The College considers housing an added service for its students.

Occupancy in student apartments is assigned on a first-come, first-served basis.

The facilities are conveniently located at the College within walking distance of classroom buildings, laboratories and recreation facilities.

#### Housing Reservations

Because facilities are limited, the prospective student should complete a campus housing application as soon as possible, at least one semester in advance of the expected enrollment date. The application must be completed and returned with deposit, the Release of Background Information Form and the nonrefundable application fee. The deposit can be made by cash, credit card, check or money order payable to Texas State Technical College.

The deposit must be paid before the student is placed on the housing assignment 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.

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

#### Housing Assignments

Returning students have priority in housing assignments. However, they must reserve their own residence for

future occupancy according to the policy of their assigned facility.

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

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

Students must remain in the facilities assigned to them unless permission for change is obtained from the Housing Office. Moving without permission may result in eviction from campus housing. The Housing Office reserves the right to move students to another space 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. "Tenant may move into their assigned facilities in accordance with said facilities regulations." Move-in policy varies according to facility as well as campus. The tenant will terminate the lease and must vacate the residence if he/she ceases to be a TSTC student.

When the student properly vacates his or her assigned residence, 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 semester.

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 the cost of any rent or fees due.

All rental rates are based on the TSTC approved fee schedule.

#### Housing Accommodations for Students with Disabilities

Students with disabilities that require accommodations for TSTC Housing must contact Disability Services in a timely manner for further guidance on the accommodations process. Students with disabilities are encouraged to self-disclose when initiating the housing application process. Please see the Disabilities section to find contact information for these services.

# Disabilities

## Disability Services

Disability Services reflects the College's commitment to meeting the special needs of individual students. This office coordinates with community assistance programs and serves as a resource for qualified students with disabilities. Students requiring reasonable accommodations or services will need to self-identify with Disability Services in a timely manner. All requests for accommodations must be accompanied by professional assessments/reports from individuals qualified to diagnose the disability disclosed. Disability Services collaborates with both college personnel and students with disabilities to develop appropriate accommodations that ensure equal access and promote accessible programs and facilities at TSTC. Disability Services is the liaison for the Texas Workforce Solutions.

The goal of the Americans with Disabilities Act of 1990 (ADA) is to guarantee that individuals with disabilities are given equality of opportunity, full participation, independent living, and economic self-sufficiency. In post-secondary education, individuals with disabilities are provided reasonable and appropriate accommodations to ensure equality in obtaining an education. Those accommodations are based on the need of the individual. Such reasonable accommodations do not include: personal services, lack of preparation, or lack of time management skills.

## Service and Emotional Support Animals on Campus Grounds

Texas State Technical College (TSTC) allows individuals to bring animals on College property in accordance with federal laws and in other situations subject to the rules outlined below. At the same time, TSTC recognizes the health and safety risks potentially created by unrestrained animals on campus.

### Definitions

**Emotional Support Animal:** An animal that is necessary to afford a person with a disability an equal opportunity to use and enjoy a dwelling when there is an identifiable relationship or nexus between the person's disability and the assistance the animal provides.

**Service Animal:** A dog individually trained to do work or perform tasks for a person with a disability. Examples of such work or tasks include guiding people who are blind, alerting people who are deaf, pulling a wheelchair, and alerting/protecting a person who is having a seizure. The provision of emotional support, well-being, comfort, or companionship does not constitute work or tasks for the

purposes of defining a service animal.

A dog undergoing training by an approved trainer who is an agent of an organization generally recognized by agencies involved in the rehabilitation of persons who are disabled as reputable and competent to provide training for assistance animals, and/or their handlers.

### Procedures

Animals brought on campus must be under the complete control of the owner at all times and present no hazard to people or property. The wearing of a muzzle by a dog shall not be regarded as control by its owner. Dogs and cats brought to campus must have a valid license as evidence of current rabies vaccinations and fulfill all local requirements applicable to animals or they may be subject to removal from campus. In all cases, the owner of the animal is responsible for the animal's behavior.

In general, TSTC will not ask about the nature or extent of a person's disability but may make two inquiries to determine whether an animal qualifies as a service animal. TSTC may ask:

- If the animal is required because of a disability and;
- What work or task the animal has been trained to perform.

Animals on campus grounds must be secured to a leash, cord, chain or similar direct physical control of a maximum length of six (6) feet, the other end of which is restrained by a person. If this constraint interferes with a service animal's work or if the individual's disability prevents using these devices the individual must maintain control of the animal through voice, signal, or other effective controls. The physical constraint of the animal does not apply to service or support animals kept within an individual's College housing assignment.

Animals must not be tethered to a stationary fixture or tree left unattended. TSTC may take reasonable efforts to remove an animal confined in a vehicle when there appears to be imminent danger to the animal due to temperature conditions or inadequate ventilation. TSTC is not liable for any associated repair/damage costs to the vehicle for this action and the animal's owner assumes full responsibility.

TSTC retains the right to take action to remove any animal from College premises if the safety of others, destruction of property, or disturbance warrants such removal. The removal of any animal and any necessary cleaning, repairs, and/or pest control will be done at the expense of the owner. The owner may also be subject to disciplinary action and this action may also extend to cases involving service and support animals. TSTC may not permit service animals when the animal poses a substantial and direct threat to health or safety or when the presence of the

animal constitutes a fundamental alteration to the nature of the program or service. TSTC will make those determinations on a case-by-case basis.

Some people may have allergic reactions to animals that are substantial enough to qualify as disabilities.

TSTC will consider the needs of both persons in meeting its obligations to reasonably accommodate all disabilities and to resolve the problem as efficiently and expeditiously as possible. Students requesting allergy accommodations should contact Disability Services office.

### **Service Animals**

The College permits service animals into campus buildings where other animals would typically not be permitted. This practice follows Titles II and III of the American with Disabilities Act Amendment Act (ADAAA).

The service animal must have been trained as a service animal in the work or tasks directly related to the person's disability. Individuals are permitted to bring his or her service animal in all areas of the campus including any place of public accommodation. Individuals living in College housing will be permitted to have no more than one service or support animal. A student must seek registration for a service animal to reside in College housing space. Information and procedures to gain approval may be found at the Housing office for your campus.

Service animals in training on campus are allowed if the individual is an approved trainer who is an agent of an organization recognized as reputable and competent to provide such training and the individual submits proof to the Disability Service Office that he or she is approved trainer as required in Texas Human Resources Code Dec. 121.003. Individuals participating in an internship off campus must refer to the entity's ADA designee for any inquiries regarding the requirements for service animals in training to enter their entity.

### **Emotional Support Animals**

In accordance to the Fair Housing Act of 1988 and the U.S. Department of Housing and Urban Development, the College permits an individual with a disability to keep an emotional support animal within his or her College housing and on College grounds. The emotional support animal is not allowed to accompany the student into other public buildings on campus, including the dining area.

### **Criteria for emotional support animals in Housing**

Typically, an emotional support animal is prescribed to an individual with a disability by a health care or mental health professional and is an integral part of a person's treatment process. Individuals living in College housing

will be permitted to have no more than one service or support animal. The Disability Office manages requests related to a support animal within the student's College housing assignment. Requests made by faculty or staff residing in housing should be directed to the Housing Department and Human Resource Office.

### **Animal Etiquette**

To the extent possible, the handler should ensure that the animal does not: sniff people, restaurant tables or the personal belongings of others. Also, the animal should not display any behaviors or noises that are disruptive to others, unless part of the service being provided the handler. Furthermore, it is the handler's responsibility that the animal does not block an aisle or passageway for fire egress. Violation of this on behalf of an individual, may result in disciplinary action.

### **Public Etiquette Toward Service or Emotional Support Animals**

It is okay to ask someone if she/he would like assistance if there seems to be confusion, however, faculty, staff, students, visitors and members of the general public should avoid the following: petting a service animal, as it may distract them from the task at hand, feeding the service animal, deliberately startling a service animal, and separating or attempting to separate a handler from his/her service animal. Individuals found in violation of this, may be subject to disciplinary action.

### **Waste Cleanup Rule**

Cleaning up after the animal is the sole responsibility of the handler. In the event that the handler is not physically able to clean up after the animal, it is then the responsibility of the handler to make arrangements to have someone capable of cleaning up after the animal. The person cleaning up after the animal should abide by the following guidelines: Always carry equipment sufficient to clean up the animal's feces whenever the animal is on campus. Properly dispose of waste and/or litter in appropriate containers. TSTC may impose a financial responsibility on the Handler in the event TSTC staff is needed to cleanup.

### **Exemptions**

Animals involved in authorized research, K-9 animal (police dog), animals being temporarily held by Environmental Health and Safety, fish contained in aquariums, or animals used for performance on premises or involved in College sponsored activity.

### **Appeal Process**

An individual may appeal the decision to the College ADA Coordinator which can be found in Statewide Operating Standard ES 3.26.

## Grievance Procedure for ADA-Related Complaints

Primary responsibility for ensuring compliance with the ADAAA rests with the College's ADA/504 Coordinator.

The release of and access to all student-related educational records will be in compliance with the Family Educational Rights and Privacy Act (FERPA).

TSTC students who believe that they have been denied equal access in the form of appropriate accommodations, modifications, auxiliary aids, effective communication, or experienced discriminatory harassment as described in Section 504 of the Rehabilitation Act of 1973 or The Americans with Disabilities Act of 1990 have a right to file a grievance. The TSTC procedure for the filing of student-related grievances alleging violations of the ADAAA and Section 504 is as follows:

1. The student will submit a written complaint to Disability Services/Designee as soon as the complainant becomes aware of the alleged violation, but no later than 10 days after the alleged action occurred. The time for submitting a written complaint can be waived for good cause as determined by Disability Services/Designee. The following should be included in the written complaint: the name and address of the person filing it, a brief description of the alleged violation, and any documents supporting the complaint. Disability Services/Designee will assist the student in the interactive process in an effort to clarify and resolve the issue. At times, Disability Services/Designee may consult with the TSTC ADA/504 Coordinator, staff, and/or other pertinent parties to assist in the resolution process.
2. Disability Services/Designee will review the complaint and provide the student a response within 10 working days of receipt of the complaint. An extension of time can be made, not to exceed 15 working days, if the student is notified by Disability Services/Designee.
3. If the student is not satisfied with the decision of Disability Services/Designee, a written complaint may be submitted to the TSTC ADA/504 Coordinator within 10 working days of the decision provided in step 1. The time for submitting a written complaint can be waived for good cause as determined by the TSTC ADA/504 Coordinator. The complaint must include the name and address of the person filing it and a description of the reason for the complaint. Upon receiving the complaint, the TSTC ADA/504 Coordinator will review it within 10 working days. An extension of time can be made, not to exceed 15 working days, if the student is notified by the TSTC ADA/504 Coordinator. At times, the TSTC ADA/504 Coordinator will consult with Disability Services and/or the TSTC ADA/504 Compliance Committee to

assist in the resolution process. The TSTC ADA/504 Coordinator's decision will be final at the college level. If a complaint is not resolved at the college level, the student may choose to file a complaint with the Federal Office of Civil Rights. The Office of Civil Rights will receive complaints and investigate as deemed appropriate.

In accordance with the requirements of Section 504 of the Rehabilitation Act of 1973 and Title II of the Americans with Disabilities Act of 1990 (ADA), Texas State Technical College will not discriminate against qualified individuals with disabilities on the basis of disability in its services, programs or activities. Texas State Technical College does not discriminate on the basis of disability in its hiring or employment practices and complies with all regulations promulgated by the U.S. Department of Education, the U.S. Department of Justice and the U.S. Equal Employment Opportunity Commission.

### Disability Services

Abilene, Breckenridge, Brownwood, and Sweetwater  
Misty Walden  
300 Homer K. Taylor Drive  
Sweetwater, TX 79556  
325-236-8292

Fort Bend County  
Schauna Boynton  
26702 SW Freeway  
Rosenberg, TX  
832-223-0612

Harlingen  
Corina De La Rosa  
Student Services Bldg. EK, Room 216  
1902 N. Loop 499  
Harlingen, Texas 78550  
956-364-4520  
TTY: 956-364-4526

North Texas  
Amanda Warren  
119 N. Lowrance Rd.  
Red Oak, Texas 75154  
972-617-4724

Marshall  
Annette Ellis  
Administration Building, Room 150  
2650 E. End Blvd South  
Marshall, TX 75671  
903-923-3313

Williamson County  
 Mary Daniel  
 East Williamson County Higher Education Center  
 Hutto, Texas  
 512-759-5907

Waco  
 Marilyn Harren  
 Student Services Center  
 3801 Campus Drive  
 Waco, Texas 76705  
 254-867-3600

ADA/504 Coordinator  
 Liz Silva  
 Executive Director of Student Support Services  
 Student Services Bldg. EK  
 1902 N. Loop 499  
 Harlingen, Texas 78550  
 956-364-4520

## Student Support Services

Student Support Services coordinates awareness events that promote emotional and physical wellness, disability awareness and sensitivity, sexual assault and domestic violence education, and drug and alcohol prevention for the TSTC community. Each campus offers services unique to their specific student population. Please see the applicable college personnel on your campus to be directed to resources provided at your location.

Student Support Services also provides referrals for child care and at some locations assists with child care stipends. Services are contingent upon meeting the qualifications for each respective campus, available funding and child care servicing agency. Lending Library, which may include tools and books is available to those students meeting Perkins guidelines. Books and tools are loaned on a semester basis. Transportation stipends are available at certain locations and are based on available funds.

### Humana Student Assistance Program

TSTC has partnered with Humana to provide a Student Assistance Program (SAP) and Work-Life Services for TSTC students and their families. Services are available 24 hours, seven days a week. Both the SAP and Work-Life Services are convenient, confidential, and provided at no cost to students and the members of their household.

### Counseling Services

The SAP offers short-term counseling, up to five visits per concern per year, to help students and members of their household manage everyday concerns that may impact school and home life.

### Work-Life Services

Work-Life Services offers extensive assistance, information, and support to help students achieve a better balance between school, life, and family.

SAP Counseling, Work-Life, Legal and Financial services could include the following:

Relationship Issues: Marital/partner relationships, loneliness, intimacy problems, dealing with conflict, physical and/or emotional abuse.

Child Care: Adoption, pregnancy and infertility, child care and back-up care, infant and toddler options, special-needs care, summer care services.

Emotional Well-Being: Depression, stress and anxiety, addictions, eating and weight-related issues, grief and loss

Adult Care: Finding services and care for older adults, housing options, caregiving issues, helping from a distance, adjusting to retirement

Campus & Workplace Challenges: Working successfully with others, communicating with your professor or boss, career development, avoiding burnout, dealing with stress

Everyday Issues: Consumer education, moving and relocation, home ownership, recreational activities, pet care

Legal & Financial Concerns: Retirement planning, Budget and credit management, resolving legal problems, coping with financial issues, avoiding fraud

Education: K-12, college and universities, financing, GED/vocational, tutors and test prep

Health & Wellness: Stress reduction, exercise and preventative health, nutrition, mind/body balance, women's and children's health

Community Resources: Red Cross, houses of worship, community centers, hospitals, domestic violence shelters

The Humana SAP also facilitates follow ups and provides legal and financial services. In addition, the Humana website provides informative articles, podcasts, tips sheets, and videos. They even have a comprehensive section in Spanish.

If additional assistance or services are needed, you will receive referrals that consider your preferences, medical plan, and financial circumstances. For more information on medical resources, referrals, Humana SAP, please contact your local Student Support Services Office/TSTC Humana Liaison.

For more information, please call 1-855-270-3349 (TTY: 711), visit the Humana online site at [Humana.com/sap](https://Humana.com/sap) (username and password: [tstcstudents](https://portal.tstc.edu)) or visit the TSTC Student Portal at [portal.tstc.edu](https://portal.tstc.edu).

### Humana Contact Manager

Liz Silva  
Executive Director of Student Support Services  
Student Services Bldg. EK  
1902 N. Loop 499  
Harlingen, Texas 78550  
956-364-4520

### Humana Liaisons

Fort Bend County  
Schauna Boynton  
26706 SW Freeway  
Rosenberg TX 77471  
832-945-1398  
[schauna.boynton@tstc.edu](mailto:schauna.boynton@tstc.edu)

Harlingen  
Patty Flores  
Student Services Building EK Room 210  
1902 N. Loop 499  
Harlingen, Texas 78550  
956-364-4520  
[patty.flores@tstc.edu](mailto:patty.flores@tstc.edu)

Marshall  
Annette Ellis  
Administration Bldg. Room 150  
2650 East End Blvd. South  
Marshall, TX 75672  
903-923-3313  
[annette.ellis@tstc.edu](mailto:annette.ellis@tstc.edu)

North Texas  
Amanda Warren  
Director of Student Services  
119 N. Lowrance Rd  
Red Oak, TX 75154  
972-617-4724  
[amanda.warren@tstc.edu](mailto:amanda.warren@tstc.edu)

Waco  
Curt Pursilver  
Student Service Center  
Waco, TX  
8601 College Dr.  
254-867-3066

Williamson County  
Mary Daniel  
1600 Innovation Bldg. (CR 108)  
Hutto, Texas 78634  
512-759-5631  
[mary.daniel@tstc.edu](mailto:mary.daniel@tstc.edu)

West Texas (Abilene, Breckenridge, Brownwood and Sweetwater)  
Abilene  
Susan Hash  
Administrative Assistant  
650 E. Highway 80  
Abilene, TX 79601  
325-734-3641  
[susan.hash@tstc.edu](mailto:susan.hash@tstc.edu)

Breckenridge  
Lisa Langford  
Success Coach  
307 N. Breckenridge  
Breckenridge, TX 76424  
254-559-7731  
[lisa.langford@tstc.edu](mailto:lisa.langford@tstc.edu)

Brownwood  
Nicole Whitley  
Success Coach  
305 Booker Street  
Brownwood, TX 76801  
325-641-5955  
[nicole.whitley@tstc.edu](mailto:nicole.whitley@tstc.edu)

Sweetwater  
300 Homer K. Taylor Dr.  
Sweetwater, TX 79556  
Patricia Carpio  
Administrative Assistant  
325-235-7441  
[patricia.carpio@tstc.edu](mailto:patricia.carpio@tstc.edu)

Misty Walden  
Director of Support Services  
325-236-8292  
[misty.walden@tstc.edu](mailto:misty.walden@tstc.edu)

### Drug and Alcohol Policy Statement

Texas State Technical College is a drug and alcohol free college and workplace. The unlawful manufacture, distribution, purchase, dispensation, possession or use of illegal drugs or alcohol by students and employees on college property, or as a part of any college-sponsored activity, is prohibited. Students violating any provision of the drug and alcohol policies are subject to disciplinary sanctions ranging from probation, suspension or expulsion to referral for prosecution. Employees who violate any

provision of the drug and alcohol policies may be subject to disciplinary action up to termination.

## Alcohol and Drug Use

Drug and alcohol use, misuse, and abuse are complex behaviors with many outcomes at both the cultural and the individual levels. Awareness of the dangerous effects of drug/alcohol use is imperative for an individual's well-being or survival. Negative consequences of drug/alcohol may be exhibited through: physical dependence (the body's learned requirement of a drug for functioning) or psychological dependence (the experiencing of persistent craving for the drug and/or a feeling the drug/alcohol is a requirement for functioning).

Abuse of any drug/alcohol whether licit or illicit may result in marginal to marked, temporary to permanent physical and/or psychological damage, even death. Since many of the illicit drugs are manufactured and sold illegally, their content varies and may contain especially harmful ingredients or amounts. Regardless of the types of drug/alcohol utilized, a perceived need for the continued use is likely to ensue, resulting in dependence. Dependence on drugs and/or alcohol alters the user's psychological functioning. The acquisition of drugs and alcohol becomes the primary focus of the drug dependent individual and often results in reduced job performance and jeopardized family and other interpersonal relationships. Criminal behavior is frequently the means for financing a drug habit. Behavior patterns often include violence and assault as the individual becomes increasingly drug/alcohol dependent. Social and psychological alienation and medical problems increase as the abuser becomes entrapped in drug/alcohol dependence. For more information on drug/alcohol counseling and referrals, please contact the Student Support Services Office/TSTC Humana Liaison at your campus.

### Possible Alcohol Sanctions

- Probation.
- On-line Alcohol Edu Course.
- Community Service.
- Workshops.
- Removal from Campus Living Facilities.
- Suspension.
- Expulsion.

### Possible Drug Sanctions

- Probation.
- Online Drug Edu Course.
- Community Service.
- Removal from Campus Living Facilities.
- Suspension.
- Expulsion.

\*The Conduct Officer has authority to sanction as seen fit for any violation of the Student Code of Conduct involving Drugs and Alcohol. For more information on the disciplinary process, go to the Code of Student Conduct.

The Family Educational Rights and Privacy Act (FERPA), permits colleges and universities to inform the parents/guardians of students less than 21 years of age when their son/daughter has been found in violation of university alcohol and drug regulations.

Students exhibiting signs of excessive drug/alcohol consumption will be transported via Emergency Medical Services (EMS) at the student's expense for medical attention. Refusal to cooperate with EMS personnel may result in arrest (by local/campus police) in order to ensure the student's health and safety and/or a conduct complaint for disorderly conduct and/or failure to comply.

### Health Risks Associated with Alcohol Abuse

- Increased risk of liver cancer.
- Increased risk of cirrhosis of the liver.
- Increased risk of heart disease.
- Adverse reactions when combined with many medications, including over-the-counter drugs.
- Overdose resulting in respiratory failure.
- Impaired concentration.
- Impaired coordination.
- Risk of permanent nerve damage from long-term abuse.

### Health Risks Associated with Marijuana Use

- Lowered sperm counts in men.
- Decreased testosterone levels in men.
- Increased testosterone levels in women.
- Enhanced cancer risk.
- Impaired short-term memory.
- Psychological dependence.

### Health Risks Associated with the Use of Cocaine and Crack

- Addiction.
- Heart attack.
- Stroke.
- Respiratory failure.
- Brain seizures.
- Hepatitis or AIDS through sharing needles.
- Decreased ability to combat infections.
- Violent, erratic or paranoid behavior.
- Anxiety, depression.
- Cocaine psychosis.

### Health Risks Associated with the Use of Hallucinogens

- Sleeplessness and tremors.
- Convulsions.
- Heart and lung failure.

- Depression, anxiety and paranoia.
- Violent behavior.

For more information visit [www.tstc.edu/student\\_life/awareness](http://www.tstc.edu/student_life/awareness).

## Students with Contagious Diseases

TSTC recognizes that contagious diseases are a serious threat to public health. We are committed to encouraging an informed and educated response to issues concerning infectious diseases. Individuals with HIV or hepatitis will not be discriminated against in admission to academic programs, health care or access to facilities. Students with HIV or hepatitis may attend any function or event if they are physically capable and do not pose health risks to others. All information regarding the medical status of students is confidential.

## Bacterial Meningitis Notification

State law requires that information regarding bacterial meningitis be provided to college students. Bacterial meningitis is a serious, potentially deadly disease that can progress extremely fast. It is an inflammation of the membranes that surround the brain and spinal cord and can infect the blood. The disease can be treated, but those who survive may develop severe health problems and severe disabilities.

Vaccinations that are effective against 70 percent of the most common types of bacterial meningitis are available and required by those living in close quarters and by college students ages 21 or younger (22 and older are exempt). For more information, please contact your health care provider, the Texas Department of State Health Services or Centers for Disease Control and Prevention.

## Student Life and Engagement

The Office of Student Life & Engagement provides activities that enhance students' educational and personal development. Activities are open to all full-time, part-time, evening and online students, and TSTC encourages students to take advantage of activities offered by the College.

## Student Activities

It is the goal of the Student Activities staff to provide a comprehensive and varied program of social and recreational experiences regardless of the skill or ability of the individual. Through clubs and organizations, recreation, volunteerism, leadership development, and special events, the goal is to strive to meet the needs and interests of all students.

When able this staff promotes various recreational and sports opportunities, not only to enhance physical activity, but to cultivate lifelong sport and leadership skills to develop habits of fair play and foster personal health. Student Activities supports and provides services that integrate students, employees and the public through clubs, organizations, recreation, sports and other college sponsored events.

## Clubs and Organizations

Students are encouraged to join or organize clubs with the guidance of a TSTC faculty or staff advisor. Some student clubs allow dual enrollment students to join. The list of club and organizations are located at the Office of Student Life & Engagement. Clubs can be related to professional careers or nonacademic interests. The advisor is responsible for students' actions in any activity sponsored by the organization or club. All clubs or professional organizations must be granted approval through the Office of Student Life & Engagement.

All officially recognized student organizations sponsoring social functions, fundraisers, and/or volunteer activities, either on or off campus, MUST coordinate and register such functions with the Office of Student Life & Engagement. Student organizations and their advisors (sponsors) are responsible for compliance with TSTC policies and regulations and all applicable state and federal laws.

TSTC is judged by the actions of its students, on and off campus. Therefore, students will be responsible to College authorities for any questionable acts, regardless of where they are committed.

Students interested in starting a new club or organization are encouraged to visit with the Office of Student Life & Engagement for further guidance.

## Student Clubs/Organization Risk Management Policy

In accordance with Texas Education Code §51.9361, the advisor and president, or other designated officer, of each registered student organization shall attend a risk management program each academic year.

By law the training will include, but not be limited to, the following topics:

- Possession and use of alcoholic beverages and illegal drugs.
- Hazing.
- Sexual abuse and harassment.
- Fire and other safety issues.

- Student travel guidelines.
- Behavior at parties and other events held by the club or organization .
- Adoption of risk management policy.
- Issues regarding persons with disabilities.

Failure to comply may result in the student organization's recognition being withdrawn, withheld or denied by the administration or Board of Regents of the College.

## Free Speech

As an institution of higher learning, TSTC is dedicated to maintaining a college community that values and encourages the free exchange of ideas. The college will honor the rights of free speech, expression, petition, and peaceful assembly as set forth in the U.S. Constitution.

Contact the Office of Student Life & Engagement about specific guidelines.

## Student Leadership

### Student Government Association

The Student Government Association (SGA) is comprised of representatives elected annually by the student body. The SGA serves as the voice for students for many activities and policies. SGA members serve on committees and gain the opportunity to meet people seeking improvements for TSTC's academic, social and cultural environment. The SGA discusses and studies issues pursuing the best interests of students that do not conflict with TSTC policies and regulations. The SGA may also represent TSTC at annual regional and national student government conventions. SGA encourages all students to assist in the continual improvement of TSTC and ask that they do so by completing the various student surveys administered throughout the academic year. Student feedback is reviewed and considered toward excellence at TSTC. Your voice is important. Participation is open to any student enrolled at TSTC.

### Student Leadership Academy

Students have the opportunity to earn TSTC Certified Student Leader status by participating in a variety of leadership workshops offered through the Student Leadership Academy series in the Fall and Spring Semesters. TSTC also provides leadership development opportunities at an annual Student Leadership Conference.

## SkillsUSA

As a TSTC student you can participate in lot of intramural sports like football, softball and volleyball, but SkillsUSA is our technical "athletic program." Our best compete at both the state and national competitions every year. We have a history of creating champions. For over 50 years, TSTC has more medal winners than all two- and four-year colleges in Texas combined.

Do you have a competitive spirit? Do you strive to be the best at what you do? Ask an admissions advisor about which programs we have SkillsUSA teams for so you can join the team today!

## Student Travel

Official student travel is defined as travel involving one or more students traveling to an event or activity that is organized or sponsored by TSTC and is located more than 25 miles from the College or during which the students will be staying overnight. International travel is not permitted at TSTC. The faculty/staff member or student club advisor is responsible for ensuring that all TSTC rules and regulations are followed. During any trips requiring an overnight stay, the advisor(s) and students must stay in the same hotel facility/complex. Students and advisor(s) must travel together during any off campus trips. The faculty/staff member or club advisor must complete and submit an official student travel packet at least ten days prior to the sponsored trip. Forms are available at the Office of Student Life & Engagement and on the Student Life & Engagement Portal page.

Students in good standing, with at least a 2.0 GPA, and without holds on their account, are eligible to travel. Each student will be evaluated on a case by case basis.

Students driving personal vehicles and/or transporting others in their personal vehicles on college trips must sign waivers and show proof of current liability insurance. Students will be required to ride in state vehicles or contracted transportation on long trips offered by the Student Activities Department. Those students traveling in a state vehicle sign a field trip release form. Students are not permitted to drive state vehicles. For full policy, please reference Statewide Operating Standard ES 3.22

## Intramurals

At participating campuses, the intramural program provides faculty, staff, and students indoor and outdoor sports and facilities throughout the year.

Competitive tournaments and leagues are organized and conducted in a variety of sports and games by the

Intramural Department. Activities are offered in women's, men's and recreational divisions for students and staff of all skill levels. Programs offered are based upon the availability of resources and facilities. Examples of intramural sports include, but are not limited to, basketball, flag football, golf, volleyball, softball, tennis, soccer and racquetball. Students are encouraged to bring new ideas to the Student Activities/Intramural Department.

Only students, staff, faculty and dual enrollment students are allowed to utilize the facilities. Proper TSTC identification is required. The Wellness and Sports Center/Rec Center is not responsible for any injuries at TSTC outdoor or indoor facilities or in Intramural Sports. It is your responsibility to obtain insurance and to be responsible regarding your personal safety. Please make sure you are physically fit to participate in any strenuous activity and get a doctor's check-up annually. By voluntarily utilizing fitness equipment and facilities, and/or participating in Intramural sports, you are releasing TSTC of any responsibility in case of injury. TSTC is not responsible for injuries or lost/stolen items

## Special Events

Sponsored special events, an integral part of the Student Activities Department, are supervised by TSTC employees. All such special events are considered TSTC functions; therefore, all Texas State Technical College policies and rules apply. Academic and personal conduct standards also apply. Events include, but are not limited to, dances, banquets, cookouts, parties, holiday functions, special student days, Student Appreciation Day, guest speakers and community related events.

### Student Life & Engagement

Statewide  
956-364-4302

Abilene, Breckenridge, Brownwood and Sweetwater  
325-235-7396

Waco and Williamson County  
254-867-3441

Fort Bend County  
346-239-3422

Harlingen  
956-364-4370

Marshall  
903-923-3647

North Texas  
972-617-4724

## Student Identification Cards

All new college credit students are required to obtain TSTC identification (ID) cards when they register; ID cards are optional for students in workforce training and continuing education programs.

Students should carry these cards at all times. They must be presented for various purposes, such as cashing checks, paying fees, checking out library books, or as requested by authorized officials. Misuse of ID cards may result in disciplinary action.

## Learning Resource Centers

The Learning Resource Centers (LRC) provide print and nonprint resources and services for students and faculty, including access to the Internet. Materials are selected to serve the curricular, vocational and recreational needs of the college community. A trained staff of professional librarians is available to aid students in locating and using these materials.

Students must clear their library or LRC records before the end of each semester.

Official transcripts are not released and registration for subsequent semesters may not be allowed until all library obligations are resolved.

## College Bookstore

The TSTC Bookstore maintains a wide selection of books and supplies required for classes and labs. The bookstore also offers an assortment of educational materials, health care products, envelopes and snacks, as well as an array of college sportswear, hats and novelties.

## Food Service

TSTC provides Food Service at various campuses. Please contact your local Food Service for hours of operation and cost.

## Campus Security

The Student Right-to-Know, Campus Security Act, and Crime Awareness and Campus Security Act (Public Law 101-52), the Higher Education Technical Amendments of 1991 (Public Law 102-26), the Higher Education

Amendments of 1992 (Public Law 102-325), the Higher Education Amendments of 1998 and Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act (Public Law 105-244), the Victims of Trafficking and Violence Protection Act of 2000 and Campus Sex Crimes Prevention Act (Public Law 106-386), and Higher Education Opportunity Act (Public Law 110-315) require institutions of higher education to prepare, publish and distribute to all employees, prospective students and students an Annual Security Report referred to as the Clery Report by Oct. 1 of each year.

The Clery Report contains data about specific criminal offenses that occurred on campus during the most recent calendar year and the two preceding calendar years, as well as the number of arrests for crimes occurring on campus. The Clery Report also includes geographical breakdown, expanded definition of campus, reporting of hate-crimes and a public crime log. TSTC's Annual Clery Report is available online at [tstc.edu](http://tstc.edu).

Information provided by the state of Texas concerning registered sex offenders may be obtained through the website that is maintained by the TSTC Police/Security Department. Additional information relating to state or federally mandated public information requirements is also available on that website.

## Racial Profiling Policy

It is the policy of the TSTC Police Department to police in a proactive manner and, to aggressively investigate suspected violations of law. Officers shall actively enforce state and federal laws in a responsible and professional manner, without regard to race, ethnicity or national origin. The right of all persons to be treated equally and to be free from unreasonable searches and seizures must be respected. Officers are strictly prohibited from engaging in racial profiling as defined in this policy. Racial profiling is an unacceptable patrol tactic and will not be condoned. This policy shall be applicable to all persons, whether drivers, passengers or pedestrians.

The prohibition against racial profiling does not preclude the use of race, ethnicity or national origin as factors in a detention decision. Race, ethnicity or national origin may be legitimate factors in a detention decision when used as part of an actual description of a specific suspect for whom an officer is searching. Detaining an individual and conducting an inquiry into that person's activities simply because of that individual's race, ethnicity or national origin is racial profiling.

Examples of racial profiling include but are not limited to the following:

- Citing a driver who is speeding in a stream of traffic where most other drivers are speeding because of the cited driver's race, ethnicity or national origin.
- Detaining the driver of a vehicle based on the determination that a person of that race, ethnicity or national origin is unlikely to own or possess that specific make or model of vehicle.
- Detaining an individual based upon the determination that a person of that race, ethnicity or national origin does not belong in a specific part of town or place.

The TSTC Police Department holds two basic principles based on the adoption of this definition of racial profiling:

- Police may not use racial or ethnic stereotypes as factors in selecting whom to stop and search, while police may use race in conjunction with other known factors of the suspect.
- Law enforcement officers may not use racial or ethnic stereotypes as factors in selecting whom to stop and search.

Racial profiling is not relevant as it pertains to witnesses, etc. Students who have questions or complaints about TSTC Police Department's racial profiling policies or procedures may call the local campus office:

Abilene, Breckenridge,	
Brownwood, and Sweetwater	325-235-7400
Harlingen	956-364-4220
Marshall	903-923-3313
Waco	254-867-3690

## Student Transportation

Students operating motorized vehicles on campus must register those vehicles with the TSTC Police/Security Department (excluding Waco). TSTC traffic rules and regulations and a valid parking decal will be provided to all motorists.

Students with valid parking permits who bring a different vehicle onto campus must contact the TSTC Police/Security Department to request and obtain a temporary parking permit.

## Office of Student Success

The Office of Student Success (Harlingen only) coordinates and implements student success initiatives that provide students with opportunities to achieve their academic, career, and personal goals..

Student success initiatives include:

- Scholastic Excellence and Chancellor's Honor Roll which recognize students achieving academic excellence.
- Supplemental Instruction and Tutoring Services, including MyTSTC Video Tutor Library which consists of short video tutorials developed by our Peer Tutors on subjects like Math, English, History, Biology, Chemistry and Spanish, as well as some technical subject areas.
- The HATSS Mentoring Program (Helping a TSTC Student Succeed) which provides mentoring, guidance and academic support to students on scholastic and/or financial aid suspension appeal.
- A referral system where students can be referred to campus and community resources.
- Seminars and workshops on academic policies, test-taking strategies, learning strategies, time management, GPA and Completion Rate Forecasting, and related topics.

## Supplemental Instruction & Tutoring

The Supplemental Instruction & Tutoring program at TSTC offers free tutoring and academic support services to help you achieve your academic and career goals. You can access the Tutoring Schedule, as well as MyTSTC Video Tutor Library, by visiting the Portal. For more information, please contact Norma A. Salazar at 956-364-4557.

Fort Bend County  
Learning Resource Center  
Deanna Davis  
Teaching Lab Assistant  
346-239-3408  
deanna.davis@tstc.edu

Harlingen  
Student Success Center  
Linda Barron  
Tutoring Coordinator  
956-364-4170  
epbarron@tstc.edu

North Texas  
Room# A222  
Pamela Monk  
Teaching Lab Assistant  
North Texas  
917-617-4730  
pamela.monk@tstc.edu

Waco  
Student Success Center  
Christine Kinslow  
Coordinator I  
325-867-3820  
christine.kinslow@tstc.edu

Statewide Tutoring Services  
Norma A. Salazar  
Director of Student Success  
956-364-4557  
nasalazar@tstc.edu

## Career Services

TSTC provides job placement services to all students, graduates and former students. Every effort is made to assist registered candidates as they seek full-time and part-time employment in business, industry and government. Career Services maintains information on employers, job listings and salaries. The staff schedules interview sessions, hosts special career fairs for employers and coordinates communication between industry and the College. Students are able to search for jobs, communicate directly with employers and post their resumes by registering with Career Services at [www.myinterfase.com/tstc/student](http://www.myinterfase.com/tstc/student).

Students may register as early as their first semester.

The College places a high priority on helping graduating students find employment in their chosen field of study. The philosophy of the College is that its job is not complete when the student finishes his or her studies, but continues through assistance in securing employment.

Career Services conducts follow-up studies which help to determine the effectiveness of education and training and overall student success. Career Services is committed to equal opportunity in employment and does not discriminate on the grounds of race, color, gender, national origin, age, genetic information, disability, or veteran status. Facilities and placement services are available only to employers whose practices are consistent with this policy.

Some of the companies and government agencies which routinely employ TSTC graduates include: 3M, American Airlines, Arco Chemical, Bayer Corporation, Chevron, Ethyl Corporation, Dell Computers, Eastman Kodak, Exxon Corporation, Intel, Alcoa Aluminum, Motorola, Office of the Attorney General, Oncor, Phillips Petroleum, Samsung, Sematech, Shell Oil, Southwest Research Institute, Southwestern Bell Telephone, Texas Instruments, Texas Workers Compensation, Trico Industries, Turner Collie and Braden, TwinStar, United Launch Alliance, Valley Baptist Medical Center, and Zenith Corporation.

# Student Rights and Responsibilities

As members of the college community, TSTC Students are entitled to certain rights associated with attending an institution of higher education. These rights are published and can be found online on the TSTC website and in SOS ES 3.23. Student Rights and Responsibilities.

## Statement of TSTC Student Rights and Responsibilities

1. The right to freedom from discrimination on the basis of race, color, religion, gender, age, national origin, genetic information, gender identity, sexual orientation, disability, or veteran status.
2. The right to develop one's individual potential.
3. The right to expect a quality education.
4. The right to pursue an education without undue interference.
5. The right to be free from hazing, threats, stalking, violence, and other harassing actions.
6. The right to petition the appropriate college unit or body for redress of grievances in accordance with college procedures.
7. The rights to confidentiality of official records, transcripts, disciplinary records and other educational records consistent with the Family Educational Rights & Privacy Act (FERPA) of 1974 (Buckley Amendment).
8. The right to communicate with administrators, faculty, and staff through appropriate processes.
9. The right to publish and distribute information through the appropriate forums subject to the standards of reasonable journalism and applicable regulations/statements of the U.S. Constitution, the Federal Communications Commission, and the College.
10. The right, in accordance with law and college procedures, to freedom of speech and assembly which are subject to college requirements for the maintenance and order and the protection of rights and privileges of other members in the college community.
11. The right and opportunity to participate in the formulation of procedures directly affecting students through membership or appointment to appropriate committees as determined by the College, Student Leadership, and other recognized groups within the College.
12. The right of access to college-designated facilities through college approved/recognized student organizations for business meetings, special meetings, and programs open to the public in accordance with college procedures.

## Statement of TSTC Academic Student Responsibilities

1. **Academic Freedom** - Students and all other members of the college community are guaranteed the rights freely to study, discuss, investigate, teach, conduct research and publish as appropriate to their respective roles and responsibilities. In the classroom and in conference, students have the right within the scope of the course of study to state divergent opinions, challenge ideas, and take reasoned exception to the data or the views offered.

**Responsibility** - Students and faculty share the responsibility to protect and to preserve conditions that are conducive to the learning process, including withholding judgment on matters of opinion, ensuring a fair hearing for divergent viewpoints, and observing rules of courtesy in the classroom.

2. **Academic Standards** - Students have the right to know the standards of academic performance established for each course in which they are enrolled.

**Responsibility** - Students are responsible for seeking clarification of any standard in question at the beginning of the term, for preparing assignments in advance of each class session, and for learning the content of any course of study for which they are enrolled. Rules applying to academic dishonesty must be followed, including those related to plagiarism and cheating.

3. **Academic Evaluation** - Students have the right to be evaluated solely on an academic basis, without regard to issues of diversity, opinions or conduct in matters unrelated to academic standards. Students have the right to review tests and other written works after the instructor has evaluated them and are accorded protection through the Student Grievance policy against prejudiced or capricious academic evaluation.

**Responsibility** - Students are responsible for bringing academic grievances first to the attention of the instructor who performed the evaluation in an effort to resolve the issue. If the matter cannot be settled at this level, it may be appealed in writing as outlined in the Student Grievance policy.

4. **Improper Disclosure** - Except when disclosure may be required by state or federal law, students have the right to confidentiality of information about views, beliefs and political associations which they may share privately with instructors, advisers or academic counselors. Judgment of ability and character may be provided under appropriate circumstances, normally with the knowledge and consent of the student.

**Responsibility** - Students have the responsibility to state clearly what is and what is not confidential disclosure.

5. **Disruptions** - Students have the right to pursue an education without disruption or interference and to expect enforcement of norms for acceptable classroom behavior that prevents disruption of the teaching/learning process.

**Responsibility** - Students may not disrupt class or any other college process by any means whatsoever (including sideline conversations, comments, arguments, noise of any kind or other activity which would hinder access to or utilization of academic information).

6. **Nondiscrimination** - Students have the right to learn in an environment where diversity is respected.

**Responsibility** - Students are responsible for respecting diversity and for behaving courteously to both faculty members and other students in the classroom regardless of difference in sex, color, religion, gender, national origin, genetic information, disability, or veteran status.

7. **Intellectual Property** - Students have the right to expect that presentation of material in a class will be in compliance with copyright law and that their own creative work will not be disseminated or published without their permission.

**Responsibility** - Students who receive written notification from a faculty member that the information provided in his or her course is the faculty member's intellectual property shall not distribute, use for commercial purpose, or create derivative works of the intellectual property without obtaining the express permission of the faculty member. Students shall not assume permission absent written notification from a faculty member. Students shall also respect and treat in similar manner the intellectual property of other students.

### Behavior Intervention Team (BIT)

A Behavioral Intervention Team (BIT) is a multi-disciplinary group whose purpose is meeting regularly to support its target audience (students, employees, faculty, staff) via an established protocol. The team tracks behavioral issues over time, detecting patterns, trends, and disturbances in individual or group behavior. Membership may vary from campus to campus. The committee may include other college departments or personnel who are deemed to have information pertinent to the student's individual situation.

Any member of the college community who has reason to believe that a student may endanger the health, safety, or welfare of another person may report the concern by contacting the proper authority on campus or by completing the incident form found on the website at [www.tstc.edu/student\\_life/intervention](http://www.tstc.edu/student_life/intervention).

Abilene, Breckenridge, Brownwood, and Sweetwater  
TSTC Police Department  
325-235-7400  
[www.tstc.edu/student\\_life/intervention](http://www.tstc.edu/student_life/intervention)

Harlingen  
TSTC Police Department  
956-364-4220  
[www.tstc.edu/student\\_life/intervention](http://www.tstc.edu/student_life/intervention)

Fort Bend County  
Rosenberg Police Department  
2120 4th Street  
Rosenberg, Texas 77471  
832-595-3700

Waco  
TSTC Police Department  
254-867-3690  
[www.tstc.edu/student\\_life/intervention](http://www.tstc.edu/student_life/intervention)

Marshall  
TSTC Security Department  
903-923-3313  
[www.tstc.edu/student\\_life/intervention](http://www.tstc.edu/student_life/intervention)

North Texas  
Red Oak ISD Police Department  
972-617-4607  
[www.tstc.edu/student\\_life/intervention](http://www.tstc.edu/student_life/intervention)

### Pets on Campus

Out of consideration for all members of the TSTC College community and for reasons of health and cleanliness, pets are not allowed in College buildings (e.g., office, residential, recreational, and academic buildings). Animals are not allowed on campus, except in the case of service animals and Student Support Services-approved emotional support animals in the residence facilities.

### Bicycle, Skateboard, Hoverboard (and other self-balancing boards/scooters) and Rollerblade Use Guidelines

Riding bicycles, Rollerblades, hoverboards, Swagways, Segways, IO Hawks, Skywalkers or other similar self-balancing boards/scooters, or skateboards will be allowed

as long as all safety precautions are taken. They may not be utilized in buildings or left in hallways, staircases, classrooms, lounges or where otherwise prohibited by a campus rule, regulation or signage. Use of any of these items in a manner that damages property or endangers or inconveniences vehicles or pedestrians is prohibited.

## Concealed Handguns

The unauthorized possession of any weapon in accordance with Title 10, Chapter 46.05 of the Texas Penal Code is prohibited on the physical premises of Texas State Technical College (TSTC) with the exception of a concealed handgun that a person is licensed to carry under Subchapter H, Chapter 411, Government Code in any area not properly designated as prohibited. TSTC is in compliance with SB11 of the 84th Texas Legislative session under the policies established by TSTC regarding the carrying of concealed handguns with a permit.

## Title IX

### Prohibiting Sexual Misconduct and Gender-based Discrimination

To ensure and maintain a workplace and an educational environment free of, and protected from, sexual misconduct and discrimination based on gender. Texas State Technical College (TSTC) does not tolerate and expressly prohibits sexual misconduct which includes but is not limited to: sexual harassment, sexual assault, and/or sexual exploitation, stalking, dating and domestic violence. No person on the basis of sex, will be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity.

This practice applies to all members of the TSTC organization including all employees, students, and visitors. This practice and procedure includes incidents occurring on and off campus that would cause a substantial disruption in the learning environment. The procedures also include complaints filed by visitors on TSTC property. Respondents are subject to disciplinary action including possible suspension/expulsion from the College or termination of employment.

### Pertinent Information

Title IX of the Education Amendments of 1972 protects people from discrimination based on sex in education programs or activities which receive federal financial assistance. Title IX states, "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to

discrimination under any education program or activity receiving Federal financial assistance."

## Definitions

### Complainant

Individual making the complaint of sexual misconduct or gender discrimination.

### Consent

Sexual contact cannot be given by anyone who is underage, under the influence of alcohol or drugs, or who is otherwise mentally impaired or incapable of giving knowledgeable, informed consent. Consent is only given when verbalized by yes or active, willing participation by both or all parties involved. Not hearing no or the absence of resistance is not consent. It is important to understand that consent can be withdrawn at any point, upon which actions must stop.

### Gender Discrimination

Discrimination based on sex (to be determined by Title IX Coordinator/Representative)

- A. **Bullying** –repeated and/or aggressive physical or mental behavior that is intimidating, controlling, etc.
- B. **Cyber Bullying** –repeated and/or aggressive written, graphic, or verbal harassment expressed through various communication forms (online, electronic, etc.) that is created or transmitted through any electronic/ digital device.
- C. **Hazing** – acts that are likely to cause physical, psychological, or social harm to any individual related to the admission, initiation, pledging, or any other group affiliated activity.
- D. **Stalking**- behavior that is repetitive involving calling, texting, emailing, following and/or communicating with an unwilling individual and interferes with the peace of the student and/or the student's community. It is behavior that is directed toward a specific individual that would cause a reasonable person fear for his/her own, for other's safety, and/or also causes one to experience substantial emotional distress.
- E. **Dating/Domestic Violence** – controlling, abusive, and aggressive behavior in a romantic relationship. It can happen in straight or gay relationships. It can include verbal, emotional, physical, or sexual abuse, or a combination.
- F. Discrimination based on pregnancy, childbirth, false pregnancy, termination of pregnancy, or recovery from any of these conditions. The Title IX regulation also prohibits a school from applying any rule related to a student's parental, family, or marital status that treats students differently based on their sex.

**Incapacitation**

Lacking the ability or capacity to reasonably understand the situation one is in due to lack of sleep, disability, involuntary physical constraint, or due to alcohol or other drugs.

**Preponderance of the Evidence**

The majority of the evidence would cause a reasonable person to make a conclusion.

**Respondent**

Individual against whom the complaint of sexual misconduct or gender discrimination is made.

**Retaliation**

An adverse action taken to try to keep someone from opposing a discriminatory practice. The act could be intimidation, force, or threats communicated in any form-verbal, electronic, etc.

**Sexual Misconduct:**

- A. **Sexual Harassment** – includes unwelcomed gender based verbal or physical conduct that sufficiently severe, persistent, and pervasive. It has the effect of unreasonably interfering with, and/or denying or limiting someone's ability to participate in or benefit from the College's educational program and/or activities (hostile environment). It is based on power differentials (quid pro quo - "this for that") and can be the creation of a hostile environment and/or that of retaliation.
- B. **Nonconsensual Sexual Contact (or Attempts)** – intentional sexual touching, however slight, with an object and/or body part(s) by an individual towards another individual that is without consent or done so forcefully.
- C. **Nonconsensual Intercourse (or Attempts)** – any form of sexual intercourse (vaginal, oral, or anal) regardless of how slight the penetration without consent. Also referred to as a sexual assault/rape.
- D. **Sexual Exploitation** – obtaining a personal gain for one's self or for another by taking advantage of an individual in a sexual nature. Examples include but are not limited to: invasion of sexual privacy, prostituting another person, nonconsensual video or audio taping of sexual activity, going beyond the boundaries of consent, engaging in voyeurism, knowingly transmitting a STD or HIV to another person, exposing one's genitals in nonconsensual circumstances or inducing another to expose their genitals, and sexually based stalking and/or bullying.
- E. **Acquaintance Rape** – nonconsensual sexual intercourse (rape/sexual assault) by someone known to the complainant.
- G. **Sexual Violence** – act penetrated against someone's will. Includes same sex violence/incidents.

- H. **Sexual Abuse** – sexual interaction between an adult and a minor, including sexual intercourse, touching, or contact.

**Complaints Involving Sexual Assault**

TSTC recommends that victims of sexual assault report the offense immediately to TSTC Police Department/ Security/Local Agency. Evidence of the assault should be preserved whenever possible. The victim should not bathe or shower and should not throw away or wash the clothes worn at the time of the assault. The victim will at all times be offered campus assistance in the reporting process and will, to the extent permitted by law, be offered anonymity if requested. Please see the section on "confidentiality" below to ensure complete anonymity.

**Procedures For Complaints Made By Students**

- A. Students who believe they have been subjected to sexual misconduct or gender discrimination shall report to and consult with the designated Student Title IX Coordinator/Representative.
- B. Any employee, this includes Resident/Community Assistants, who have received a report or complaint from a student relating to sexual misconduct or gender discrimination should immediately notify and refer that student to the designated Student Title IX Coordinator/Representative.
- C. The complaint may be oral or in writing. After receiving the complaint, the designated Student Title IX Coordinator/Representative will initiate an investigation. The investigator will initiate a thorough, prompt, and equitable investigation. Immediate interim actions may take place before the investigation is complete if determined necessary. This may include an interim suspension, no contact orders, or removal/change from campus housing. When issued, the involved parties will be expected to adhere to the terms of the interim actions. Violations of interim measures will not be tolerated and will be addressed immediately. Students who violate such measures will be subjected to further disciplinary action up to and including suspension and expulsion.
- D. The Investigator will follow the procedures outlined in the Code of Student Conduct which can be found online under "Disciplinary Procedures." The only exception will be the formal review process for both parties which will follow the steps outlined below under "Formal Review Process." If the respondent is found responsible of the accusations, then the proper sanctions will be imposed or mediation when it is acceptable to both parties. In incidents of sexual violence, mediation is never acceptable. If the complainant is found to have made a false accusation then disciplinary sanctions may be imposed.
- E. If the complaint involves actions of an employee

at TSTC, the Investigator shall immediately notify the designated Employee Title IX Coordinator/ Representative who will initiate the employee investigation in accordance with the steps outlined above in "Procedure for Complaints by Employees and Visitors."

- F. In all cases, a prompt, fair, and impartial investigation and resolution will be afforded.
- G. The investigator will report to the Title IX Coordinator/ Representative for reporting purposes: dates, type of misconduct, result of investigation, actions taken, if there was a Formal Review, the results, and any other pertinent information. The complete investigation documentation will be kept in the proper student's disciplinary records for the duration of the records retention length.

### Formal Review Process

A request for a formal review can be submitted in writing to the proper Title IX Coordinator/Representative by either the respondent or complainant within three business days of receipt of the notice of the outcome. The proper Title IX Coordinator will arrange a review panel of three TSTC employees who are appointed to serve. The College will convene this Review Board in a timely manner, usually within five business days, but in certain situations it may take longer. Both parties will be notified in advance of the date, time, and location of the Review and the panelists. They will be afforded an opportunity to object to any Review Member of the panel. This assures that the Title IX requirement to afford both parties a fair, impartial, and objective review is comprised of unbiased decision makers.

Continued communication with both parties will continue during this process. Within two business days prior to the date of the Review, a list of witnesses and all documentation must be submitted to the proper Title IX Coordinator. The objective of the Review Panel is to assess the findings and sanctions imposed. They may not impose more severe penalties. Because these proceedings are not designed to be a legal or judicial hearing, the Review Panel operates by basis of "Preponderance of the Evidence." The decision will be made by majority vote. If a student or employee brings an attorney for the review, they must provide sufficient notice (at least two days) for TSTC to have their own attorney present as well.

The attorney will only serve in an advisory role not be permitted to present evidence or argument before the Review Board. The presence of an attorney may cause a delay in process. All reviews will be closed.

### Retaliation

Any form of retaliation by either party will not be condoned by the College and the College will take

immediate action to rectify the situation and additional disciplinary action may occur, including separation from the College. Retaliation includes but is not limited to: intimidation, discrimination, coerce, or threats to either party

### Confidentiality

Privacy of individuals and confidentiality of information given will be maintained to the extent permitted by law throughout all phases of these procedures. TSTC strongly supports a complainant's interest in confidentiality in cases involving sexual misconduct. The College will try to honor this request except when the safety of the campus community is at risk or if it may create a nondiscriminatory environment for others. All employees, this includes Resident/Community Assistants (RA/CA's), are considered responsible employees and have the duty to report sexual misconduct to the proper Title IX Coordinator/ Representative and must report the name of the person disclosing the sexual misconduct, the alleged perpetrator, and all relevant facts regarding the incident, including date, time, and location. In cases involving minors, state mandatory laws may require disclosure. Steps to ensure the complainant's protection will be taken.

Texas State Technical College will provide written notification to students and employees of dating violence, domestic violence, sexual assault/misconduct, or stalking (whether the offense occurred on or off campus) of their rights and options.

### Complainant's Rights

- A. The right to a prompt and equitable resolution of sex discrimination complaints.
- B. The right to present his/her case or have the College present. This includes the right to adequate, reliable, and impartial investigation of complaints, the right to have an equal opportunity to present witnesses and other evidence, and the right to the same review processes, for both parties.
- C. The right to be notified of the time frame within which: (a) the College will conduct a full investigation of the complaint; (b) the parties will be notified of the outcome of the complaint; and (c) the parties may file a review, if applicable.
- D. The right to be informed of and have access to campus resources, advisory services and information on counseling and medical resources/services.
- E. The right for the complaint to be decided using a preponderance of the evidence standard (i.e., it is more likely than not that sexual harassment or violence occurred).
- F. The right to be notified, in writing, of the outcome of the complaint.

- G. Right to not have irrelevant past sexual history admitted.

### Respondent's Rights

- A. The right to a prompt and equitable resolution of all credible complaints of sexual misconduct made in good faith to college officials against the accused.
- B. The right to present his or her case. This includes the right to adequate, reliable, and impartial investigation of complaints, the right to have an equal opportunity to present witnesses and other evidence, and the right to the same review processes, for both parties.
- C. The right to be notified of the time frame within which: (a) the College will conduct a full investigation of the complaint; (b) the parties will be notified of the outcome of the complaint; and (c) the parties may file a review, if applicable.
- D. The right to be fully informed of the nature, rules and procedures of the campus conduct process and to timely written notice of all alleged violations within the complaint.
- E. The right to be informed of and have access to campus resources, advisory services and information on counseling and medical resources/services.
- F. Right to not have irrelevant past sexual history admitted in a hearing. (Unless previously known behavior is similar to the alleged in the current investigation and there is evidence of a pattern of behavior.)

### Reduce the Risk of Being Sexually Assaulted

- 1. Know your sexual intentions and limits. You have the right to say "NO" to any unwanted sexual contact. If you are uncertain of what you want, ask your partner to respect your feelings.
- 2. Communicate with your partner. Do not assume that someone will automatically know how you feel or will eventually "get the message" without you having to say anything. Just as it's okay to say "NO" to unwanted activities, it's okay - and important - to give clear consent to activities you would like to engage in. Avoid giving "mixed messages"; back up your words with a firm voice and clear body language (e.g., if you consent, give a big smile and say "YES!").
- 3. Remember that some people think that drinking, dressing provocatively, or going to your or someone else's room is saying you are willing to have sex. Be clear upfront about your limits in such situations.
- 4. Listen to your gut feelings. If you feel uncomfortable or think you might be at risk, leave the situation immediately and go to a safe place.
- 5. If you feel you are being pressured or coerced into sexual activity, you have a right to state your feelings and/or leave the situation. If you are concerned about the other person becoming angry, it is okay to make up an excuse to leave or create time to get help.

- 6. Attend large parties with friends you trust. Agree to "look out" for one another. Leave with the group, not alone. Avoid leaving with people that you don't know very well.

Texas State Technical College will provide written notification to students and employees regarding community-related services, victim advocacy, legal assistance, visa and immigration assistance, student financial aid, and other services available for victims, both within the institution and in the community. In addition, the Title IX Coordinator/Representative will provide written notification to victims about options for, and available assistance in, changing academic, living, transportation, and working situations along with information on protective measures. This information will be provided regardless of whether the victim chooses to report the crime to campus police or local law enforcement. This request can be made to the Title IX Coordinator/Representative.

To report an incident of Sexual Misconduct or Gender-based Discrimination, or to obtain a list of available local, state, or federal victim services, please contact your local Title IX representative:

### Harlingen

#### Student Title IX Representative

Janette Gomez  
Community Standards Liaison  
janette.gomez@tstc.edu  
956-364-4383

#### Employee Title IX Representative

Edda Urrea  
Executive Director, Human Resources  
edda.Urrea@tstc.edu  
956-364-4041

### Fort Bend County

#### Student Title IX Representative

Georgeann Calzada  
Director, Student Services  
georgeann.calzada@tstc.edu  
346-239-3422

#### Employee Title IX Representative

Kelly Contella  
Executive Director, Human Resources  
kelly.contella@tstc.edu  
254-867-2368

**Marshall****Student Title IX Representative**

Annette Ellis  
 Director of Student Services  
 annette.Ellis@tstc.edu  
 903-923-3313

**Employee Title IX Representative**

Kelly Contella  
 Executive Director, Human Resources  
 kelly.contella@tstc.edu  
 254-867-2368

**North Texas****Student Title IX Coordinator**

Amanda Warren  
 Director, Student Services  
 amanda.warren@tstc.edu  
 972-617-4724

**Employee Title IX Representative**

Amanda Oswalt  
 Manager, Human Resources  
 amanda.oswalt@tstc.edu  
 903-923-3221

**Waco****Student Title IX Representative**

Michelle Rachels  
 Director, Student Life  
 michelle.rachels@tstc.edu  
 254-867-3441

**Employee Title IX Representative**

Kelly Contella  
 Executive Director, Human Resources  
 kelly.Contella@tstc.edu  
 254-867-2368

**West Texas (Abilene, Breckenridge, Brownwood and Sweetwater)****Student Title IX Representative**

Griselda Sanchez  
 Community Standards Liaison  
 griselda.sanchez@tstc.edu  
 325-235-7344

**Employee Title IX Representative**

Carminia Del Toro  
 Human Resources Manager  
 carminia.deltoro@tstc.edu  
 325-236-8277

**Williamson County****Student Title IX Representative**

Mary Daniel  
 Director, Student Services  
 mary.daniel@tstc.edu  
 512-759-5631

**Employee Title IX Representative**

Kelly Contella  
 Executive Director, Human Resources  
 kelly.contella@tstc.edu  
 254-867-2369

**Student Title IX Coordinator – State Lead for TSTC**

Susan Shafer  
 susan.shafer@tstc.edu  
 3801 Campus Dr.  
 Waco, TX 76705  
 254-867-3925

**Employee Title IX Coordinator – State Lead For TSTC**

Edda Urrea  
 Executive Director, Human Resources  
 titleix.employee@tstc.edu  
 956-364-4041

**State/National Resources**

Not Alone  
[www.notalone.gov](http://www.notalone.gov)  
 Rape, Abuse, and Incest National Network-RAINN  
 1-800-656-HOPE (4763) 24 hr. hotline

**Texas Crime Victims' Clearinghouse**

800-848-4284  
[www.tdcj.state.tx.us/divisions/vs/victim\\_txcv.html](http://www.tdcj.state.tx.us/divisions/vs/victim_txcv.html)

**Crime Victims' Compensation**

800-983-9933  
[www.texasattorneygeneral.gov/cvs/crime-victims-compensation](http://www.texasattorneygeneral.gov/cvs/crime-victims-compensation)

**Crime Victim's Institute**

936-294-3100  
[www.crimevictimsinstitute.org](http://www.crimevictimsinstitute.org)

**National Hopeline Network**

800-SUICIDE (800-784-2433)  
[www.hopeline.com](http://www.hopeline.com)

**National Suicide Prevention Lifeline**

800-273-TALK (8255)  
[www.suicidepreventionlifeline.org](http://www.suicidepreventionlifeline.org)

**Veterans Crisis Line**

800-273-8255 (when connected, press 1)  
[www.veteranscrisisline.net](http://www.veteranscrisisline.net)

**National Domestic Abuse Helpline for Men and Women**

888-743-5754  
[www.dahmw.org](http://www.dahmw.org)

**National Domestic Violence Hotline**

800-799-7233  
[www.thehotline.org](http://www.thehotline.org)

**National Sexual Violence Resource Center**

877-739-3895  
[www.nsvrc.org](http://www.nsvrc.org)

**TAASA – Texas Association Against Sexual Assault**

512-747-7190  
[taasa.org](http://taasa.org)

**RAINN – Rape Abuse and Incest National Network**

800-656-4763  
[www.rainn.org](http://www.rainn.org)

**Office for Civil Rights**

800-421-3481 or 214-661-9600 (Dallas)  
[OCR.Dallas@ed.gov](mailto:OCR.Dallas@ed.gov)

**Office for Violence Against Women**

202-307-6026  
[www.ovw.usdoj.gov](http://www.ovw.usdoj.gov)

**Texas Association Against Sexual Assault**

512-474-7190  
[taasaconference.org](http://taasaconference.org)

**NOAH's Project – Victim Advocate**

800-444-3551  
[noahproject.org](http://noahproject.org)

**Women's Protective Services**

800-736-6491  
[www.wpslubbock.org](http://www.wpslubbock.org)

**Local Resources****Harlingen**

TSTC Police  
956-364-4220  
After hours: 956-873-2677  
Weekends: 956-873-2677

Student Support Services  
Student Services Bldg. EK, Room 216  
1902 N. Loop 499  
Harlingen, Texas 78550  
956-364-4520  
TTY: 956-364-4526

[http://www.tstc.edu/student\\_life/titleix](http://www.tstc.edu/student_life/titleix)

**Marshall****Campus Resources:**

Student Support Services  
South Building  
Room 437  
2650 East End Blvd. South  
Marshall, Texas 75671  
903-923-3309

TSTC Campus Security  
903-923-3351

**Area Resources:**

Good Shepherd Medical Center Marshall	903-927-6000
Marshall Rural Health Clinic	903-927-6140
Health Department	903-927-6607
HealthCare Express	903-938-4363
Access Family Health	903-927-2824
Marshall Internal Medicine	903-927-6800
CVS Pharmacy	903-935-6661
Walgreens Pharmacy	903-923-0605
Matthewson Drug Co.	903-938-6741
Sabine Valley Regional MH	903-938-7725

**North Texas**

<http://tx-elliscounty.civicplus.com/BusinessDirectoryII.aspx?lngBusinessCategoryID=22&PREVIEW=YES>

**Waco**

TSTC Police  
Support Services  
Student Services Building  
3801 Campus Drive  
Waco, TX 76705  
254-867-3690

**Fort Bend**

Student Development Office  
26702 SW Freeway  
Rosenberg, TX  
832-223-0612

**Women's Center**

<http://fortbendwomenscenter.org>  
281-342-4357  
Katy Christian Ministries  
<http://ktcm.org/assistance-programs/sexual-abuse>  
281-391-5262

**Williamson County**

Student Support Services  
 Student Services Building  
 301 Campus Drive  
 Waco, TX 76705  
 254-867-3634

**Williamson County Crisis Center**

Hotline 1-800-460-7233  
 Toll Free 1-800-460-7233  
 Business 512-255-1212

**Hope Alliance**

<http://www.hopealliancetxt.org/>  
 1-800-460-7233

**Waco**

Support Services  
 301 Campus Dr.  
 Waco, TX 76705  
 254-867-3634

**Family Abuse Center**

[www.familyabusecenter.org](http://www.familyabusecenter.org)  
 254-772-4770

**The Advocacy Center**

[www.advocacycntr.org](http://www.advocacycntr.org)  
 2323 Columbus Ave.  
 Waco, Texas 76701  
 254-752-7233 (Crisis Line)  
 254-752-9330

**Scott & White Waco Hillcrest Baptist Medical Center**

100 Hillcrest Medical Blvd.  
 Waco, Texas 76712  
 254-202-2000

**Providence Health Care Center**

342 Richland W. Circle  
 Waco, Texas 76712  
 254-751-4000

**West Texas****Abilene, Breckenridge, Brownwood and Sweetwater**

Student Support Services  
 300 Homer K. Taylor Drive  
 Sweetwater, TX 79556  
 325-236-8292

**Abilene Area Resources:**

Abilene Police Department  
 911  
[www.abilenepolice.org](http://www.abilenepolice.org)

**Abilene Regional Medical Center**

325-695-9900  
[www.abileneregional.com/Abilene-Regional-Medical-Center/home.aspx](http://www.abileneregional.com/Abilene-Regional-Medical-Center/home.aspx)

**Hendrick Medical Center**

325-670-2000  
[www.ehendrick.org/Main/Home.aspx](http://www.ehendrick.org/Main/Home.aspx)

**Regional Victim Crisis Center (24 hrs)**

325-677-7895  
<http://regionalcrime.org>

**Noah Project, Family Violence (24 hrs)**

325-676-7107  
<http://noahproject.org>

**MHMR – Betty Hardwick Center (24 hrs)**

800-758-3344  
[www.bhcmhmr.org](http://www.bhcmhmr.org)

**Love and Care Ministries**

325-670-0246  
[www.lcmin.com](http://www.lcmin.com)

**Hope Haven**

325-677-4673  
[www.abilenehopehaven.com](http://www.abilenehopehaven.com)

**The Salvation Army**

325-677-1408  
[www.salvationarmytexas.org/location/Abilene](http://www.salvationarmytexas.org/location/Abilene)

**Taylor County District Attorney – Protective Order Unit:**

325-674-1261  
[www.taylorcountytexas.org/index.aspx?nid=125](http://www.taylorcountytexas.org/index.aspx?nid=125)

**West Texas Legal Services**

325.677.8591 or 800.933.8591

**Breckenridge Area Resources:**

Breckenridge Police Department  
 911 or 254-559-2211  
<https://breckenridgetx.gov/police>

**Stephens County Sheriff's Office**

911 or 254-559-2481  
[http://www.co.stephens.tx.us/default.aspx?Stephens\\_County/Sheriff](http://www.co.stephens.tx.us/default.aspx?Stephens_County/Sheriff)

**Stephens Memorial Hospital**

254-559-2241  
<http://www.smhtx.com/getpage.php?name=index>

Crime Victim Assistance Center  
 254-559-4000 (Breckenridge)  
 254-629-3223 (Eastland)  
 888-686-3222 (24 hr. hotline)  
[www.chamberofcommerce.com/breckenridge-tx/7682554-crime-victim-assistance-center](http://www.chamberofcommerce.com/breckenridge-tx/7682554-crime-victim-assistance-center)

MHMR – Betty Hardwick Center (24 hrs)  
 800.758.3344  
 1612 West Walker Street  
 Breckenridge, TX 76424

#### **Brownwood Area Resources:**

The Ark (Domestic Violence Shelter)  
 325-643-2699 or 800-313-2699  
[www.arkshelter.org](http://www.arkshelter.org)

Family Services Center, Inc.  
 325-646-5939 or 866-211-2255  
[www.familysc.net](http://www.familysc.net)

Legal Aid of Northwest Texas, Brownwood number  
 325-646-8659  
[www.lanwt.org](http://www.lanwt.org)

Central Texas MHMR (Center for Life Resources)  
 325-646-9574  
<http://cflr.us/wordpress>

Heart of Texas Children's Advocacy Center  
 1409 Early Blvd.  
 Early, TX 76802.  
[www.cactx.org/find-a-local-center/early-cac](http://www.cactx.org/find-a-local-center/early-cac)

The Brownwood Police Dept.  
 325-646-2525  
[www.ci.brownwood.tx.us/PD/pdindex.htm](http://www.ci.brownwood.tx.us/PD/pdindex.htm)

Brownwood Regional Medical Center  
 325-646-8541  
[www.brmc-cares.com/Brownwood-Regional-Medical-Center/home.aspx](http://www.brmc-cares.com/Brownwood-Regional-Medical-Center/home.aspx)

#### **Sweetwater Campus Resources:**

TSTC Police  
 325-235-7400 (on campus phone - call 400)

#### **Sweetwater Local Resources:**

Sweetwater Police Department  
 325-236-6686  
<http://cityofsweetwatertx.com/index.aspx?NID=86>

Nolan County Sheriff's Office  
 325-235-5471  
[www.nolanso.com](http://www.nolanso.com)

Rolling Plains Memorial Hospital  
 325-235-1701  
[www.rpmh.net](http://www.rpmh.net)

Nolan County - MHMR  
 325-236-6619  
[www.wtcmhmr.org/poc/view\\_doc.php?type=doc&id=10429](http://www.wtcmhmr.org/poc/view_doc.php?type=doc&id=10429)

Nolan County - District Attorney  
 325-235-8639  
[www.co.nolan.tx.us/default.aspx?Nolan\\_County/District.Attorney](http://www.co.nolan.tx.us/default.aspx?Nolan_County/District.Attorney)

Nolan County - Victim Services Coordinator  
 325-235-2338  
<http://www.tdcj.state.tx.us/divisions/vs/counties/nolan.html>

Hope House Counseling:  
 325-235-1910  
<http://hopehousesweetwater.com>

Family and Individual Counseling- Carol Frye, LPC  
 325-235-9896

West Texas Child Advocacy  
 325-235-1818  
[www.cactx.org/find-a-local-center/west-texas-childrens-advocacy-center](http://www.cactx.org/find-a-local-center/west-texas-childrens-advocacy-center)

### **Bystander Intervention**

Bystander Intervention is a philosophy and strategy for prevention of various types of violence, including bullying, sexual harassment, sexual assault, and intimate partner violence. Simply put, it's when someone interrupts a potentially harmful situation. That includes stopping actions or comments that promote sexual violence.

TSTC encourages members of our community to speak up and say something if they see a potentially harmful situation.

### **Five Steps to Accountability**

1. Notice the event.
2. Recognize it as a risky situation.
3. Take responsibility for helping in the situation.
4. Have the skills necessary to intervene.
5. Take Action!

### **Intervening in Any Situation**

- Gather details about the situation.
- Ask for help from other bystanders or friends.
- Be sensitive and understanding.

- Intervene early and in a safe manner.
- Consider multiple options.
- Don't be afraid to call for help! Resident Assistants (RA)/Community Assistants (CA), TSTC Police, local police at 911

### Nonemergency Intervention

- Don't make assumptions about the people involved or the situation.
- Keep your eyes open for red flags.
- Set a goal or a plan.
- In conversations, keep in mind that it is about mutual respect.

### Emergency Intervention

- Try to keep everyone calm.
- Know your exit strategies.
- Understand that situations can escalate quickly.
- Be clear and concise when asking for help.
- Keep yourself and others safe.
- Tell whoever involved that you are committed to helping them.
- Encourage value-based decisions.

### National Bystander Intervention

Break the Cycle

[www.breakthecycle.org](http://www.breakthecycle.org)

[www.breakthecycle.org/what-can-i-do](http://www.breakthecycle.org/what-can-i-do)

A CALL TO MEN

[www.acalltomen.org](http://www.acalltomen.org)

Empower Your Friends & Family

[www.acalltomen.org/empower](http://www.acalltomen.org/empower)

hollaback!

[www.ihollaback.org](http://www.ihollaback.org)

Take Action

[www.ihollaback.org/take-action](http://www.ihollaback.org/take-action)

Know Your IX

[www.knowyourix.org](http://www.knowyourix.org)

Support a Survivor

[www.knowyourix.org/i-want-to/support-survivor](http://www.knowyourix.org/i-want-to/support-survivor)

[Loveisrespect.org](http://Loveisrespect.org)

Help a Friend

[www.loveisrespect.org/pdf/help-a-friend.pdf](http://www.loveisrespect.org/pdf/help-a-friend.pdf)

Help a Stranger

[www.loveisrespect.org/pdf/help\\_a\\_stranger.pdf](http://www.loveisrespect.org/pdf/help_a_stranger.pdf)

The National Domestic Violence Hotline

[www.thehotline.org](http://www.thehotline.org)

Help for Friends and Family

[www.thehotline.org/help/help-for-friendsand-family](http://www.thehotline.org/help/help-for-friendsand-family)

### Legal Assistance:

#### Abilene

Legal Aid of North West Texas

500 Chestnut, Ste. 901

Abilene, Texas 79602

325-672-7913 or 800-933-8591

[www.lanwt.org](http://www.lanwt.org)

#### Breckenridge

Legal Aid of North West Texas

500 Chestnut, Ste. 901

Abilene, Texas 79602

325-672-7913 or 800-933-8591

[www.lanwt.org](http://www.lanwt.org)

#### Brownwood

Legal Aid of North West Texas

300 N. Fisk Ave.

Brownwood, Texas 76801

325-646-8659

[www.lanwt.org](http://www.lanwt.org)

#### Sweetwater

Legal Aid of North West Texas

500 Chestnut, Ste. 901

Abilene, Texas 79602

325-672-7913 or 800-933-8591

[www.lanwt.org](http://www.lanwt.org)

#### Marshall

Lone State Legal Aid

140 East Tyler, Suite 150

Longview, Texas 75601

903-758-9123 or 800-866-0821

[www.lonestarlegal.org](http://www.lonestarlegal.org)

#### Harlingen

Texas RioGrande Legal Aid, Inc.

308 East Harrisons Ave.

Harlingen, Texas 78550

956-364-3800

800-369-2651

[www.trla.org](http://www.trla.org)

#### Fort Bend County

Lone State Legal Aid

1415 Fannin Street

Houston, Texas 77002

713-652-0077

800-733-8394

[www.lonestarlegal.org](http://www.lonestarlegal.org)

**Waco**

Lone Star Legal Aid  
900 Austin Ave. 7th Floor  
Waco, Texas 76701  
[www.lonestarlegal.org](http://www.lonestarlegal.org)

**Williamson County**

Texas RioGrande Legal Aid, Inc.  
4920 N. I 35  
Austin, Texas 78751  
512-374-2700  
800-369-9270  
[www.trla.org](http://www.trla.org)

**North Texas**

Legal Aid of North West Texas  
100 E. Main Street, Ste. 200  
Waxahachie, Texas 75165  
866-614-3344  
[www.lanwt.org](http://www.lanwt.org)

**Student Financial Aid Assistance:**

Jackie Adler, Executive Director of Financial Aid  
254-867-3620  
[jackie.adler@tstc.edu](mailto:jackie.adler@tstc.edu)

**Residency or International Enrollment Assistance:**

Paula Arredondo, Executive Registrar  
956-364-4322  
[paula.arredondo@tstc.edu](mailto:paula.arredondo@tstc.edu)

TSTC has an ongoing comprehensive prevention and awareness campaign and can be found on the TSTC website under Title IX. [http://www.tstc.edu/student\\_life/titleix](http://www.tstc.edu/student_life/titleix)

## Amnesty for Alcohol and Drug Emergencies

Alcohol poisoning and drug overdose are serious and life threatening medical emergencies. Students may encounter this type of emergency during their time at Texas State Technical College. Sometimes students are afraid to seek emergency medical care when alcohol poisoning or drug overdose is suspected because they do not want to get themselves or others in trouble. In order to encourage students to seek emergency medical care, TSTC has instituted the Student Amnesty for Alcohol and Drug Emergencies.

Amnesty means current TSTC students can avoid formal college disciplinary action and the creation of a formal disciplinary record when they call for help for an alcohol or drug-related medical emergency.

Student Amnesty for Alcohol and Drug Emergencies applies in the case of the following:

- Possession of alcohol or drugs by a minor (minor in possession).
- Unauthorized possession or use of alcohol or drugs on campus.
- Consumption of alcohol by a minor (minor in consumption).
- Use of drugs.
- Intoxication as the result of using alcohol (including public intoxication).

Student Rights and Responsibilities office deems students appropriate for amnesty when they are referred for alcohol and drug related incidents.

**The Procedure**

1. Call 911 when alcohol poisoning or drug overdose is present or suspected.
2. Stay with the person under the influence.
3. Cooperate with all emergency personnel.

**After the Incident**

1. Student(s) will be referred to the Student Rights and Responsibilities office and will be evaluated for amnesty.
2. Student(s) eligible for amnesty will still be required to participate in an educational component and may be referred for an individual consultation however they will not face formal disciplinary action.
3. Student(s) who decline or fail to attend the educational component or fail to comply will become subject to formal disciplinary action.

There are limitations to this program and inclusion in the program is not automatic.

This program is separate, but in congruence with, the state amnesty policy, Senate Bill 1331 (Texas 911 Lifeline legislation), which provides amnesty against criminal citations for those seeking medical attention as the result of an illegal action, such as minor in consumption or possession of alcohol by a minor. Student Amnesty for Alcohol Emergencies provides protection against formal disciplinary action by the college, whereas the Texas 911 Lifeline legislation provides protection against legal action.

### Amnesty for Victims of Sexual Misconduct (Title IX/VAWA)

The TSTC community encourages students to report violations involving sexual misconduct which includes

sexual harassment, sexual assault, dating violence and stalking. Sometimes victims are hesitant to report to College officials because they fear that they themselves may be charged with policy violations. TSTC will not pursue disciplinary action against students (complainants or witnesses) for disclosure of personal consumption of alcohol or other drugs (underage or illegal) where the disclosure is made in connection with a good faith report or investigation of prohibited conduct and the personal consumption did not place the health or safety of any other person at risk.

## Code of Student Conduct

### Purpose

It is the practice of Texas State Technical College (TSTC) to encourage fair and efficient solutions for problems arising out of the student/college relationship. As responsible members of the college community, students and organizations/clubs are expected to maintain the highest level of academic and social conduct and are responsible for knowing TSTC's policies and standards. The Code of Student Conduct (the Code) is reviewed every academic year, but it is a living document which can be modified to comply with federal, state, or local law.

### Definitions

**Board of Regents** – governing body of TSTC, appointed by the Governor of Texas.

**Code of Student Conduct (the Code)** – standards of conduct and procedures established to provide a full and fair opportunity for review of alleged misconduct.

**College** – Texas State Technical College (TSTC).

**College Premises** – all buildings, facilities, land, and other property that is owned, used, leased or controlled by the College.

**Complaint** – a statement of the essential facts constituting a violation of the Code or policy of the College.

**Conduct Officer** – college official authorized to investigate alleged violations of the Code and to administer the procedures and sanctions of the Code.

**Disciplinary Conference (Conference)** – an informal conversation with the student to review the alleged violation(s) and give them an opportunity to respond directly and present relevant information including witnesses, documents, etc.

**Drug Paraphernalia** – any equipment, product, or material that is used for making, using, or concealing drugs, regardless of that item's intended use at the time of its production.

**Established Student Relationship** – from the time of application for admissions to the College through an award of degree which will include breaks of enrollment if the student continues to have an association with the College.

**Notice of Complaint** – the initial document that identifies alleged misconduct in violation of the Code.

**Review** – a request made by a student who disagrees with the Conduct Officer's decision or sanction and requests that the Student Conduct Review Board evaluate the decision.

**Review Administrator** – Chair/individual assigned to collect, schedule, and be a liaison for the review process.

**Preponderance of Evidence** – the majority of the evidence would cause a reasonable person to support a conclusion (it is more likely than not it happened, 51 percent rule).

**Residential Facilities** – any facility operated by the College or under agreement by an outside agency, with sole purpose of providing housing for students.

**Student** – an individual who has established a relationship with the College for the purpose of taking a course or courses.

**Student Conduct Review Board** – a group convened at the request of a student or student group to evaluate the Dean's decision or sanction placed on an individual.

**Working Day** – Monday through Friday, except for official college holidays or college closings.

### Application

- The Code provides an educational and non-adversarial process designed to resolve matters concerning student conduct; it is not designed to be a legal or judicial process.
- The Code is designed to be reliable, fair and effective.
- Individuals who have established a student relationship with the College are subject to the Code.
- The Code applies to all aspects of campus life: in the classroom, on college property, in residential facilities, at an off campus sponsored activity, or conduct that may occur off campus.
- The Code operates on a preponderance evidence.
- Disciplinary records are maintained by the local

- campus Conduct Officer in accordance with college records and retention policy.
- Students at TSTC neither lose the rights nor escape the responsibilities of citizenship. They are expected to conduct themselves in accordance with local, state, federal, and international law and the Code as authorized by the TSTC Board of Regents.
- The college disciplinary process will proceed during the pendency of any related criminal or civil proceedings and will not be subject to reconsideration even if related charges are dismissed or otherwise resolved.
- Student Clubs/Organizations are expected to conduct themselves in a manner consistent with the College's function as an educational institution. Student Clubs/Organizations must observe all international, federal, state or local laws and college policies, including the Code, both on campus and off campus.

## Prohibited Conduct

The Conduct Officer may initiate disciplinary proceedings against a student for violations of the Code. Specific examples of prohibited conduct subject to disciplinary action include, but are not limited to, the following:

- A. Acts Violating Statewide Operating Standards (SOS), and College Policies.
- B. Acts of Dishonesty
  - 1. Intentionally furnishing false or misleading information to the College or a college official.
  - 2. Forging, altering, falsifying or misusing any college document or instrument of identification.
  - 3. Intentionally interfering with any election process.
- C. Acts Affecting the College Community
  - 1. Engaging in disruptive behavior or activity, including but not limited to such acts defined in the Texas Education Code.
  - 2. Failure to comply with the reasonable directive(s) of a college employee which includes Resident/Community Assistants.
  - 3. Failure to heed an official summons within the designated time or failure to identify oneself to an institutional representative in response to a request.
  - 4. Violation of a rule or regulation relating to residence life policies, a breach of a housing contract/lease or motor vehicle regulations.
  - 5. Gambling in any form.
  - 6. Failure to fulfill financial or contractual obligation(s) to the College.
  - 7. Engaging in or use of obscene, lewd, or vulgar language, behavior and display regardless of the medium.
  - 8. Violating the TSTC Pet Policy
- D. Acts Affecting Property or Service
  - 1. Theft or attempted theft of property or services.
  - 2. Possession of stolen or lost property.
  - 3. Destruction or damage to college property or the property of others.
  - 4. Unauthorized possession, duplication or use of access devices to college property or the property of others.
  - 5. Unauthorized entry onto or use of college or individual's premises, equipment or resources.
- E. Acts Affecting Computing Resources or Technology
  - 1. Unauthorized access, use or misuse of college computing resources, systems or data.
  - 2. Disrupting college computer operations or the availability of computing resources.
  - 3. Using another individual's identification, password or other credential.
  - 4. Unauthorized use or sharing of copyrighted materials through electronic means.
  - 5. Initiating or contributing to attacks against external networks or college systems.
  - 6. Use of college computers to access lewd, offensive or pornographic material.
  - 7. Transporting copies of college programs, records or data to another person or computer without written authorization.
  - 8. Using the College's computer resources for personal gain.
- F. Acts Affecting Health, Safety or Welfare
  - 1. Engaging in physical or verbal abuse, domestic violence, threats, intimidation, harassment, bullying, coercion, physical/electronic stalking or any other conduct that threatens or endangers the health, safety or welfare of another person.
  - 2. Possession, use, sale or distribution of any quantity, whether usable or not, of an illicit drug (including synthetic), narcotic, controlled substance, illegal drug paraphernalia or equipment. This includes medication not prescribed to oneself.
  - 3. Public intoxication, use, possession or distribution of an alcoholic beverage(s).
  - 4. Being under the influence of alcohol, an illicit drug, narcotic, synthetic, or controlled substance.
  - 5. Providing minors or any other individual intoxicating beverages in violation of any state, federal or local law.
  - 6. Hazing, as defined by the Texas Education Code, including engaging in, soliciting, encouraging, directing, aiding, or voluntarily submitting in behavior that could cause physical, mental or emotional harm to another or is considered humiliating or degrading.
  - 7. Engaging in acts of gender discrimination, sexual misconduct, abuse, assault or harassment.
  - 8. Engaging in speech, either orally or in writing that is directed to incite, produce lawless action, or intimidate another.

9. Possession or use of a dangerous weapon, defined as any instrument, device or object capable of inflicting physical harm. Examples of a dangerous weapon include unlicensed firearms, explosive, devices, dangerous chemicals, illegal length knives, fireworks, compressed air guns, pellet guns, stun or zip guns, tasers, BB guns, paintball guns, batons, nunchucks, etc.
10. Misuse or tampering of fire or other life safety equipment or interfering with any college or public safety function.
11. Reporting a false emergency or threat.
12. Smoking inside campus buildings or designated nonsmoking areas.

The Office of Student Rights and Responsibilities reserves the right to contact parents/guardians or identified responsible parties related to any student safety concern or serious student issue. Federal legislation allows a College to notify parents/guardians of student (who are under the age of 21, regardless of dependency) misconduct that results in the student being found responsible for violating the alcohol/drug policy on campus. Notification to parents/guardians is at the discretion of the Conduct Officer in the event he/she feels there is a concern to be conveyed to parents/guardians

#### G. Acts Violating Law

1. Engaging in conduct that constitutes a criminal offense under international, federal, state or local law whether convicted or not, and regardless of whether the incident happened on campus or off campus.
2. Breaching the peace; or abetting or inciting another to breach the peace.
3. Disorderly conduct as defined by state law or any activity that includes, but may not be limited to: physical or verbal abuse, injury to another person, indecent displays or use of indecent language, nonconsensual acts of sexual contact/assault or disrespect for the rights and privileges of others.

#### H. Facilitating Acts of Misconduct

1. Planning or facilitating an act of misconduct.
2. Being present during the commission of an act of misconduct, supporting/encouraging the act or not reporting the act to the appropriate officials.

#### I. Acts interfering with the Disciplinary Process

1. Failure to comply with a request to schedule and attend a conference with the Conduct Officer within a designated time.
2. Failure to comply with sanction(s) imposed under the Code or by the College.
3. Falsifying or misrepresenting information at any stage of the disciplinary process.
4. Knowingly initiating a false complaint to a college official.
5. Attempting to discourage a person's participation in or use of the disciplinary process.

6. Harassment, intimidation, coercion, bribery, or retaliation against a college official or person involved in the disciplinary process.

#### J. Violations of Academic Integrity

Includes, but is not limited to, cheating, plagiarism, collusion, falsifying academic records, any act designed to give unfair advantage to the student or any attempt to commit such an act.

1. "Cheating" on academic work includes, but is not limited to:
  - Copying from another student's test paper or other academic work.
  - Possession, during a test, of material, such as class notes, that is not authorized by the person administering the test. The presence of textbooks is a violation if they have been prohibited by the person administering the test.
  - Collaborating, without authority, or seeking aid from another student during an examination or assignment, or in preparing academic work.
  - Using, buying, selling, stealing, transporting or soliciting, in whole or in part, the contents of an unadministered test, test key, homework solution or computer program.
  - Substituting for another student or permitting another student to substitute for oneself to take a test or prepare other academic work.
  - Paying, offering money or other valuables to, or coercing another person to obtain an unadministered test, test key, homework solution or computer program, or information about an unadministered test, test key, homework solution or computer program.
  - Falsifying laboratory reports and/or other academic work offered for credit.
  - Taking, keeping, misplacing or damaging property of the College, or of another, if the student knows or reasonably should know that an unfair academic advantage would be gained by such conduct.
  - Failing to comply with instructions given by a person administering a test.
  - Discussing the contents of an examination with another student who will take the examination.
  - Divulging the contents of an examination for the purpose of preserving questions for use by another when the instructor has designated that the examination is not to be removed from the examination room or not to be returned to the student.
  - Misrepresenting facts, including providing false grades or resumes for the purpose of

obtaining academic or financial benefit or injuring another student academically or financially.

2. "Plagiarism" includes, but is not limited to, the appropriation, buying, receiving as a gift or obtaining by any means another's work and the submission of it as one's own academic work offered for credit.
3. "Collusion" means the unauthorized collaboration with another person in preparing academic or lab assignments offered for credit, or collaboration with another person to commit a violation of any scholastic-dishonesty rule.
4. "Falsifying academic records" includes, but is not limited to, the alteration of grades or other falsification of an academic record such as grade report, test paper, registration material or reporting form used by the College.

## Disciplinary Procedures

The Conduct Officer will assess all suspected and reported violations of the Code. Complaints regarding alleged misconduct should be submitted to Student Rights and Responsibilities as soon as possible after the alleged violation.

After completing an initial inquiry the Conduct Officer may:

- Dismiss the allegations as unfounded.
- Summon the student for a conference.
- Upon completion of the conference, dismiss the allegations or impose disciplinary sanctions.
- Impose immediate interim action if the continued presence of the student poses a danger to persons, property, or disruption of the academic process of the College.

## Notice of Complaint

- Deliver a notice summarizing the alleged misconduct either by mail, hand delivery, or electronic means. All students are responsible for maintaining a current physical mailing address with the College and be aware if documents are sent electronically the student's official TSTC email address will be used.
- Give notification of a date that the student has to complete the conference by and if not completed the student automatically waives his/her right to a conference and the Conduct Officer will make a decision based solely on the information at hand.

## Notice of Disciplinary Findings

- If it is determined that the greater weight of evidence or preponderance of evidence indicates that a student engaged in a violation of the Code, then the Conduct Officer will deliver a Notice of Disciplinary Findings.
- Notice of Disciplinary Findings will also include

information regarding the Review process.

- This notice will inform the student of the findings, any sanctions and/or restrictions imposed, and the student's right to a review if applicable.

## Sanctions for Misconduct

- Admonition – oral or written reprimand.
- Discretionary Sanctions – work assignments, service to the College, etc.
- Disciplinary Probation – indicates that the student has engaged in unacceptable behavior and that further violation may result in more severe action. Additional conditions may be imposed such as recommended educational seminars/courses, community service, etc.
- Withholding of grades, official transcript, certificate of completion, or degree.
- Suspension of Rights and Privileges – including, but not limited to, participation in intramurals/recreation center, extracurricular activities, election to office, restrictive building/area access, housing or visitation privileges, etc.
- Removal or bar from college housing facilities.
- Administratively withdrawn from a course(s).
- Bar Against Readmission - for a specific period of time, and/or drop from current enrollment or drop from enrollment in one or more courses.
- Restitution – reimbursement for damages to or misappropriation of property either monetarily or by specific duties.
- Failing grade or other academic penalty.
- Denial of Degree – this will become part of the student's permanent record.
- Revocation of a degree, grade, or certification - this will become part of the student's permanent record.
- Suspension – removal from the College for a specified period of time. A suspended student will be administratively withdrawn from TSTC, prohibited from entering college premises, and blocked from future registration until reviewed by the Conduct Officer. This sanction will become a part of the student's permanent record and may be removed at the completion of the sanction, at the student's request.
- Expulsion – permanent removal from the College. An expelled student will be administratively withdrawn from TSTC and prohibited from entering college premises. This will become part of the student's permanent record.
- Other penalties as seen fit by the appropriate Conduct Officer or college administrator.

## Review Process

- Only sanctions that include restrictions, loss of privileges, failing grade or other academic penalty, withholding/revocation of grades or degrees, suspension, or expulsion may be reviewed by the Student Conduct Review Board (Board). All Title IX

cases will follow the Sexual Misconduct Policy and the Title IX Review Board process. In an Academic Dishonesty Review, the Board will conclude with a recommendation to the Campus Academic Officer (CAO) who will then notify the student with the final decision.

- A student has three working days to request a review to the Review Administrator.
- The student will be notified within five working days of the time, date, and location of the review by the Review Administrator. Any delays due to extenuating circumstances will be documented and all parties will be notified accordingly.
- At least two working days prior to the hearing, a list of witnesses and documentation must be turned into the Review Administrator. Upon request, the student may receive all documentation no later than 24 hours prior to prepare for the Review.
- The Conduct Officer will present the College's case followed by the student's presentation. Each Party will have the opportunity to present testimony and evidence in support of their position. The Board will be allowed to question both parties and request additional information or clarification.
- Review procedures will be confidential and closed to the public.

### Student Conduct Review Board

- Consists of five members of the campus community: chairperson (who also serves as the Review Administrator), two other faculty/staff members besides the Chairperson and two students. The chairperson and the faculty and staff members will be appointed by the local Campus Provost. Designated students selected to serve on the Board must be currently enrolled and must be in good disciplinary standing.
- The Chairperson will direct proceedings of the review and participate fully in all reviews and participate fully to include voting.
- The objective of the Board is to review the findings and sanctions originally imposed by the Conduct Officer. They may not impose more severe penalties.
- Academic disciplinary reviews will conclude with a Board recommendation to the Campus Academic Officer who will then notify the student with a final, written decision within five working days of the Review.
- The decision will be made by majority vote. All votes will be recorded by secret ballot, tabulated by the chair.
- The findings and conclusions of the Board are final, unless new or extenuating circumstances are introduced for review by the Vice President of Student Development or designee.
- The Chairperson will have three working days to provide written results of the Review to all involved.

### General Rules

- Reviews are informal proceedings and traditional rules of the courtroom evidence do not apply, but the Conduct Officer must show substantial evidence and that the sanction imposed was reasonable based on the circumstances.
- An advisor or support person may be present for the review, but may not make statements, represent the accused or question witnesses.
- If a student intends to be accompanied by an attorney for the review, the attorney will not be permitted to present evidence or argument before the Board. The college reserves the right to counsel in the event it is deemed necessary. The time frame for scheduling a Review may be extended if the College has to retain counsel.

### Academic Dishonesty Procedures

Procedures for discipline due to academic dishonesty will first be considered and reviewed by Student Learning.

### Notice of Complaint

- The instructor of record will contact the student to request a meeting at a designated date, time, and location. The instructor will notify the student of the alleged violation and provide the student an opportunity for explanation.
- If student chooses not to attend the meeting, the student automatically waives his/her right to a conference and the faculty member will make a decision based solely on the information at hand.

### Notice of Disciplinary Findings

- The instructor will assess and render academic sanctions by completing the Academic Integrity Discipline Report Form. The student will receive a copy of the completed form.
- The completed Academic Integrity Discipline Report Form will inform the student of the findings, any academic sanctions imposed, and the student's right to a Review if applicable. The faculty member will report the violation and sanctions by submitting the form to the Student Conduct Officer via the official incident reporting system.

### Academic Sanctions

- May include reduced or failing grade on an assignment or examination.
- May include reduced or failing grade in a course.
- May be rendered in addition to other disciplinary measures imposed by TSTC.
- Further disciplinary sanctions may occur if circumstances warrant or multiple academic dishonesty violations.

### Review Process

Students may request a Review of the instructor's decision to the Student Conduct Review Board. A written, final decision will be provided to the student by the Campus Academic Officer within (5) working days of the Student Conduct Review Board's formal findings letter.

## Compact With Texans

Texas State Technical College (TSTC) is a public coeducational institution of higher education offering courses of study in technical education leading to the award of Certificates and Associate of Applied Science Degrees. TSTC also provides workforce training to business and industry, continuing education to the public, and training programs for community and state economic development.

### Compact With Texas Complaint Representatives:

Abilene, Breckenridge, Brownwood, and Sweetwater  
Griselda Sanchez, Director of Student Services  
griselda.sanchez@tstc.edu  
325-235-7311

Fort Bend Technical Center  
Georgeann Calzada, Director of Student Services  
georgeann.calzada@tstc.edu  
346 239-3422

Harlingen  
Janette Gomez, Community Standards Liaison  
janette.gomez@tstc.edu  
956-364-4383

Marshall  
Annette Ellis, Director of Student Services  
annette.ellis@tstc.edu  
903-935-3313

North Texas  
Amanda Warren, Director of Student Services  
amanda.warren@tstc.edu  
972-617-4724

Waco  
Susan Shafer  
susan.shafer@tstc.edu  
254-867-3925

TSTC campuses are located at Abilene, Brownwood, Breckenridge, East Williamson County Higher Education Center, Fort Bend Technical Center, Harlingen, Marshall, North Texas Center, Sweetwater, and Waco. TSTC serves students from more than 220 counties in Texas, and TSTC

graduates may begin their careers in high-paying jobs across the state or continue their education at colleges and universities.

TSTC graduates are highly valued by business and industry for their work ethic, knowledge and workplace skills.

### TSTC's Customer Service Goal

It is the goal of Texas State Technical College faculty and staff to provide a level of customer service that is beyond expectation. We pledge to be . . .

Friendly to all we meet in our work,  
Helpful in all that we do,  
Courteous in all of our dealings,  
Responsive to customers' needs, and  
Accountable for our actions.

We will deliver the highest quality services possible with the highest regard for honesty, integrity, and ethical behavior

### TSTC's Formal Written Complaint /Compact With Texans Complaint Handling Procedure

It is the practice of Texas State Technical College to seek fair, efficient, and equitable solutions for problems that arise out of the student/college relationship and to allow any student to be heard when he/she feels that his/her rights have been violated or that an action taken by an employee of the College is unfair.

This procedure is available to all students to present complaints concerning disagreement or dissatisfaction arising out of the student/college relationship.

The filing of a student grievance is not to be interpreted as a way to change existing school policy or rules. The policy, rules or regulations of the College are of themselves not subject to a grievance process, only their implementation. This student grievance procedure is simply a way for the student to indicate that either:

1. An action taken by a school official or employee is inappropriate, improper, or too harsh; or
2. He/she is being treated differently from other students.

Most questions or complaints can be resolved through routine channels. Students are encouraged to discuss questions or complaints with the instructor or employee with whom the question or complaint has arisen. Complaints received verbally and resolved through routine channels are not considered official written complaints and are not subject to this procedure.

## Nonacademic Grievance Procedures

- A. Initial Contact – The student first must contact the parties responsible for the action or decision that is the basis of the grievance. Students are encouraged to resolve the matter through discussions with the relevant College personnel most associated with the matter. College personnel, with whom a concern is raised by a student, is expected to address the matter in an open and professional manner and take reasonable and prompt action to resolve it informally. The initial contact should occur within 10 working days from the date of the action or a decision that is the basis of the grievance.
- B. Compact with Texans Representative (Representative) – If unsuccessful in resolving the problem, the student must contact the Representative at their local campus. The Representative will assist the student by:
  1. Reviewing the grievance policy with the student(s) and the student(s) shall sign an Acknowledgement Letter of Understanding (TSTC-O-ES-104). The student(s) will receive a copy of the Statewide Operating Standard (SOS) ES 3.24.
  2. Providing the student with the Nonacademic/Academic Grievance form (TSTC- O-ES-105), so that a formal written grievance may be submitted which includes a summary of the nature of the grievance.
  3. Acknowledging receipt of the grievance in writing within five working days. The notice will let the student know the matter is receiving attention and provide an estimation of the length of time it will take to resolve the issue.
- C. The grievance will be submitted to the immediate supervisor of the party whose actions are being grieved. The immediate supervisor will provide a resolution that is consistent with TSTC policies, applicable local, state and federal laws and will be proposed in writing to the students. In addition, the immediate supervisor will notify the student and the Representative of the resolution within 15 working days from the date it is received from the Representative.
- D. If dissatisfied with the proposed resolution, the student may request that the Grievance Resolution Committee review the grievance. This request must be made in writing to the Representative within three working days of receipt of the letter outlining their resolution and must specify what in the resolution is unsatisfactory. The committee will meet within 10 working days of receiving the student's request to review all available documentation. The Grievance Resolution Committee has a maximum of five working days from the date of the review to respond to the student and employee with a decision in writing. The Grievance Resolution Committee's decision will be final.

## Academic Grievance Procedures

- A. Initial Contact – The student first must contact the parties responsible for the action or decision that is the basis of the grievance. Students are encouraged to resolve the matter through discussions with the relevant College personnel most associated with the matter. College personnel, with whom a concern is raised by a student, is expected to address the matter in an open and professional manner and take reasonable and prompt action to resolve it informally. The initial contact should occur within 10 working days from the date of the action or a decision that is the basis of the grievance.
- B. Compact with Texans Representative (Representative) – If unsuccessful in resolving the problem, the student must contact the Representative at their local campus. The Representative will assist the student by:
  1. Reviewing the grievance policy with the student(s) and the student(s) shall sign an Acknowledgement Letter of Understanding (TSTC-O-ES-104). The student(s) will receive a copy of the Statewide Operating Standard (SOS) ES 3.24.
  2. Providing the student with the Nonacademic/Academic Grievance form (TSTC- O-ES-105), so that a formal written grievance may be submitted which includes a summary of the nature of the grievance.
  3. Acknowledging receipt of the grievance in writing within five working days. The notice will let the student know the matter is receiving attention and provide an estimation of the length of time it will take to resolve the issue.
- C. The grievance will be submitted to the Campus Academic Manager of the party whose actions are being grieved. The Campus Academic Manager will provide a resolution that is consistent with TSTC policies, applicable local, state and federal laws and will be proposed in writing to the student. In addition, the Campus Academic Manager will notify the student and the Representative of the resolution within 15 working days from the date it is received from the Representative.
- D. If dissatisfied with the proposed resolution, the student may request that the Grievance Resolution Committee review the grievance. This request must be made in writing to the Representative within three working days of receipt of the letter outlining their resolution and must specify what in the resolution is unsatisfactory. The committee will meet within 10 working days of receiving the student's request to review all available documentation. The Grievance Resolution Committee has a maximum of five working days from the date of the review to respond to the student and employee with a decision in writing. The Grievance Resolution Committee's decision will be final.

### Review Procedures

1. The Chair of the Grievance Resolution Committee will be responsible for assembling the committee to hear the review.
2. The decision of the Grievance Resolution Committee is final.
3. In extenuating circumstances, the timeframe(s) may take longer than expected and the student with the grievance will be notified with a new timeframe.
4. The Grievance Resolution Committee has a maximum of five working days from the date of the review to respond to the student and employee with a decision in writing.

### Compact With Texans Complaint Handling Procedures

1. The Customer Service Form (TSTC-O-ES-084) must be completed out entirely and submitted to the local Representative, both can be found on-line in the TSTC Catalog and Student Handbook.
2. The Representative will acknowledge receipt of the grievance in writing within five working days. The notice will let the student know the matter is receiving attention and estimate the length of time it will take to resolve the issue.
3. The Representative will contact the immediate supervisor about the complaint. The supervisor will review the complaint and interview the employee and/or any witnesses if applicable.
4. The immediate supervisor will provide a letter within 15 working days to the complainant that addresses the complaint and what actions, if applicable, were taken by TSTC. This letter also acknowledges that the complaint has been addressed and resolved in a reasonable time period and in a manner consistent with TSTC policies, as well as applicable local, state and federal laws.

Student disciplinary decisions that involve severe disciplinary penalties are not subject to the Student Grievance Policy, but should be run through the student conduct review process.

Discrimination of a student or a Title IX grievance will be handled according to the appropriate policy.

## Prohibiting Racial Harassment Policy

TSTC prohibits any act, deed or speech interpreted as racial harassment, by or against, students, employees, and guests of the College. Students or employees engaging in such conduct are subject to disciplinary action ranging from probation or suspension to termination of employment. For more information please see SOS HR 2.4.5 Racial Harassment.

### Philosophy Statement

TSTC is committed to the principles of free inquiry and free expression. Members of the College community have the right to hold, vigorously defend and promote their ideas and opinions to flourish or wither according to their merits.

Respect for this right requires that students and employees tolerate expression of views that they find offensive. All members of the educational community should however, voluntarily adopt standards of civility and good taste that reflect mutual respect, understanding and sensitivity among its diverse racial, ethnic and cultural groups.

TSTC is also committed to the principles of equal opportunity and nondiscrimination. Each student and employee has the right to work and be educated without discrimination on the basis of race, color, gender, national origin, age, genetic information, disability, or veteran status.

Harassment of students or employees on the basis of race contributes to a hostile work or school environment that makes access to work or education for those subjected to it less than equal. Racist behavior also brings dishonor to the perpetrator, demoralizes and disrupts the academic community as a whole and diminishes the stature of TSTC.

Racist communication and acts that demean, ridicule and humiliate the victim and also can cause serious emotional distress, impede the learning process and in the form of "fighting words" may provoke a violent response.

For all these reasons, TSTC unequivocally condemns racist behavior in all of its forms. The Conduct Officer or designee at the local campus has the primary responsibility for responding to an accusation or complaint of racial harassment and will inform the student of complaint, investigation and resolution procedures during the initial meeting.

Upon receipt of an allegation of racial harassment, the Conduct Officer or designee shall ascertain the facts and provide mediation services to assist the student. These mediation services may include consultation with the student and alleged wrongdoer, either separately or together, and with student services staff, vice president's or other approved administrative officials of the College. If such mediation efforts result in a solution satisfactory to the student, the student shall be asked to complete a written and signed statement to the effect.

Where such mediation efforts fail or the student does not wish to pursue mediation, the student complainant may seek formal resolution concerning potential suspects of

criminal behavior. The term is not relevant as it pertains to witnesses, complainants or other citizen contacts.

## Instructional Philosophy

TSTC trains employees for tomorrow's careers, helping to strengthen the economic competitiveness of Texas and improve the lives of its people. TSTC believes in "learning by thinking and doing." Its curricula give students the technical knowledge, skills and abilities they need to be successful in their chosen careers. Its faculty is highly qualified, with years of business and industry experience in their respective fields. And its facilities and equipment provide students with significant opportunities to apply what they learn.

## Industry Advisory Committees

Industry Advisory Committees are an essential component of TSTC's graduate success. Their members guide curriculum development by advising faculty on the skills, knowledge, and abilities that employees need. They help to create and equip facilities so students gain experiences that enhance their value to employers. Their on-going involvement ensures that TSTC students receive the right kind of education.

## Educational Foundations

The TSTC Foundation is a nonprofit educational corporation chartered by the state of Texas in 2000 for the sole purposes of 1) supporting the educational undertaking of Texas State Technical College by furthering education, research and financial assistance of deserving students; 2) soliciting donations for particular objectives to accomplish such purpose, and 3) cooperating with the advancement and general welfare of TSTC as a whole. It is the intent of the Foundation to work very closely with the Board of Regents and the TSTC Administration to determine unmet needs of TSTC and expedite solutions to those needs.

## Family Educational Rights and Privacy Act (FERPA)

TSTC complies with the Family Educational Rights and Privacy Act and informs students of their rights under the act. Student's rights covered by the act are as follows::

1. The right to inspect and review the academic record within 45 days after the day Texas State Technical College receives a request for access.  
A student should submit to the Registrar or other

appropriate official, a written request that identifies the record(s) the student wishes to inspect. The school official will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the school official to whom the request was submitted, that official shall advise the student of the correct official to whom the request should be addressed.

2. The right of a student to petition to the College to amend or correct any part of his/her academic record which is believed to be inaccurate, misleading or in violation of the privacy or other rights of the student. When the College decides it will not amend or correct a student's record, the student has a right to a hearing to present evidence that the record is inaccurate, misleading or in violation of the privacy or other rights of the student.  
A student who wishes to petition to amend or correct a record may submit a written statement to the Custodian of Student Records identifying the part of the record the student wants changed, and specify why it should be changed. If the College decides not to amend the record as requested, the College will notify the student in writing of the decision and the student's right to a hearing regarding the request for amendment.
3. The right to provide written consent before the College discloses personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent.

Texas State Technical College discloses education records without a student's prior written consent under the exception for disclosure to school officials with legitimate educational interests. A school official is as a person employed by Texas State Technical College in an administrative, supervisory, academic or research, or support staff position (including law enforcement unit personnel and health staff); a person approved by and under contract to TSTC in a faculty position; a person or company with whom the College has contracted (such as an attorney, auditor or collection agent); a person appointed by the Governor and confirmed by the State Senate as a member of the Texas State College Board of Regents; or a student serving on an official committee, such as a disciplinary or grievance committee, or assisting another school official in performing his or her tasks.

A school official has a legitimate educational interest if the official needs to review an educational record in order to fulfill his or her professional responsibilities for Texas State Technical College.

Upon request, the College may also disclose educational records without student written consent to the following:

- a. parents of an eligible student who claim the student as a dependent for income tax purposes (form available in the Office of Admissions and Records);
  - b. in order to comply with a judicial order or a lawfully issued subpoena;
  - c. appropriate parties in a health or safety emergency;
  - d. an alleged victim of any crime of violence or non-forcible sex offense; the disclosure may only include the final results of any institutional disciplinary proceeding with respect to that alleged crime or offense, regardless of whether the institution concluded a violation was committed;
  - e. the general public if the institution determines as a result of disciplinary hearing that the student committed a crime of violence or non-forcible sex offense in violation of the institution's rules or policy or state or federal law, as authorized by state law;
  - f. parents of a student under the age of 21 regarding a college's determination that the student violated federal, state or local law or institutional policy governing the use or possession of alcohol or a controlled substance.
4. The right of a student to consent to release of semester credit hours taken at other institutions to the Texas Higher Education Coordinating Board.
  5. The right of any person to file a complaint with the Family Education Rights and Privacy Act Office, Department of Education, Family Policy Compliance Office, 400 Maryland Avenue SW, Washington, DC 20202-4605, if TSTC violates the FERPA.

## Directory Information

Under the Family Education Rights and Privacy Act of 1974, the following is designated by TSTC as directory information and may be made public unless the student desires to withhold all or any portion of it: name, preferred address, preferred telephone number, email address, classification of coursework level, enrollment status, major field of study, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of college attendance, photograph images, degrees, certificates and awards received and most recent previous educational agency or institution attended by the student. A currently enrolled student may prohibit the release of directory information by completing an appropriate request form in the Office of Admissions & Records during registration or within the first five class days of each term. Under the Privacy Act of 1974, official records are not open to the public and will

not be divulged without consent from the student. Minors attending the College have the same right regarding their records as adult students. If a student is still a legal dependent of a parent or guardian, the parent has the right to access the records of the dependent student provided the parent can establish this dependency as defined by the Internal Revenue Code of 1954, section 152. This request must be made in person at the Office of Admissions & Records by providing a copy of the most recent federal income tax return and required picture identification.

If you have any questions concerning disclosure of information contact the Registrar. Student Privacy and FERPA updates are available at [www.tstc.edu](http://www.tstc.edu).

## Use of Student Photographs and Signatures for Publications

It is the policy of Texas State Technical College to utilize images or signatures of students for promotion or advertising purposes after obtaining the student's written permission to do so. A release form shall be obtained for each set of student images or signatures retained for use by the College. The release form shall be maintained in the student's permanent academic record file. Other copies may be maintained elsewhere at the College's decision.



## **Associate Degrees & Certificates**

## PROGRAMS & DEGREES

		ABILENE	BRECKENRIDGE	BROWNWOOD	FORT BEND CO.	HARLINGEN	MARSHALL	NORTH TEXAS	SWEETWATER	WACO	WILLIAMSON CO.	ONLINE
AWARD NAME	AWARD TYPE											
Academic Core Curriculum	CCC					▲						
Agricultural Technology	AAS					▲						
Aircraft Airframe Technology	AAS	▲				▲				▲		
Aircraft Airframe Technician	CER2	▲				▲				▲		
Aircraft Dispatch Technology	AAS									▲		
Aircraft Pilot Training Technology - Airplane Specialization	AAS									▲		
Aircraft Pilot Training Technology - Helicopter Specialization	AAS									▲		
Aircraft Powerplant Technology	AAS	▲				▲				▲		
Aircraft Powerplant Technician	CER2	▲				▲				▲		
Air Traffic Controller	AAS									▲		
Architectural Design & Engineering Graphics Technology	AAS	▲	▲			▲			▲			▲
Architectural/Civil Drafting Technology	AAS									▲		
Auto Collision & Management Technology - Refinishing Specialization	AAS					▲				▲		
Auto Collision Refinishing	CER1					▲				▲		
Auto Collision Refinishing	ATC					▲				▲		
Auto Collision & Management Technology - Repair Specialization	AAS					▲				▲		
Auto Collision Repair	ATC					▲				▲		
Auto Collision Repair	CER1					▲				▲		
Auto Collision Repair	CER2					▲				▲		
Automotive Technology	AAS					▲			▲	▲		
Automotive Technician	CER2					▲			▲	▲		
Chrysler Specialization	CER2									▲		
Automotive Maintenance & Light Repair	CER1					▲			▲	▲		
Toyota T-TEN Specialization	CER2									▲		
Advanced Vehicle Fuel Systems	ESC									▲		
Avionics Technology	AAS									▲		
Biology	AS					▲						
Biomedical Equipment Technology	AAS					▲				▲		
Medical Imaging Systems Technology	AAS									▲		
Building Construction Technology	AAS					▲				▲		
Building Construction Craftsman	CER1					▲				▲		
Business Applications Programming	ATC									▲		
Business Management Technology	AAS	▲	▲	▲		▲	▲					▲
Business Management Technology	CER2	▲	▲	▲		▲	▲					▲
Chemical Dependency Counseling	AAS	▲	▲	▲								
Chemical Dependency Counseling	CER1	▲	▲	▲								

Advanced Technical Skills Certificate (ATC), Associate of Applied Science (AAS), Associate of Science (AS), Certificate of Completion 1 (CER1), Certificate of Completion 2 (CER2), Certificate of Completion 3 (CER3), Core Completer Certificate (CCC), Enhanced Skills Certificate (ESC).

AWARD NAME	AWARD TYPE										
		ABILENE	BRECKENRIDGE	BROWNWOOD	FORT BEND CO.	HARLINGEN	MARSHALL	NORTH TEXAS	SWEETWATER	WACO	WILLIAMSON CO.
Chemical Technology	AAS					▲					
Cloud & Data Center Management	AAS									▲	
Computer Aided Drafting & Design Technology	AAS						▲	▲			
Computer Maintenance Technology	AAS					▲				▲	
Computer Maintenance Technician	CER1					▲					
Home Integration Technology	CER1									▲	
Computer Networking & Security Technology	AAS					▲					
Computer Networking & Systems Administration	AAS	▲		▲			▲	▲		▲	
Computer Networking & Systems Administration	CER2						▲	▲			
Computer Science	AS					▲					
Computer Programming Technology	AAS									▲	
Culinary Arts	AAS	▲				▲				▲	▲
Culinarian	CER2	▲				▲				▲	▲
Culinary Assistant	CER1	▲				▲				▲	▲
Culinary Specialist	CER1	▲				▲				▲	▲
Cyber Security	AAS				▲		▲	▲		▲	
Cyber Security	CER2				▲		▲	▲		▲	▲
Digital Forensics Specialist	ATC									▲	
Database & Web Programming	AAS	▲		▲							
Dental Assistant	CER1					▲				▲	
Dental Hygiene	AAS					▲					
Diesel Equipment Technology - Heavy Truck Specialization	AAS				▲			▲	▲	▲	
Diesel Equipment Technology - Heavy Truck	CER1				▲			▲	▲	▲	
Diesel Equipment Technology - Heavy Truck	CER2							▲	▲	▲	
Diesel Equipment Technology - John Deere Construction & Forestry	AAS									▲	
Diesel Equipment Technology - Off-Highway Specialization	AAS						▲			▲	
Diesel Equipment Technology - Off-Highway Equipment	CER1						▲			▲	
Diesel Equipment Technology - Off-Highway Equipment	CER2				▲		▲			▲	
Digital Media Design	AAS	▲				▲					
Education & Training	AAS					▲					
Education & Training	CER2					▲					
Electrical Construction	CER1									▲	
Electrical Lineworker Technology	AAS				▲		▲			▲	
Electrical Lineworker	CER1				▲		▲			▲	
Electrical Power & Controls	AAS	▲			▲			▲		▲	
Industrial Controls Technology	AAS						▲				

AWARD NAME	AWARD TYPE										
		ABILENE	BRECKENRIDGE	BROWNWOOD	FORT BEND CO.	HARLINGEN	MARSHALL	NORTH TEXAS	SWEETWATER	WACO	WILLIAMSON CO.
Industrial Electrical Systems	CER1										▲
Electromechanical Technology	AAS								▲		
Electromechanical - Technician	CER2								▲		
Electronics Technology	AAS									▲	
EMT - Paramedic	AAS	▲		▲							
Emergency Medical Services - EMT	CER1	▲		▲							
Emergency Medical Services - Advanced EMT (AEMT)	CER1	▲		▲							
Emergency Medical Services - Paramedic	CER2	▲		▲							
Energy Efficiency Specialist	CER1									▲	
Engineering	AS					▲					
Environmental Technology - Compliance	AAS		▲		▲					▲	
Facilities Maintenance & Management	AAS									▲	
Graphics, Gaming & Simulation Programming	AAS					▲					
Graphics, Gaming & Simulation Programming	ATC									▲	
Health Information Technology	AAS	▲				▲					▲
Medical Office Specialist	CER2	▲									
Medical Information Transcriptionist	CER1					▲					
Heating, Ventilation & Air Conditioning Technology	AAS				▲	▲		▲		▲	▲
Heating, Ventilation & Air Conditioning Technology - HVAC Technician	CER1				▲	▲		▲		▲	▲
Industrial Maintenance - Electrical Specialization	AAS						▲	▲			
Mechanic	CER1	▲			▲					▲	▲
Mechanic - Electrical	CER2						▲	▲			
Industrial Maintenance - Mechanical Specialization	AAS	▲			▲					▲	▲
Industrial Systems Technology	CER1					▲					
Instrumentation Technology	AAS									▲	
Laser Electro-Optics	AAS									▲	
Logistics Technology	AAS							▲			
Mathematics	AS					▲					
Mechanical/Electrical Drafting Technology	AAS									▲	
Mechatronics Technology	AAS					▲					
Occupational Safety Compliance Technology	AAS									▲	
Pharmacy Technician	CER2									▲	
Physics	AS					▲					
Plumbing & Pipefitting Technology	CER1									▲	
Precision Machining Technology	AAS				▲	▲	▲	▲		▲	▲
Machining	CER1				▲	▲	▲	▲		▲	▲

AWARD NAME	AWARD TYPE										
		ABILENE	BRECKENRIDGE	BROWNWOOD	FORT BEND CO.	HARLINGEN	MARSHALL	NORTH TEXAS	SWEETWATER	WACO	WILLIAMSON CO.
Process Operations	AAS						▲				
Radiation Protection Technology	AAS									▲	
Radiation Protection Technology - Health Physics	ATC									▲	
Registered Nursing LVN-RN Transition	AAS					▲			▲		
Robotics Technology	AAS				▲					▲	
Software Development Technology	AAS						▲				
Solar Energy Technology	AAS									▲	
Surgical Technology	AAS					▲					
Visual Communication Technology	AAS									▲	
Vocational Nursing	CER2		▲			▲			▲		
Web Design & Development	AAS									▲	
Welding Technology	AAS	▲			▲	▲				▲	▲
Structural Welding	CER1	▲	▲	▲	▲	▲	▲	▲	▲	▲	▲
Structural & Pipe Welding	CER2	▲			▲	▲				▲	▲
Wind Energy Technology	AAS					▲			▲		
Wind Energy Technician	CER1					▲			▲		

## TSTC's Money-Back Guarantee

The premise is simple.  
Get a **degree**. Get a **job**. Or get a **refund**.

We are so confident in the quality of our technical education programs that we guarantee you will find a job within six months of graduation – or your money back.

TSTC has been training and placing Texans in great jobs for over 50 years, but there continues to be a skills gap in highly skilled technicians in the workforce. The Money-Back Guarantee (MBG) reinforces our commitment to prepare and place highly skilled, technically competent students in the workforce.

Associate degree programs eligible for the MBG program include:

- Diesel Equipment (Heavy Truck, John Deere Construction & Forestry and Off-Highway)
- Electrical Lineworker
- Electrical Power & Controls
- Instrumentation
- Welding

For more information, visit [tstc.edu/about/moneybackguarantee](https://tstc.edu/about/moneybackguarantee).

## Academic Core

TSTC's Academic Core can provide you with a broad general understanding of communication skills, critical thinking, inquiry and research, and multiple perspectives about an individual and the world that we live in. With Academic Core classes, you can transfer credits to another public college or university, complete an AAS or AS at TSTC and transfer all the classes as a block to another public college or university, and get your "basics" out of the way. After completing the Academic Core courses at TSTC, you'll receive an institutional certificate of completion.

Academic Core is available at the Harlingen campus.

## Academic Core Completion Certificate

Semester 1	Credits
ENGL 1301 Composition I	3
GOVT 2305 Federal Government (Federal Constitution & topics)	3
ACGM X3XX Creative Arts	3
ACGM X3XX Component Area Option B <sup>1</sup>	3
<b>Semester Total</b>	<b>12</b>

Semester 2	Credits
ENGL 1302 Composition II <sup>2</sup>	3
GOVT 2306 Texas Government (Texas Constitution & topics)	3
HIST 1301 United States History I	3
ACGM X3XX Life and Physical Science Elective	3
ACGM X3XX Component Area Option A <sup>3</sup>	3
<b>Semester Total</b>	<b>15</b>

Semester 3	Credits
ACGM X3XX Life and Physical Science Elective	3
HIST 1302 United States History II	3
ACGM X3XX Gen Ed Mathematics Elective	3
ACGM X3XX Language, Philosophy and Culture Elective	3
ACGM X3XX Gen Ed Social/Behavioral Science Elective	3
<b>Semester Total</b>	<b>15</b>

**Program Total** 42

### Prerequisites

<sup>2</sup> ENGL 1301

Component Area Option A <sup>3</sup> (3 hours)	Credits
BIOL 1106 Biology for Science Majors Laboratory I (lab)	1
BIOL 1107 Biology for Science Majors Laboratory II (lab)	1
BIOL 1108 Biology for Non-Science Majors Laboratory I (lab)	1
BIOL 1109 Biology for Non-Science Majors Laboratory II (lab)	1
BIOL 2101 Anatomy & Physiology I (lab)	1
BIOL 2102 Anatomy & Physiology II (lab)	1
CHEM 1111 General Chemistry I (lab)	1
CHEM 1112 General Chemistry II (lab)	1
ENGL 2321 British Literature (single-semester course)	3
ENGL 2326 American Literature (single-semester course)	3
ENGL 2331 World Literature (single-semester course)	3
PHYS 1101 College Physics Laboratory I (lab)	1
PHYS 1102 College Physics Laboratory II (lab)	1

PHYS 1115 Physical Science Laboratory I (lab)	1
PHYS 1117 Physical Science Laboratory II (lab)	1
PSYC 2314 Lifespan Growth & Development	3

Component Area Option B <sup>1</sup> (3 hours)	Credits
SPCH 1311 Introduction to Speech Communication	3
SPCH 1315 Public Speaking	3
SPCH 1318 Interpersonal Communication	3
SPCH 1321 Business & Professional Communication	3
SPCH 2333 Discussion & Small Group Communication	3

Communication (6 hours)	Credits
ENGL 1301 Composition I	3
ENGL 1302 Composition II	3

Mathematics (3 hours)*	Credits
MATH 1314 College Algebra (3 SCH version)	3
MATH 1316 Plane Trigonometry	3
MATH 1332 Contemporary Mathematics (Quantitative Reasoning)	3
MATH 2312 Pre-Calculus Math (3 SCH version)	3

\*this course includes a 1 hour lab

Life and Physical Science (6 hours)	Credits
BIOL 1306 Biology for Science Majors I (lecture)	3
BIOL 1307 Biology for Science Majors II (lecture)	3
BIOL 1308 Biology for Non-Science Majors (lecture)	3
BIOL 1309 Biology for Non-Science Majors II (lecture)	3
BIOL 2301 Anatomy & Physiology I (lecture)	3
BIOL 2302 Anatomy & Physiology II (lecture)	3
CHEM 1311 General Chemistry I (lecture)	3
CHEM 1312 General Chemistry II (lecture)	3
PHYS 1301 College Physics I (lecture)	3
PHYS 1302 College Physics II (lecture)	3
PHYS 1315 Physical Science I (lecture)	3
PHYS 1317 Physical Science II (lecture)	3

Language, Philosophy and Culture (3 hours)	Credits
ENGL 2321 British Literature (single-semester course)	3
ENGL 2326 American Literature (single-semester course)	3
ENGL 2331 World Literature (single-semester course)	3
PHIL 1304 Introduction to World Religions	3

Creative Arts (3 hours)	Credits
ARTS 1301 Art Appreciation	3
MUSI 1306 Music Appreciation	3

American History (6 hours)	Credits
HIST 1301 United States History I	3
HIST 1302 United States History II	3

Government/Political Science (6 hours)	Credits
GOVT 2305 Federal Government (Federal Constitution & topics)	3
GOVT 2306 Texas Government (Texas Constitution & topics)	3

Social and Behavioral Sciences (3 hours)	Credits
ECON 2301 Principles of Macroeconomics	3
ECON 2302 Principles of Microeconomics	3
PSYC 2301 General Psychology	3
PSYC 2314 Lifespan Growth & Development	3
SOCI 1301 Introduction to Sociology	3

# Agricultural Technology

Agricultural professionals, including farmers and ranchers, must be highly knowledgeable in all aspects of agricultural operations, including business and finance, to be successful in today's global agricultural economy.

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 requires skilled managers and workers in its many areas such as farms, ranches, feed services and government agencies. In this program, students will learn modern techniques essential to profitable operation.

Agricultural Technology is available at the Harlingen campus.



## Agricultural Technology Associate of Applied Science

Semester 1		Credits
AGAH 1401	Animal Science	4
AGMG 1400	Agricultural Policies, Safety and Codes	4
BIOL 1306	Biology for Science Majors I (lecture)	3
BIOL 1106	Biology for Science Majors Laboratory I (lab)	<u>1</u>
Semester Total		12

Semester 2		Credits
AGAH 2413	Principles of Feeds and Feeding	4
AGCR 1403	Crop Science <sup>1</sup>	4
AGME 1415	Farm and Ranch Shop Skills I <sup>2</sup>	<u>4</u>
Semester Total		12

Semester 3		Credits
AGMG 1344	Agricultural Records Management	3
AGCR 2313	Soil and Water Conservation Management	3
AGMG 1311	Introduction to Agribusiness	3
WMGT 1305	Introduction to Wildlife Management	<u>3</u>
Semester Total		12

Semester 4		Credits
AGCR 1341	Forage and Pasture Management <sup>3</sup>	3
AGCR 2305	Entomology	3
MATH 1314	College Algebra	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	<u>3</u>
Semester Total		12

Semester 5		Credits
HALT 2307	Horticultural Food Crops	3
ENGL 1301	Composition I	3
GISC 1311	Introduction to Geographic Information Systems (GIS)	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	<u>3</u>
Semester Total		12

Program Total 60

Prerequisite  
<sup>1,2,3</sup> AGMG 1400

## Aircraft Airframe Technology

Aviation maintenance technicians are a vital part of the aerospace industry workforce, inspecting, servicing and maintaining aircraft worldwide. The Aircraft Airframe specialty trains students specifically in major airframe components and structures such as hydraulics/pneumatics, landing gear systems, sheet metal and composite technology. Airframe technicians are employed by repair stations, contract maintenance facilities, general aviation maintenance, and regional and national airlines. For quicker entry into the industry, an Aircraft Airframe Technician certificate is also available.

Aircraft Airframe Technology is available at the Abilene, Harlingen and Waco campuses.

### Aircraft Airframe Technology Associate of Applied Science

Semester 1	Credits
AERM 1107 Aviation Mathematics	1
AERM 1109 and Aviation Physics	1
AERM 1112 and Aviation Drawings	1
AERM 1315 or Aviation Science	
AERM 1203 Shop Practices	2
AERM 1205 Weight and Balance	2
AERM 1208 Federal Aviation Regulations	2
AERM 1210 Ground Operations	2
AERM 1314 Basic Electricity	3
<b>Semester Total</b>	<b>14</b>
Semester 2	Credits
AERM 1247 Airframe Auxiliary Systems <sup>1</sup>	2
AERM 1345 Airframe Electrical Systems <sup>2</sup>	3
AERM 1350 Landing Gear Systems	3
AERM 1449 Hydraulic, Pneumatic, and Fuel Systems <sup>3</sup>	4
ACGM X3XX Gen Ed Math/Natural Science Elective	3
<b>Semester Total</b>	<b>15</b>
Semester 3	Credits
AERM 1241 Wood, Fabric, and Finishes	2
AERM 1243 Instruments and Navigation/Communication <sup>4</sup>	2
AERM 1253 Aircraft Welding <sup>5</sup>	2
AERM 1254 Aircraft Composites	2
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	3
ACGM X3XX Gen Ed Social/Behavioral Science Elective	3
<b>Semester Total</b>	<b>14</b>
Semester 4	Credits
AERM 1452 Aircraft Sheet Metal <sup>6</sup>	4
AERM 2230 FAA Review - Airframe	2
AERM 2231 Airframe Inspection	2
AERM 2333 Assembly and Rigging	3
ACGM X3XX Gen Ed Elective	3
ACGM X3XX Gen Ed Elective	3
<b>Semester Total</b>	<b>17</b>
<b>Program Total</b>	<b>60</b>

#### Prerequisites

<sup>1</sup> AERM 1109 or AERM 1315

<sup>2</sup> AERM 1314

<sup>3</sup> AERM 1109 or AERM 1315 (Prerequisite or Co-requisite)

<sup>4</sup> AERM 1314

<sup>5</sup> AERM 1203

<sup>6</sup> AERM 1107, AERM 1112, AERM 1203 or AERM 1315, AERM 1203

### Aircraft Airframe Technician Certificate 2

Semester 1	Credits
AERM 1107 Aviation Mathematics	1
AERM 1109 and Aviation Physics	1
AERM 1112 and Aviation Drawings	1
AERM 1315 or Aviation Science	
AERM 1203 Shop Practices	2
AERM 1205 Weight and Balance	2
AERM 1208 Federal Aviation Regulations	2
AERM 1210 Ground Operations	2
AERM 1314 Basic Electricity	3
<b>Semester Total</b>	<b>14</b>
Semester 2	Credits
AERM 1247 Airframe Auxiliary Systems <sup>1</sup>	2
AERM 1345 Airframe Electrical Systems <sup>2</sup>	3
AERM 1350 Landing Gear Systems	3
AERM 1449 Hydraulic, Pneumatic, and Fuel Systems <sup>3</sup>	4
<b>Semester Total</b>	<b>12</b>
Semester 3	Credits
AERM 1241 Wood, Fabric, and Finishes	2
AERM 1243 Instruments and Navigation/Communication <sup>4</sup>	2
AERM 1253 Aircraft Welding <sup>5</sup>	2
AERM 1254 Aircraft Composites	2
<b>Semester Total</b>	<b>8</b>
Semester 4	Credits
AERM 1452 Aircraft Sheet Metal <sup>6</sup>	4
AERM 2230 FAA Review - Airframe	2
AERM 2231 Airframe Inspection	2
AERM 2333 Assembly and Rigging	3
<b>Semester Total</b>	<b>11</b>
<b>Program Total</b>	<b>45</b>

#### Prerequisites

<sup>1</sup> AERM 1109 or AERM 1315

<sup>2</sup> AERM 1314

<sup>3</sup> AERM 1109 or AERM 1315 (Prerequisite or Corequisite)

<sup>5</sup> AERM 1203

<sup>6</sup> AERM 1107, AERM 1112, AERM 1203 or AERM 1315, AERM 1203

# Aircraft Dispatch Technology

TSTC is one of just two colleges in Texas to offer an FAA-approved associate degree in Aircraft Dispatch. Students spend more than 60 percent of their time learning through hands-on training in the College's cutting-edge Aerospace Center, with active hangar facilities, modern classrooms and top-notch training labs. TSTC faculty come to the College with years of personal experience in the field, plus a board of advisors from some of the top names in the business ensures the curriculum stays on track with what industry needs.

Aircraft Dispatch Technology is available at the Waco campus.

## Aircraft Dispatch Technology Associate of Applied Science

### Semester 1

AIRP 1301	Air Navigation	3
AIRP 1307	Aviation Meteorology	3
AIRP 1417	Private Pilot Ground School	4
ACGM X3XX	Gen Ed Math/Natural Science Elective	<u>3</u>
<b>Semester Total</b>		<b>13</b>

### Semester 2

AIRP 1451	Instrument Ground School	4
AIRP 1372	Dispatch Resource Management	3
AIRP 2331	Advanced Meteorology	3
ENGL 1301	Composition I	<u>3</u>
<b>Semester Total</b>		<b>13</b>



### Semester 3

AIRP 2355	Propulsion Systems	3
AIRP 2452	Practical Dispatching I	4
AIRP 2175	Human Factors in Aviation	1
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	<u>3</u>
<b>Semester Total</b>		<b>11</b>

### Semester 4

AIRP 1345	Aviation Safety	3
AIRP 2337	Commercial Ground School	3
AIRP 2453	Practical Dispatching II	4
AVIM 1470	Fundamentals of Air Traffic Control	<u>4</u>
<b>Semester Total</b>		<b>14</b>

### Semester 5

AVIM 2337	Aviation Law	3
ACGM X3XX	Gen Ed Elective	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>		<b>9</b>

**Program Total** **60**

## Aircraft Pilot Training Technology

With aviation experience dating back 50 years, TSTC is the single largest provider of aerospace programs in Texas. Students get a first-class education with hands-on training and flying time in a variety of aircraft, as well as training on top-notch multi-engine simulators, worldwide weather terminals and more. The two-year Aircraft Pilot Training associate degree program is FAA-approved under Part 141 of the Federal Air Regulations and offers two specializations—airplane (fixed wing) and helicopter (rotary). Students spend more than 60 percent of their time in hands-on activities, learning by doing. All Aircraft Pilot Training students must fulfill requirements for a Class II flight physical and provide the Admissions and Records Office with a current Class II Medical record. All new students must also have successfully completed all sections of the Texas Higher Education Assessment (THEA) test and all remedial courses before registering for classes in the APT program. Flight costs vary per term and are subject to change due to variables such as fluctuating fuel and flight-time costs. For quicker entry into the industry, certificates in Commercial Pilot-Helicopter and Multi-Engine Aircraft Pilot are available.

Aircraft Pilot Training is available at the Waco campus.

### Aircraft Pilot Training Technology- Airplane Specialization Associate of Applied Science

Semester 1		Credits
AIRP 1301	Air Navigation	3
AIRP 1307	Aviation Meteorology	3
AIRP 1417	Private Pilot Ground School	4
AIRP 1215	Private Flight	2
Semester Total		12

Semester 2		Credits
AIRP 2250	Instrument Flight <sup>1</sup>	2
AIRP 2331	Advanced Meteorology	3
AIRP 1451	Instrument Ground School	4
MATH 1332	Contemporary Mathematics (Quantitative Reasoning)	3
Semester Total		12



Semester 3		Credits
AIRP 2355	Propulsion Systems	3
AIRP 1343	Aerodynamics	3
ENGL 1301	Composition I	3
ACGM X3XX	Gen Ed Elective	3
Semester Total		12

Semester 4		Credits
AIRP 1345	Aviation Safety	3
AIRP 2337	Commercial Ground School	3
AIRP 2239	Commercial Flight <sup>2</sup>	2
AIRP 1175	Intermediate Flight <sup>3</sup>	1
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	3
Semester Total		12

Semester 5		Credits
AIRP 2175	Human Factors in Aviation	1
AVIM 2337	Aviation Law	3
AIRP 2236	Certified Flight Instructor - Flight <sup>4</sup>	2
AIRP 2251	or Multiengine Flight <sup>5</sup>	
AIRP 2275	or Agricultural Aircraft Operations Flight	
AIRP 2349	Instructor Ground School	3
AIRP 2375	or Agricultural Aircraft Operations Ground School	
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	3
Semester Total		12

Program Total 60

#### Prerequisites

<sup>1,3,5</sup> AIRP 1215

<sup>2</sup> AIRP 2250

<sup>4</sup> AIRP 2239

## Aircraft Pilot Training Technology- Helicopter Specialization Associate of Applied Science

### Semester 1

AIRP 1301	Air Navigation	3
AIRP 1307	Aviation Meteorology	3
AIRP 1417	Private Pilot Ground School	4
AIRP 1215	Private Flight	<u>2</u>
<b>Semester Total</b>		<b>12</b>

### Semester 2

AIRP 2250	Instrument Flight <sup>1</sup>	2
AIRP 2331	Advanced Meteorology	3
AIRP 1471	Helicopter Instrument Ground School	4
MATH 1332	Contemporary Mathematics (Quantitative Reasoning)	<u>3</u>
<b>Semester Total</b>		<b>12</b>

### Semester 3

AIRP 2376	Helicopter Propulsion Systems	3
AIRP 1373	Helicopter Aerodynamics	3
ENGL 1301	Composition I	3
ACGM X3XX	Gen Ed Elective	<u>3</u>
<b>Semester Total</b>		<b>12</b>

### Semester 4

AIRP 1345	Aviation Safety	3
AIRP 2337	Commercial Ground School	3
AIRP 2273	Helicopter Commercial Flight <sup>2</sup>	2
AIRP 2274	Helicopter Certified Flight Instructor <sup>3</sup>	2
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>		<b>13</b>

### Semester 5

AIRP 2175	Human Factors in Aviation	1
AVIM 2337	Aviation Law	3
AIRP 2371	Helicopter Instructor Ground School	3
AIRP 2172	Flight Instructor-Instrument Helicopter	1
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	<u>3</u>
<b>Semester Total</b>		<b>11</b>

**Program Total** **60**

### Prerequisites

<sup>1</sup> AIRP 1215

<sup>2</sup> AIRP 2250

<sup>3</sup> AIRP 2273 (Prerequisite or Corequisite)



## Aircraft Powerplant Technology

Engine maintenance facilities, contract maintenance, general aviation operators, and regional and national airlines employ technicians specializing in powerplant accessories, components, and reciprocating and turbine engine technology. Aircraft Powerplant Technology students learn basic aviation knowledge, shop practices, aircraft engines and electrical, troubleshooting and overhaul. For quicker entry into the industry, an Aircraft Powerplant Technology certificate is available.

Aircraft Powerplant Technology is available at the Abilene, Harlingen and Waco campuses.

### Aircraft Powerplant Technology Associate of Applied Science

Semester 1	Credits
AERM 1107 Aviation Mathematics	1
AERM 1109 <i>and</i> Aviation Physics	1
AERM 1112 <i>and</i> Aviation Drawings	1
AERM 1315 <i>or</i> Aviation Science	
AERM 1203 Shop Practices	2
AERM 1205 Weight and Balance	2
AERM 1208 Federal Aviation Regulations	2
AERM 1210 Ground Operations	2
AERM 1314 Basic Electricity	<u>3</u>
<b>Semester Total</b>	<b>14</b>
Semester 2	Credits
AERM 1351 Aircraft Turbine Engine Theory <sup>1</sup>	3
AERM 1357 Fuel Metering and Induction Systems	3
AERM 1444 Aircraft Reciprocating Engines <sup>2</sup>	4
AERM 1456 Aircraft Powerplant Electrical <sup>3</sup>	4
ACGM X3XX Gen Ed Math/Natural Science Elective	<u>3</u>
<b>Semester Total</b>	<b>17</b>
Semester 3	Credits
AERM 1240 Aircraft Propellers <sup>4</sup>	2
AERM 2341 Powerplant and Auxiliary Power Units	3
AERM 2351 Aircraft Turbine Engine Overhaul <sup>5</sup>	3
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	3
ACGM X3XX Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>	<b>14</b>
Semester 4	Credits
AERM 2234 FAA Review - Powerplant	2
AERM 2352 Aircraft Powerplant Inspection	3
AERM 2447 Aircraft Reciprocating Engine Overhaul <sup>6</sup>	4
ACGM X3XX Gen Ed Elective	3
ACGM X3XX Gen Ed Elective	<u>3</u>
<b>Semester Total</b>	<b>15</b>
<b>Program Total</b>	<b>60</b>

#### Prerequisites

<sup>1,2</sup> AERM 1109 or AERM 1315

<sup>3</sup> AERM 1314

<sup>4</sup> AERM 1109 or AERM 1315

<sup>5</sup> AERM 1351

<sup>6</sup> AERM 1444

### Aircraft Powerplant Technician Certificate 2

Semester 1	Credits
AERM 1107 Aviation Mathematics	1
AERM 1109 <i>and</i> Aviation Physics	1
AERM 1112 <i>and</i> Aviation Drawings	1
AERM 1315 <i>or</i> Aviation Science	
AERM 1203 Shop Practices	2
AERM 1205 Weight and Balance	2
AERM 1208 Federal Aviation Regulations	2
AERM 1210 Ground Operations	2
AERM 1314 Basic Electricity	<u>3</u>
<b>Semester Total</b>	<b>14</b>
Semester 2	Credits
AERM 1351 Aircraft Turbine Engine Theory <sup>1</sup>	3
AERM 1357 Fuel Metering and Induction Systems	3
AERM 1444 Aircraft Reciprocating Engines <sup>2</sup>	4
AERM 1456 Aircraft Powerplant Electrical <sup>3</sup>	<u>4</u>
<b>Semester Total</b>	<b>14</b>
Semester 3	Credits
AERM 1240 Aircraft Propellers <sup>4</sup>	2
AERM 2341 Powerplant and Auxiliary Power Units	3
AERM 2351 Aircraft Turbine Engine Overhaul <sup>5</sup>	<u>3</u>
<b>Semester Total</b>	<b>8</b>
Semester 4	Credits
AERM 2234 FAA Review - Powerplant	2
AERM 2352 Aircraft Powerplant Inspection	3
AERM 2447 Aircraft Reciprocating Engine Overhaul <sup>6</sup>	<u>4</u>
<b>Semester Total</b>	<b>9</b>
<b>Program Total</b>	<b>45</b>

#### Prerequisites

<sup>1,2</sup> AERM 1109 or AERM 1315

<sup>3</sup> AERM 1314

<sup>4</sup> AERM 1109 or AERM 1315

<sup>5</sup> AERM 1351

<sup>6</sup> AERM 1444

# Air Traffic Controller

TSTC is one of just 36 schools nationwide and the only public college in Texas to offer the Federal Aviation Administration's Air Traffic Collegiate Training Initiative through its Air Traffic Control program. Students who complete the training can be recommended to the FAA for employment and, if hired, will attend the FAA Academy in Oklahoma City for initial training and screening with the FAA. Upon successful completion of the academy, where TSTC has a 90-plus percent pass rate, they will be assigned to their first facility for specific training to reach Certified Professional Controller (CPC). Students at TSTC, which is the largest provider of aerospace education in Texas, get the advantage of an FAA-experienced staff and an advisory committee of industry leaders. In addition, students take classes and labs in the College's 82,500-square-foot, cutting-edge Aerospace Center.

Air Traffic Controller is offered at the Waco campus.



## Air Traffic Controller Associate of Applied Science

Semester 1		Credits
AIRP 1301	Air Navigation	3
AIRP 1307	Aviation Meteorology	3
AVIM 1470	Fundamentals of Air Traffic Control	4
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	<u>3</u>
Semester Total		13

Semester 2		Credits
AIRP 2331	Advanced Meteorology	3
AIRP 1372	Dispatch Resource Management	3
AVIM 1371	Control Tower I <sup>1</sup>	3
ENGL 1301	Composition I	<u>3</u>
Semester Total		12

Semester 3		Credits
AVIM 1375	Introduction to Terminal Operations <sup>2</sup>	3
AVIM 2372	Control Tower II <sup>3</sup>	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	3
ACGM X3XX	Gen Ed Math/Natural Science Elective	<u>3</u>
Semester Total		12

Semester 4		Credits
AIRP 1417	Private Pilot Ground School	4
AVIM 1377	Enroute Operations I <sup>4</sup>	3
AVIM 2373	Advanced Terminal Operations <sup>5</sup>	3
ACGM X3XX	Gen Ed Elective	<u>3</u>
Semester Total		13

Semester 5		Credits
AIRP 1451	Instrument Ground School	4
AIRP 2175	Human Factors in Aviation	1
AVIM 1376	Enroute Operations II <sup>6</sup>	3
AVIM 2270	Control Tower Operations <sup>7</sup>	<u>2</u>
Semester Total		10

Program Total	60
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### Prerequisites

<sup>1</sup> AVIM 1470

<sup>2</sup> AVIM 1270 or AVIM 1470

<sup>3</sup> AVIM 1371

<sup>4</sup> AVIM 1270 or AVIM 1470

<sup>5</sup> AVIM 2372, AVIM 1375

<sup>6</sup> AVIM 1377

<sup>7</sup> AVIM 2373, AVIM 1375

## Architectural Design & Engineering Graphics Technology

The Architectural Design & Engineering Graphics Technology program works with designers and engineers to convert their ideas and concepts for new products and designs into accurate drawings that specify size, shape, materials and specifications. These drawings are then used by professionals in manufacturing, consulting and construction to produce the desired product or structure. Designs are created using computer-aided drafting (CAD) equipment. Solid modeling and parametric concepts are introduced and utilized early in the program and throughout the curriculum.

Architectural Design & Engineering Graphics Technology is available at the Abilene, Brownwood, Harlingen and Sweetwater campuses.

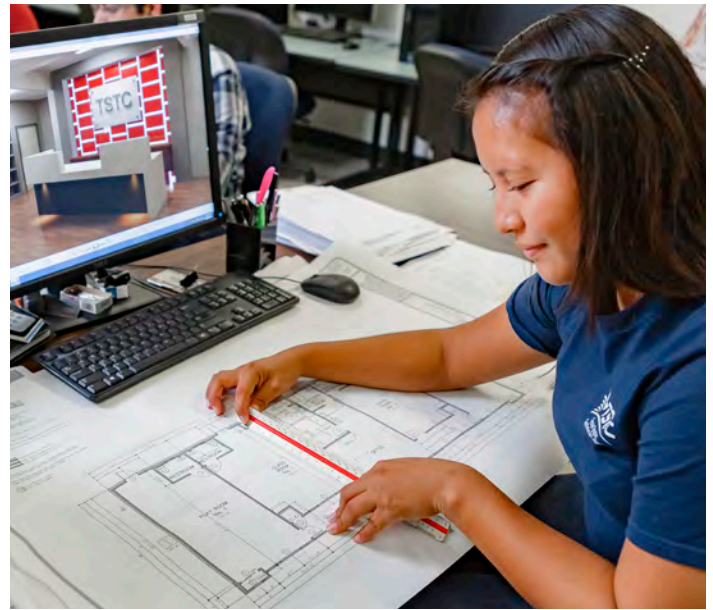
### Architectural Design & Engineering Graphics Technology

#### Associate of Applied Science

Semester 1		Credits
DFTG 1309	Basic Computer-Aided Drafting	3
DFTG 1345	Parametric Modeling and Design	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Course	3
MATH 1314	College Algebra	<u>3</u>
	<b>Semester Total</b>	<b>12</b>

Semester 2		Credits
DFTG 1333	Mechanical Drafting <sup>1</sup>	3
DFTG 1317	Architectural Drafting - Residential <sup>2</sup>	3
DFTG 2319	Intermediate Computer-Aided Drafting <sup>3</sup>	3
ENGL 1301	Composition I	<u>3</u>
	<b>Semester Total</b>	<b>12</b>

Semester 3		Credits
DFTG 1357	Specialized Intermediate Computer-Aided Drafting (CAD) <sup>4</sup>	3
INDS 1319	Technical Drawing for Interior Designers <sup>5</sup>	3
DFTG 2330	Civil Drafting <sup>6</sup>	3
ACGM X3XX	Gen Ed Speech Elective	<u>3</u>
	<b>Semester Total</b>	<b>12</b>



Semester 4		Credits
DFTG 2335	Advanced Technologies in Mechanical Design and Drafting <sup>7</sup>	3
ARCE 1321	Architectural Illustrations <sup>8</sup>	3
DFTG 2321	Topographical Drafting <sup>9</sup>	3
MCHN 1326	or Introduction to Computer-Aided Manufacturing (CAM) <sup>10</sup>	
PSYC 2301	General Psychology	<u>3</u>
	<b>Semester Total</b>	<b>12</b>

Semester 5		Credits
DFTG 2338	Final Project - Advanced Drafting (Mechanical) <sup>11</sup>	3
ARCE 1352	Structural Drafting (Arch. Commercial)	3
DFTG 2332	Advanced Computer-Aided Drafting (Civil) <sup>12</sup>	3
GISC 1301	Cartography and Geography in Geographical Information Systems (GIS) and Global Positioning Systems <sup>13</sup>	<u>3</u>
DFTG 2357	or Advanced Technologies in Pipe Design and Drafting <sup>14</sup>	
DFTG 1329	or Electro-Mechanical Drafting <sup>15</sup>	
	<b>Semester Total</b>	<b>12</b>

**Program Total** **60**

#### Prerequisites

<sup>1,2</sup> DFTG 1305 or DFTG 1309

<sup>3</sup> DFTG 1309 (Prerequisite or Corequisite)

<sup>4</sup> DFTG 1333

<sup>5</sup> DFTG 1317

<sup>6</sup> SRVY 1301 or POFT 1301 or DFTG 2319

<sup>7,9,13</sup> DFTG 2319

<sup>8</sup> DFTG 1317

<sup>10</sup> ENTC 1371 or DFTG 1309

<sup>11,12</sup> DFTG 2319 (Prerequisite or Corequisite)

<sup>14</sup> DFTG 2335

<sup>15</sup> DFTG 1309

# Architectural/Civil Drafting Technology

Whether it's as large as a high-rise building or as small as a shed, nothing can be built without first envisioning a plan — a blueprint, sketch or drawing detailing everything a project needs for completion. Drafting is a universal language; it is the common language used in many major industries as a first step to bringing this vision to life. TSTC Architectural/Civil Drafting students prepare for drafting applications in commercial architecture; building structures; mechanical, electrical and plumbing systems for buildings; site work; and many other areas of construction-related drafting. During your educational training at TSTC, you will use the latest in computer software and hardware to gain valuable experience utilizing today's most popular drafting tool — Computer-Aided Drafting, or CAD, systems.

Architectural/Civil Drafting is available at the Waco campus.



## Architectural/Civil Drafting Technology Associate of Applied Science

Semester 1		Credits
DFTG 1305	Technical Drafting	3
DFTG 1309	Basic Computer-Aided Drafting	3
DFTG 1370	Technical Mathematics Applications in Drafting	3
ITSC 1309	Integrated Software Applications I	3
ACGM X3XX	Gen Ed Elective	<u>3</u>
<b>Semester Total</b>		<b>15</b>
Semester 2		Credits
ARCE 1303	Architectural Materials and Methods of Construction	3
ARCE 1342	Codes, Specifications, and Contract Documents	3
DFTG 1317	Architectural Drafting - Residential <sup>1</sup>	3
DFTG 2319	Intermediate Computer-Aided Drafting <sup>2</sup>	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>		<b>15</b>

Semester 3		Credits
DFTG 2328	Architectural Drafting - Commercial <sup>3</sup>	3
DFTG 2331	Advanced Technologies in Architectural Design and Drafting <sup>4</sup>	3
SRVY 1301	Introduction to Surveying	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	3
ACGM X3XX	Gen Ed Elective	<u>3</u>
<b>Semester Total</b>		<b>15</b>
Semester 4		Credits
ARCE 1352	Structural Drafting	3
ARCE 2352	Mechanical and Electrical Systems <sup>5</sup>	3
DFTG 2330	Civil Drafting <sup>6</sup>	3
DFTG 2338	Final Project - Advanced Drafting <sup>7</sup>	3
ACGM X3XX	Gen Ed Math/Natural Science Elective	<u>3</u>
<b>Semester Total</b>		<b>15</b>
<b>Program Total</b>		<b>60</b>

### Prerequisites

<sup>1</sup> DFTG 1305, DFTG 1309 (Prerequisite or Corequisite)

<sup>2</sup> DFTG 1309 (Prerequisite or Corequisite)

<sup>3,4</sup> ARCE 1303, ARCE 1342, DFTG 1317, DFTG 2319

<sup>5</sup> DFTG 2328, DFTG 2331

<sup>6</sup> SRVY 1301 or POFI 1301 or DFTG 2319

<sup>7</sup> DFTG 2319 (Prerequisite or Corequisite)

## Auto Collision & Management Technology

According to autonews.com, auto collision repair is a \$35 billion-a-year business in the United States. That's why the auto body industry is a great career choice for those seeking a relatively stable job with above-average wages. At TSTC, you'll get the crucial hands-on experience that can make you irresistible to employers. The Auto Collision program offers a specialization in auto body refinishing, collision repair and sheet metal fabrication. For quicker entry into the industry, certificate programs are available. Advanced certificate programs are also available.

Auto Collision & Management Technology is available at the Harlingen and Waco campuses.

### Auto Collision & Management Technology-Refinishing Specialization Associate of Applied Science

Semester 1		Credits
ABDR 1215	Vehicle Trim and Hardware	2
ABDR 1349	Automotive Plastic and Sheet Molded Compound Repair	3
ABDR 1371	Basic Paint Techniques, Equipment & Environmental Practices	3
ABDR 1203	Vehicle Design and Structural Analysis	2
ENGL 1301	Composition I	<u>3</u>
	<b>Semester Total</b>	<b>13</b>

Semester 2		Credits
ABDR 1419	Basic Metal Repair	4
ABDR 1458	Intermediate Refinishing <sup>1</sup>	4
ABDR 1431	Basic Refinishing <sup>2</sup>	4
ACGM X3XX	Gen Ed Math/Natural Science Elective	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	<u>3</u>
	<b>Semester Total</b>	<b>18</b>

Semester 3		Credits
ABDR 2255	Collision Repair Estimating	2
ABDR 2371	Refinishing Process I <sup>3</sup>	3
ABDR 2449	Advanced Refinishing <sup>4</sup>	4
ABDR 2551	Specialized Refinishing Techniques	5
ACGM x3xx	Gen Ed Humanities/Fine Arts Elective	<u>3</u>
	<b>Semester Total</b>	<b>17</b>

Semester 4		Credits
ABDR 2357	Collision Repair Shop Management	3
ABDR 2270	Advanced Application Processes of Refinishing	2
ABDR 2281	or Cooperative Education - Auto Body/Collision and Repair Technology/Technician	
ABDR 2453	Color Analysis and Paint Matching	4
ACGM X3XX	Gen Ed Elective	<u>3</u>
	<b>Semester Total</b>	<b>12</b>

**Program Total** **60**

#### Prerequisites

<sup>1,2</sup> ABDR 1371

<sup>3,4</sup> ABDR 1458, ABDR 1431

## Auto Collision Refinishing Certificate 1

Semester 1		Credits
ABDR 1203	Vehicle Design and Structural Analysis	2
ABDR 1215	Vehicle Trim and Hardware	2
ABDR 1349	Automotive Plastic and Sheet Molded Compound Repair	3
ABDR 1371	Basic Paint Techniques, Equipment & Environmental Practices	3
TECM 1303	Technical Calculations	<u>3</u>
	<b>Semester Total</b>	<b>13</b>

Semester 2		Credits
ABDR 1419	Basic Metal Repair	4
ABDR 1431	Basic Refinishing <sup>1</sup>	4
ABDR 1458	Intermediate Refinishing <sup>2</sup>	4
POFT 1301	Business English	<u>3</u>
	<b>Semester Total</b>	<b>15</b>

Semester 3		Credits
ABDR 2371	Refinishing Process I <sup>3</sup>	3
ABDR 2449	Advanced Refinishing <sup>4</sup>	4
ABDR 2255	Collision Repair Estimating	2
ABDR 2551	Specialized Refinishing Techniques	<u>5</u>
	<b>Semester Total</b>	<b>14</b>

**Program Total** **42**

#### Prerequisites

<sup>1,2</sup> ABDR 1371

<sup>3,4</sup> ABDR 1458, ABDR 1431

## Auto Collision Refinishing Advanced Technical Certificate

Semester 1		Credits
ABDR 1431	Basic Refinishing <sup>1</sup>	4
ABDR 1458	Intermediate Refinishing <sup>2</sup>	<u>4</u>
	<b>Semester Total</b>	<b>8</b>

Semester 2		Credits
ABDR 2371	Refinishing Process I <sup>3</sup>	3
ABDR 2449	Advanced Refinishing <sup>4</sup>	4
ABDR 2551	Specialized Refinishing Techniques	<u>5</u>
	<b>Semester Total</b>	<b>12</b>

Semester 3		Credits
ABDR 2270	Advanced Application Processes of Refinishing	2
ABDR 2281	or Cooperative Education - Auto Body/Collision and Repair Technology/Technician	
ABDR 2453	Color Analysis and Paint Matching	<u>4</u>
	<b>Semester Total</b>	<b>6</b>

**Program Total** **26**

#### Prerequisites

<sup>1,2</sup> ABDR 1371

<sup>3,4</sup> ABDR 1458, ABDR 1431

## Auto Collision & Management Technology Repair Specialization Associate of Applied Science

Semester 1	Credits
ABDR 1215 Vehicle Trim and Hardware	2
ABDR 1349 Automotive Plastic and Sheet Molded Compound Repair	3
ABDR 1371 Basic Paint Techniques, Equipment & Environmental Practices	3
ABDR 1203 Vehicle Design and Structural Analysis	2
ENGL 1301 Composition I	<u>3</u>
<b>Semester Total</b>	<b>13</b>

Semester 2	Credits
ABDR 2255 Collision Repair Estimating	2
ABDR 2435 Structural Analysis and Damage Repair IV	4
ABDR 1307 Collision Repair Welding	3
ACGM X3XX Gen Ed Math/Natural Science Elective	3
ACGM X3XX Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>	<b>15</b>

Semester 3	Credits
ABDR 1419 Basic Metal Repair	4
ABDR 1323 Front and Rear Wheel Alignment	3
ABDR 2447 Advanced Collision Repair Welding	4
ABDR 2359 Structural Sectioning <sup>1</sup>	3
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	<u>3</u>
<b>Semester Total</b>	<b>17</b>

Semester 4	Credits
ABDR 2357 Collision Repair Shop Management	3
ABDR 2502 Auto Body Mechanical and Electrical Service	5
ABDR 1442 Structural Analysis and Damage Repair II <sup>2</sup>	4
ABDR 1481 or Cooperative Education - Auto Body/Collision and Repair Technology/Technician	
ACGM X3XX Gen Ed Elective	<u>3</u>
<b>Semester Total</b>	<b>15</b>

**Program Total** 60

Prerequisites

<sup>1</sup> ABDR 1307, ABDR 1419, ABDR 2435 (Prerequisite or Corequisite)

<sup>2</sup> ABDR 1323, ABDR 1419 or ABDR 2435

## Auto Collision Repair Advanced Technology Certificate

Semester 1	Credits
ABDR 1307 Collision Repair Welding	3
ABDR 2435 Structural Analysis and Damage Repair IV	<u>4</u>
<b>Semester Total</b>	<b>7</b>

Semester 2	Credits
ABDR 1323 Front and Rear Wheel Alignment	3
ABDR 2447 Advanced Collision Repair Welding	4
ABDR 2359 Structural Sectioning <sup>1</sup>	<u>3</u>
<b>Semester Total</b>	<b>10</b>

Semester 3	Credits
ABDR 1442 Structural Analysis and Damage Repair II <sup>2</sup>	4
ABDR 1481 or Cooperative Education - Auto Body/Collision and Repair Technology/Technician	
ABDR 2502 Auto Body Mechanical and Electrical Service	<u>5</u>
<b>Semester Total</b>	<b>9</b>

**Program Total** 26

Prerequisites

<sup>1</sup> ABDR 1307, ABDR 1419, ABDR 2435 (Prerequisite or Corequisite)

<sup>2</sup> ABDR 1323, ABDR 1419 or ABDR 2435

## Auto Collision & Management Technology Auto Collision Repair Certificate 1

Semester 1	Credits
ABDR 1203 Vehicle Design and Structural Analysis	2
ABDR 1215 Vehicle Trim and Hardware	2
ABDR 1349 Automotive Plastic and Sheet Molded Compound Repair	3
ABDR 1371 Basic Paint Techniques, Equipment & Environmental Practices	3
TECM 1303 Technical Calculations	<u>3</u>
<b>Semester Total</b>	<b>13</b>

Semester 2	Credits
ABDR 1307 Collision Repair Welding	3
ABDR 1359 Sheet Metal Fabrication I	3
ABDR 2255 Collision Repair Estimating	2
ABDR 2435 Structural Analysis and Damage Repair IV	<u>4</u>
<b>Semester Total</b>	<b>12</b>

Semester 3	Credits
ABDR 1323 Front and Rear Wheel Alignment	3
ABDR 1419 Basic Metal Repair	4
POFT 1301 Business English	<u>3</u>
<b>Semester Total</b>	<b>10</b>

**Program Total** 35

## Auto Collision Repair Certificate 2

<b>Semester 1</b>		<b>Credits</b>
ABDR 1203	Vehicle Design and Structural Analysis	2
ABDR 1215	Vehicle Trim and Hardware	2
ABDR 1349	Automotive Plastic and Sheet Molded Compound Repair	3
ABDR 1371	Basic Paint Techniques, Equipment & Environmental Practices	<u>3</u>
<b>Semester Total</b>		<b>10</b>
<b>Semester 2</b>		<b>Credits</b>
ABDR 1307	Collision Repair Welding	3
ABDR 2255	Collision Repair Estimating	2
ABDR 2435	Structural Analysis and Damage Repair IV	4
TECM 1303	Technical Calculations	<u>3</u>
<b>Semester Total</b>		<b>12</b>
<b>Semester 3</b>		<b>Credits</b>
ABDR 1323	Front and Rear Wheel Alignment	3
ABDR 1359	Sheet Metal Fabrication I	3
ABDR 1419	Basic Metal Repair	4
POFT 1301	Business English	<u>3</u>
<b>Semester Total</b>		<b>13</b>
<b>Semester 4</b>		<b>Credits</b>
ABDR 1442	Structural Analysis and Damage Repair II <sup>1</sup>	4
ABDR 1481	or Cooperative Education - Auto Body/Collision and Repair Technology/Technician	
ABDR 2359	Structural Sectioning <sup>2</sup>	3
ABDR 2502	Auto Body Mechanical and Electrical Service	<u>5</u>
<b>Semester Total</b>		<b>12</b>
<b>Program Total</b>		<b>47</b>

### Prerequisites

<sup>1</sup> ABDR 1323, ABDR 1419 or ABDR 2435

<sup>2</sup> ABDR 1307, ABDR 1419, ABDR 2435 (Prerequisite or Corequisite)



# Automotive Technology

The Automotive program at TSTC features approximately \$3 million worth of the latest equipment and laboratories. The program is accredited by ASE Program Accreditation, and instructors are certified by Automotive Service Excellence and bring years of industry experience to the classroom. Students receive intensive, hands-on training, spending more than 60 percent of their time in labs, learning by doing, and the curriculum is guided by an advisory board of industry leaders, helping to ensure that the training students receive is right on target with what the industry needs.

Automotive Technology offers specializations in general automotive, maintenance and light repair, advanced vehicle fuel systems, Toyota T-TEN, and MOPAR CAP specialty programs. For quicker entry into the industry, certificates are available.

Automotive Technology is available at the Harlingen, Sweetwater and Waco campuses.



## Automotive Technology Associate of Applied Science

Semester 1		Credits
AUMT 1305	Introduction to Automotive Technology	3
AUMT 1307	Automotive Electrical Systems	3
AUMT 1416	Automotive Suspension and Steering Systems	4
ACGM X3XX	Gen Ed Elective	<u>3</u>
	<b>Semester Total</b>	<b>13</b>

Semester 2		Credits
AUMT 1310	Automotive Brake Systems	3
AUMT 1345	Automotive Climate Control Systems <sup>1</sup>	3
AUMT 1419	Automotive Engine Repair <sup>2</sup>	4
ACGM X3XX	Gen Ed Math/Natural Science Elective	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	<u>3</u>
	<b>Semester Total</b>	<b>16</b>

Semester 3		Credits
AUMT 2321	Automotive Electrical Diagnosis and Repair	3
AUMT 2413	Automotive Drive Train and Axles <sup>3</sup>	4
AUMT 2417	Automotive Engine Performance Analysis I <sup>4</sup>	4
ACGM X3XX	Gen Ed Elective	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	<u>3</u>
	<b>Semester Total</b>	<b>17</b>

Semester 4		Credits
AUMT 2302	Automotive Compression Ignition Engines & Fuel Systems <sup>5</sup>	3
	or Automotive Service <sup>6</sup>	
AUMT 2328	or Automotive Alternative Fuels	
AUMT 2357	Automotive Electronics <sup>7</sup>	3
AUMT 2337	Automotive Automatic Transmission and Transaxle <sup>8</sup>	4
AUMT 2425		
AUMT 2434	Automotive Engine Performance Analysis II <sup>9</sup>	<u>4</u>
	<b>Semester Total</b>	<b>14</b>

**Program Total** **60**

### Prerequisites

<sup>1</sup> AUMT 1201 or AUMT 1305 (Prerequisite),

AUMT 1307 (Prerequisite or Corequisite)

<sup>2</sup> AUMT 1305

<sup>3</sup> AUMT 1310

<sup>4</sup> AUMT 1201 or AUMT 1305, AUMT 1307,

AUMT 1419 (Prerequisite or Corequisite)

<sup>5</sup> AUMT 2417

<sup>6,7,8,9</sup> AUMT 2413, AUMT 2417, AUMT 2321

## Automotive Technician Certificate 2

Semester 1		Credits
AUMT 1305	Introduction to Automotive Technology	3
AUMT 1307	Automotive Electrical Systems	3
AUMT 1416	Automotive Suspension and Steering Systems	4
Semester Total		10
Semester 2		Credits
AUMT 1310	Automotive Brake Systems	3
AUMT 1345	Automotive Climate Control Systems <sup>1</sup>	3
AUMT 1419	Automotive Engine Repair <sup>2</sup>	4
Semester Total		10
Semester 3		Credits
AUMT 2321	Automotive Electrical Diagnosis and Repair	3
AUMT 2413	Automotive Drive Train and Axles <sup>3</sup>	4
AUMT 2417	Automotive Engine Performance Analysis I <sup>4</sup>	4
Semester Total		11
Semester 4		Credits
AUMT 2302	Automotive Compression Ignition Engines & Fuel Systems <sup>5</sup>	3
AUMT 2328	or Automotive Service <sup>6</sup>	
AUMT 2357	or Automotive Alternative Fuels	
AUMT 2337	Automotive Electronics <sup>7</sup>	3
AUMT 2425	Automotive Automatic Transmission and Transaxle <sup>8,4</sup>	4
AUMT 2434	Automotive Engine Performance Analysis II <sup>9</sup>	4
Semester Total		14
Program Total		45

### Prerequisites

<sup>1</sup> AUMT 1201 or AUMT 1305 (Prerequisite),  
AUMT 1307 (Prerequisite or Corequisite)

<sup>2</sup> AUMT 1305

<sup>3</sup> AUMT 1310

<sup>4</sup> AUMT 1201 or AUMT 1305, AUMT 1307, AUMT 1419

<sup>5</sup> AUMT 2417

<sup>6,7,8,9</sup> AUMT 2413, AUMT 2417, AUMT 2321

## Automotive Technology Chrysler Specialization Certificate 2 - Waco only

Semester 1		Credits
AUMT 1201	Introduction and Theory of Automotive Technology	2
AUMT 1310	Automotive Brake Systems	3
AUMT 1416	Automotive Suspension and Steering Systems	4
Semester Total		9
Semester 2		Credits
AUMT 1166	Practicum (or Field Experience) - Automobile/ Automotive Mechanics Technology/Technician	1
AUMT 1307	Automotive Electrical Systems	3
AUMT 1345	Automotive Climate Control Systems <sup>1</sup>	3
AUMT 1419	Automotive Engine Repair <sup>2</sup>	4
Semester Total		11



Semester 3		Credits
AUMT 2188	Internship (or Field Experience) - Automobile/ Automotive Mechanics Technology/Technician	1
AUMT 2321	Automotive Electrical Diagnosis and Repair	3
AUMT 2413	Automotive Drive Train and Axles <sup>3</sup>	4
AUMT 2417	Automotive Engine Performance Analysis I <sup>4</sup>	4
Semester Total		12
Semester 4		Credits
AUMT 2289	Internship (or Field Experience) - Automobile/ Automotive Mechanics Technology/Technician <sup>5</sup>	2
AUMT 2337	Automotive Electronics	3
AUMT 2425	Automotive Automatic Transmission and Transaxle <sup>6,4</sup>	4
AUMT 2434	Automotive Engine Performance Analysis II <sup>7</sup>	4
Semester Total		13
Program Total		45

### Prerequisites

<sup>1</sup> AUMT 1201 or AUMT 1305 (Prerequisite),  
AUMT 1307 (Prerequisite or Corequisite)

<sup>2</sup> AUMT 1305

<sup>3</sup> AUMT 1310

<sup>4</sup> AUMT 1201 or AUMT 1305, AUMT 1307,  
AUMT 1419 (Prerequisite or Corequisite)

<sup>5</sup> AUMT 2321

<sup>6,7</sup> AUMT 2413, AUMT 2417, AUMT 2321

## Automotive Maintenance & Light Repair Certificate 1

Semester 1		Credits
AUMT 1305	Introduction to Automotive Technology	3
AUMT 1307	Automotive Electrical Systems	3
AUMT 1416	Automotive Suspension and Steering Systems	4
Semester Total		10

<b>Semester 2</b>		<b>Credits</b>
AUMT 1310	Automotive Brake Systems	3
AUMT 1312	Basic Automotive Service	3
AUMT 1345	Automotive Climate Control Systems <sup>1</sup>	3
AUMT 1419	Automotive Engine Repair <sup>2</sup>	4
<b>Semester Total</b>		<b>13</b>

<b>Semester 3</b>		<b>Credits</b>
AUMT 2413	Automotive Drive Train and Axles <sup>3</sup>	4
AUMT 2417	Automotive Engine Performance Analysis I <sup>4</sup>	4
AUMT 2321	Automotive Electrical Diagnosis and Repair	3
<b>Semester Total</b>		<b>11</b>

<b>Program Total</b>	<b>34</b>
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**Prerequisites**

<sup>1</sup> AUMT 1201 or AUMT 1305 (Prerequisite),  
AUMT 1307 (Prerequisite or Corequisite)

<sup>2</sup> AUMT 1305

<sup>3</sup> AUMT 1310

<sup>4</sup> AUMT 1201 or AUMT 1305, AUMT 1307, AUMT 1419

## Automotive Technology Toyota T-TEN Specialization

### Certificate 2- Waco only

<b>Semester 1</b>		<b>Credits</b>
AUMT 2337	Automotive Electronics	3
AUMT 1201	Introduction and Theory of Automotive Technology <sup>2</sup>	
AUMT 1307	Automotive Electrical Systems	3
AUMT 2321	Automotive Electrical Diagnosis and Repair	3
<b>Semester Total</b>		<b>11</b>

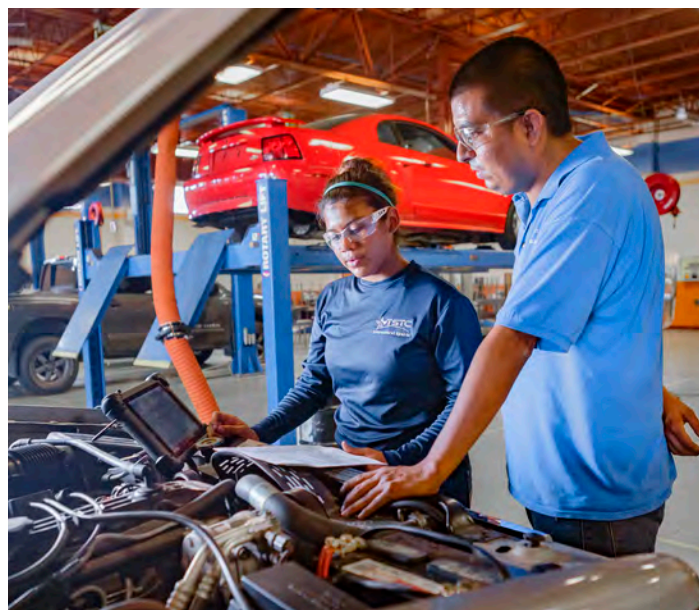
<b>Semester 2</b>		<b>Credits</b>
AUMT 1416	Automotive Suspension and Steering Systems	4
AUMT 1166	Practicum (or Field Experience) - Automobile/ Automotive Mechanics Technology/Technician	1
AUMT 1310	Automotive Brake Systems	3
AUMT 1345	Automotive Climate Control Systems <sup>1</sup>	3
<b>Semester Total</b>		<b>11</b>

<b>Semester 3</b>		<b>Credits</b>
AUMT 2188	Internship (or Field Experience) - Automobile/ Automotive Mechanics Technology/Technician <sup>2</sup>	1
<b>Semester Total</b>		<b>1</b>

<b>Semester 4</b>		<b>Credits</b>
AUMT 1419	Automotive Engine Repair <sup>3</sup>	4
AUMT 2289	Internship (or Field Experience) - Automobile/ Automotive Mechanics Technology/Technician <sup>4</sup>	2
AUMT 2413	Automotive Drive Train and Axles <sup>5</sup>	4
AUMT 2417	Automotive Engine Performance Analysis I <sup>6</sup>	4
<b>Semester Total</b>		<b>14</b>

<b>Semester 5</b>		<b>Credits</b>
AUMT 2425	Automotive Automatic Transmission and Transaxle <sup>7</sup>	4
AUMT 2434	Automotive Engine Performance Analysis II <sup>8</sup>	4
<b>Semester Total</b>		<b>8</b>

<b>Program Total</b>	<b>45</b>
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**Prerequisites**

<sup>1</sup> AUMT 1201 or AUMT 1305 (Prerequisite),  
AUMT 1307 (Prerequisite or Corequisite)

<sup>2</sup> AUMT 1416, AUMT 1345

<sup>3</sup> AUMT 1305

<sup>4</sup> AUMT 2321

<sup>5</sup> AUMT 1310

<sup>6</sup> AUMT 1201 or AUMT 1305, AUMT 1307,  
AUMT 1419 (Prerequisite or Corequisite)

<sup>7,8</sup> AUMT 2413, AUMT 2417, AUMT 2321

## Automotive Advanced Vehicle Fuel Systems Enhanced Skills Certificate - Waco only

<b>Semester 1</b>		<b>Credits</b>
AUMT 2407	Hybrid Systems Diagnostics	4
AUMT 2357	Automotive Alternative Fuels	3
AUMT 2470	Automotive Compression Ignition Engines & Fuel Systems	4
<b>Semester Total</b>		<b>11</b>
<b>Program Total</b>		<b>11</b>

## Avionics Technology

Avionics is one of the most exciting and challenging careers in the aviation industry. Avionics technicians are responsible for installing, maintaining and repairing navigational and communication radios, transponders, digital audio systems, flight management computers and aircraft autopilot systems on all sizes of aircraft. TSTC's Avionics program helps prepare students for the Federal Communication Commission's General Radio-Telephone Operator's License (FCC GROL) and the Aircraft Electronic Technician certification from the National Center for Aerospace and Transportation Technologies (NCATT AET). The curriculum includes college-transferable courses in science, mathematics and English required for the Associate of Applied Science degree, which prepares you to meet the expanding responsibilities of today's avionics technician.

Avionics is available at the Waco campus.



### Avionics Technology Associate of Applied Science

<b>Semester 1</b>		<b>Credits</b>
AVNC 1303	Introduction to Aviation Electronic Systems	3
AVNC 1343	Aviation Electrical and Electronic Systems Installation	3
IEIR 1371	Electrical Principles and Applications	3
ENGL 1301	Composition I	<u>3</u>
<b>Semester Total</b>		<b>12</b>

<b>Semester 2</b>		<b>Credits</b>
AVNC 1353	Operational Testing of Aviation Electronic Systems	3
AVNC 2308	Aviation Electrical and Electronics Systems Installation II	3
CETT 1325	Digital Fundamentals <sup>1</sup>	3
MATH 1332	Contemporary Mathematics (Quantitative Reasoning)	<u>3</u>
<b>Semester Total</b>		<b>12</b>

<b>Semester 3</b>		<b>Credits</b>
AVNC 1306	FAA Regulations for Avionics Certified Repair Station	3
AVNC 1391	Installation & Operational Testing of Avionics & Pitot-Static Systems	3
CETT 1329	Solid State Devices <sup>2</sup>	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	<u>3</u>
<b>Semester Total</b>		<b>12</b>

<b>Semester 4</b>		<b>Credits</b>
AVNC 2304	Foundations in Avionics Equipment Component Level Repairs	3
AVNC 2357	Aviation Communication Component Level Repair	3
CSIR 1355	Industry Certifications <sup>3</sup>	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>		<b>12</b>

<b>Semester 5</b>		<b>Credits</b>
AVNC 2345	Aviation Navigational Equipment Component Level Repair	3
AVNC 2350	Aviation Pulsed RF Equipment Component Level Repair	3
AVNC 2355	Advanced Aviation Electronics Troubleshooting	3
ACGM X3XX	Gen Ed Elective	<u>3</u>
<b>Semester Total</b>		<b>12</b>

**Program Total** **60**

#### Prerequisites

<sup>1</sup> CETT 1303, IEIR 1302, IEIR 1304, IEIR 1371 or CETT 1305 Prerequisite or Corequisite)

<sup>2</sup> CETT 1305, IEIR 1371 or IEIR 1304

<sup>3</sup> IEIR 1371 or CETT 1302

## Biology

The Biology department offers course prerequisites for various nursing programs and other allied health programs. Biology faculty serve as student advisors for the Biology associate's degree and can direct students to program advisors for the various allied health programs. Since, with a few exceptions, no particular course sequence needs to be followed and there is a varied selection of appropriate electives that may be chosen, students should consult with the appropriate advisor within the Biology department.

An Associate of Science degree in Biology is available at the Harlingen campus.

### Biology Associate of Science

Semester 1		Credits
ENGL 1301	Composition I	3
BIOL X4XX	Biology Approved Elective (List 1)	4
HIST 1301	United States History I	3
SPCH X3XX	Gen Ed Speech Elective	3
<b>Semester Total</b>		<b>13</b>

Semester 2		Credits
ENGL 1302	Composition II <sup>1</sup>	3
BIOL X4XX	Biology Approved Elective (List 1)	4
HIST 1302	United States History II	3
MATH 1314	College Algebra	3
<b>Semester Total</b>		<b>13</b>

Semester 3		Credits
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	3
ACGM X4XX	4 Credit Approved Elective (List 2)	4
ACGM X3XX	Gen Ed Fine Arts Elective	3
ACGM X4XX	4 Credit Approved Elective (List 3)	4
<b>Semester Total</b>		<b>14</b>

Semester 4		Credits
ACGM X4XX	4 Credit Approved Elective (List 2)	4
GOVT 2305	Federal Government (Federal Constitution & topics)	3
ACGM X3XX	Gen Ed Humanities Elective	3
ACGM X3XX	3 Credit Approved Elective (List 4)	3
<b>Semester Total</b>		<b>13</b>

Semester 5		Credits
ACGM X4XX	4 Credit Approved Elective (List 3)	4
GOVT 2306	Texas Government (Texas Constitution & topics)	3
<b>Semester Total</b>		<b>7</b>
<b>Program Total</b>		<b>60</b>

#### Prerequisites

<sup>1</sup> ENGL 1301

List 1	
BIOL 1106, 1306, 1406	
BIOL 1107, 1307, 1407	
BIOL 2101, 2301, 2401	
BIOL 2102, 2302, 2402	

List 2	
CHEM 1111, 1311, 1411	
CHEM 1112, 1312, 1412	
PHYS 1101, 1301, 1401	
PHYS 1102, 1302, 1402	
PHYS 1115, 1315, 1415	
PHYS 1117, 1317, 1417	
BIOL 1106, 1306, 1406	
BIOL 1107, 1307, 1407	
BIOL 2101, 2301, 2401	
BIOL 2102, 2302, 2402	

List 3	
BIOL 2121, 2321, 2421	
BIOL 2120, 2320, 2420	

BIOL 2101, 2301, 2401	
BIOL 2102, 2302, 2402	

BIOL 1111, 1311, 1411	
BIOL 1113, 1313, 1413	
BIOL 2116, 2316, 2416	
BIOL 2106, 2306, 2406	
BIOL 1108, 1309, 1409	

BIOL 1109, 1308, 1408	
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CHEM 1111, 1311, 1411	
CHEM 1112, 1312, 1412	
CHEM 1105, 1305, 1405	
CHEM 2123, 2323, 2423	

List 4	
BIOL 2306	
BIOL 1322	
MATH 1316	
MATH 2312	
PSYC 2314	
PSYC 2301	
ANTH 2346	
SOCI 1301	
GEOG 1303	
HIST 2321	

#### Prerequisites

<sup>2</sup> BIOL 1107, 1307; MATH (Prerequisite or Corequisite)

<sup>3</sup> CHEM 1311, 1111; BIOL 1106, 1306

(2 Courses)(4 credits)	
Biology for Science Majors I (Lec and Lab)	
Biology for Science Majors II (Lec and Lab) <sup>2</sup>	
Anatomy & Physiology I (Lec and Lab)	
Anatomy & Physiology II (Lec and Lab)	

(2 Courses) (4 credits)	
General Chemistry I (Lec and Lab)	
General Chemistry II (Lec and Lab)	
College Physics I (Lec and Lab)	
College Physics II (Lec and Lab)	
Physical Science I (Lec and Lab)	
Physical Science II (Lec and Lab)	
Biology for Science Majors I (Lec and Lab)	
Biology for Science Majors II (Lec and Lab)	
Anatomy & Physiology I (Lec and Lab)	
Anatomy & Physiology II (Lec and Lab)	

(2 Courses) (4 credits)	
Microbiology for Science Majors (Lec and Lab) <sup>3</sup>	
Microbiology for Non-Science Majors (Lec and Lab)	
Anatomy and Physiology I (Lec and Lab)	
Anatomy and Physiology II (Lec and Lab)	
General Botany (Lec and Lab)	
General Zoology (Lec and Lab)	
Genetics (Lec and Lab)	
Environmental Biology (Lec and Lab)	
Biology for Non-Science Majors I (Lec and Lab)	
Biology for Non-Science Majors II (Lec and Lab)	
General Chemistry I (Lec and Lab)	
General Chemistry II (Lec and Lab)	
Introductory Chemistry	
Organic Chemistry	

(1 Course) (3 credits)	
Environmental Biology	
Nutrition and Diet Therapy	
Trigonometry	
Pre-Calculus	
Lifespan Growth and Development	
General Psychology	
General Anthropology	
Introduction to Sociology	
Physical Geology	
World Civilizations I	

## Biomedical Equipment Technology

First-rate equipment, experienced staff and an advisory board that comprises top industry names are just a few of the benefits available at TSTC. Biomedical equipment technicians work on equipment such as defibrillators, heart monitors, medical imaging equipment (X-rays, CAT scanners and ultrasound equipment), voice-controlled operating tables and electric wheelchairs, so the industry needs sharp, professional technicians that can inspect, calibrate, maintain, troubleshoot and repair this critical medical equipment. Students in the Biomedical Equipment Technology program gain knowledge and hands-on experience working with everything from the simplest suction pump to the most sophisticated laboratory equipment, cardiac monitors, and X-ray and ultrasound equipment.

Biomedical Equipment Technology is available at the Harlingen and Waco campuses.

### Biomedical Equipment Technology Associate of Applied Science

Semester 1	Credits
BIOM 1101 Biomedical Equipment Technology	1
BIOM 1270 Shop Skills for Biomedical Equipment Technicians	2
CETT 1303 DC Circuits	3
ITSC 1309 Integrated Software Applications I	3
MATH 1332 Contemporary Mathematics (Quantitative Reasoning)	<u>3</u>
<b>Semester Total</b>	<b>12</b>
Semester 2	Credits
BIOM 1309 Applied Biomedical Equipment Technology	3
BIOM 1315 Medical Equipment Networks	3
ITNW 1325 or Fundamentals of Networking Technologies	
CETT 1305 AC Circuits <sup>1</sup>	3
ENGL 1301 Composition I	3
ACGM X3XX Gen Ed Math/Natural Science Elective	<u>3</u>
<b>Semester Total</b>	<b>15</b>
Semester 3	Credits
BIOM 1341 Medical Circuits/Troubleshooting <sup>2</sup>	3
BIOM 2301 Safety in Health Care Facilities <sup>3</sup>	3
BIOM 2319 Fundamentals of X-Ray and Medical Imaging Systems <sup>4</sup>	3
CETT 1325 Digital Fundamentals <sup>5</sup>	3
BIOM 2311 General Medical Equipment I <sup>6</sup>	<u>3</u>
<b>Semester Total</b>	<b>15</b>
Semester 4	Credits
ACGM X3XX Gen Ed Social/Behavioral Science Elective	3
BIOM 2343 General Medical Equipment II <sup>7</sup>	3
BIOM 1355 or Medical Electronic Applications <sup>8</sup>	
BIOM 2215 Physiological Instruments I <sup>9</sup>	2
BIOM 2231 Biomedical Clinical Instrumentation	2
BIOM 2239 Physiological Instruments II <sup>10</sup>	2
BIOM 1291 or Special Topics in Biomedical Engineering-Related Technology/Technician	
BIOM 1250 or Diagnostic Ultrasound Imaging System	
<b>Semester Total</b>	<b>12</b>

Semester 5	Credits
BIOM 2388 Internship - Biomedical Technology/Technician	3
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	<u>3</u>
<b>Semester Total</b>	<b>6</b>
<b>Program Total</b>	<b>60</b>

#### Prerequisites

<sup>1</sup> CETT 1303 or IEIR 1302 (Prerequisite or Corequisite)

<sup>2,3,4</sup> CETT 1303, CETT 1305

<sup>5</sup> CETT 1303, IEIR 1302, IEIR 1304, IEIR 1371 or CETT 1305 (Prerequisite or Corequisite)

<sup>6</sup> CETT 1303, CETT 1305

<sup>7,8,9</sup> BIOM 2301

<sup>10</sup> BIOM 2301 (Corequisite BIOM 2215)

### Medical Imaging Systems Technology Associate of Applied Science - Waco only

Semester 1	Credits
BIOM 1101 Biomedical Equipment Technology	1
BIOM 1270 Shop Skills for Biomedical Equipment Technicians	2
CETT 1303 DC Circuits	3
ITSC 1309 Integrated Software Applications I	3
MATH 1332 Contemporary Mathematics (Quantitative Reasoning)	<u>3</u>
<b>Semester Total</b>	<b>12</b>

Semester 2	Credits
BIOM 1309 Applied Biomedical Equipment Technology	3
BIOM 1315 Medical Equipment Networks	3
ITNW 1325 or Fundamentals of Networking Technologies	
CETT 1305 AC Circuits <sup>1</sup>	3
ENGL 1301 Composition I	3
ACGM X3XX Gen Ed Math/Natural Science Elective	<u>3</u>
<b>Semester Total</b>	<b>15</b>

Semester 3	Credits
BIOM 1341 Medical Circuits/Troubleshooting <sup>2</sup>	3
BIOM 2301 Safety in Health Care Facilities <sup>3</sup>	3
BIOM 2319 Fundamentals of X-Ray and Medical Imaging Systems <sup>4</sup>	3
CETT 1325 Digital Fundamentals <sup>5</sup>	3
ACGM X3XX Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>	<b>15</b>

Semester 4	Credits
BIOM 1350 Diagnostic Ultrasound Imaging System <sup>6</sup>	3
BIOM 2333 Digital Radiography <sup>7</sup>	3
BIOM 2345 Advanced Imaging Systems <sup>8</sup>	3
BIOM 2347 RF/X-Ray System <sup>9</sup>	<u>3</u>
<b>Semester Total</b>	<b>12</b>

Semester 5	Credits
BIOM 2388 Internship - Biomedical Technology/Technician	3
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	<u>3</u>
<b>Semester Total</b>	<b>6</b>
<b>Program Total</b>	<b>60</b>

#### Prerequisites

<sup>1</sup> CETT 1303 or IEIR 1302 (Prerequisite or Corequisite)

<sup>2,3,4</sup> CETT 1303, CETT 1305

<sup>5</sup> CETT 1303, IEIR 1302, IEIR 1304, IEIR 1371 or CETT 1305 (Prerequisite or Corequisite)

<sup>6</sup> CETT 1303, CETT 1305

<sup>7,8,9</sup> BIOM 2319

## Building Construction Technology

TSTC's Building Construction program offers several options that can help you specialize, brush up your skills or move you on a faster track to build a career in this field. Students in this technology get crucial, hands-on experience on the latest tools in the industry, backed by a knowledgeable staff and advisors in key positions within the industry.

Building Construction Technology is available at the Harlingen and Waco campuses.

### Building Construction Technology Associate of Applied Science

<b>Semester 1</b>		<b>Credits</b>
CNBT 1300	Residential and Light Commercial Blueprint Reading	3
CNBT 1316	Construction Technology I	3
OSHT 1305	OSHA Regulations - Construction Industry	3
TECM 1303	Technical Calculations	<u>3</u>
<b>Semester Total</b>		<b>12</b>
<b>Semester 2</b>		<b>Credits</b>
CNBT 1313	Concrete I	3
CNBT 1342	Building Codes and Inspections	3
CNBT 1350	Construction Technology II	3
CNBT 2317	Green Building	<u>3</u>
<b>Semester Total</b>		<b>12</b>
<b>Semester 3</b>		<b>Credits</b>
CNBT 1302	Mechanical, Plumbing & Electrical Systems in Construction I	3
CNBT 1346	Construction Estimating I	3
CNBT 2339	Construction Technology IV	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>		<b>12</b>
<b>Semester 4</b>		<b>Credits</b>
CNBT 2337	Construction Estimating II or Project Scheduling	3
CNBT 2342	Construction Management I	3
ACGM X3XX	Gen Ed Math/Natural Science Elective	3
ACGM X3XX	Gen Ed Elective	<u>3</u>
<b>Semester Total</b>		<b>12</b>
<b>Semester 5</b>		<b>Credits</b>
CNBT 1315	Field Engineering I	3
CNBT 2344	Construction Management II	3
ACGM X3XX	Gen Ed Elective	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	<u>3</u>
<b>Semester Total</b>		<b>12</b>
<b>Program Total</b>		<b>60</b>



### Building Construction Craftsman Certificate 1

<b>Semester 1</b>		<b>Credits</b>
CNBT 1300	Residential and Light Commercial Blueprint Reading	3
OSHT 1305	OSHA Regulations - Construction Industry	3
CNBT 1316	Construction Technology I	3
TECM 1303	Technical Calculations	<u>3</u>
<b>Semester Total</b>		<b>12</b>
<b>Semester 2</b>		<b>Credits</b>
CNBT 1313	Concrete I	3
CNBT 1342	Building Codes and Inspections	3
CNBT 1350	Construction Technology II	3
CNBT 2317	Green Building	<u>3</u>
<b>Semester Total</b>		<b>12</b>
<b>Semester 3</b>		<b>Credits</b>
CNBT 1680	Cooperative Education - Construction Engineering Technology/Technician or Mechanical, Plumbing & Electrical Systems in Construction I	3
CNBT 2339	and Construction Technology IV	<u>3</u>
<b>Semester Total</b>		<b>6</b>
<b>Program Total</b>		<b>30</b>

## Business Management Technology

The Business Management Technology AAS degree equips students with the soft skills that industry requires, as well as proficiency in the Microsoft Office suite, including Word, Access, Excel and PowerPoint. Students have the opportunity to earn Microsoft certifications in each of these applications. Upon graduation, students will have received training in management classes that will give them the well-rounded education they need to take on business opportunities with confidence.

Business Management is available at the Abilene, Brownwood, Harlingen and Marshall campuses.

### Business Management Technology Associate of Applied Science

Semester 1		Credits
BMGT 1327	Principles of Management	3
POFI 2301	Word Processing	3
ACGM X3XX	Gen Ed Speech Elective	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	3
Semester Total		12
Semester 2		Credits
ACNT 1325	Principles of Accounting I	3
POFT 1319	Records & Information Management I	3
POFI 1349	Spreadsheets	3
ACGM X3XX	Gen Ed English Elective	3
Semester Total		12
Semester 3		Credits
ACNT 1311	Introduction to Computerized Accounting	3
BMGT 1305	Communications in Management	3
ITSW 1310	Introduction to Presentation Graphics Software	3
ACGM X3XX	Gen Ed Math/Natural Science Elective	3
Semester Total		12
Semester 4		Credits
ACNT 1329	Payroll & Business Tax Accounting	3
BUSG 1302	E-Business Management	3
ITSW 1307	Introduction to Database	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	3
Semester Total		12
Semester 5		Credits
BMGT 1309	Information and Project Management	3
BUSG 1315	Small Business Operations	3
HRPO 2301	Human Resources Management	3
MRKG 1301	Customer Relationship Management	3
Semester Total		12
Program Total		60



### Business Management Technology Certificate 2

Semester 1		Credits
ACNT 1325	Principles of Accounting I	3
BMGT 1327	Principles of Management	3
POFI 2301	Word Processing	3
POFT 1319	Records & Information Management I	3
Semester Total		12
Semester 2		Credits
ACNT 1311	Introduction to Computerized Accounting	3
BMGT 1305	Communications in Management	3
BUSG 1302	E-Business Management	3
POFI 1349	Spreadsheets	3
Semester Total		12
Semester 3		Credits
ACNT 1329	Payroll & Business Tax Accounting	3
BUSG 1315	Small Business Operations	3
ITSW 1307	Introduction to Database	3
ITSW 1310	Introduction to Presentation Graphics Software	3
Semester Total		12
Semester 4		Credits
BMGT 1309	Information and Project Management	3
HRPO 2301	Human Resources Management	3
MRKG 1301	Customer Relationship Management	3
Semester Total		9
Program Total		45

# Chemical Dependency Counseling

The Chemical Dependency Counseling program at TSTC facilitates the development of the skills necessary for success in the chemical dependency counseling services industry. The program focuses on clinical evaluations, treatment planning, referrals, service coordination, individual and group counseling, documentation, professional and ethical responsibilities, and client, family and community education. With this knowledge base, students will be prepared to work as counselor interns as they strive toward licensure requirements. Graduates of the program find work opportunities through the criminal justice system, substance abuse treatment centers, or hospitals.

A certificate is available for individuals who have a degree in the human services field and want expertise in alcohol and drug counseling.

Chemical Dependency Counseling is available at the Abilene, Breckenridge and Brownwood campuses.



## Chemical Dependency Counseling Associate of Applied Science

Semester 1	Credits
DAAC 1319 Substance-Related and Addictive Disorders	3
PSYT 1313 Psychology of Personal Adjustment	3
PSYC 2301 General Psychology	3
ACGM X3XX Gen Ed Elective	3
ACGM X3XX Gen Ed Elective	<u>3</u>
<b>Semester Total</b>	<b>15</b>
Semester 2	Credits
DAAC 1309 Assessment of Substance-Related and Addictive Disorders	3
DAAC 1311 Counseling Theories	3
DAAC 2306 Substance Abuse Prevention I	3
DAAC 2307 Addicted Family Intervention	3
DAAC 2343 Current Issues	<u>3</u>
<b>Semester Total</b>	<b>15</b>
Semester 3	Credits
DAAC 1304 Pharmacology of Addiction	3
DAAC 1305 Co-Occurring Disorders	3
DAAC 1317 Basic Counseling Skills	3
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>
Semester 4	Credits
CJSA 1325 Criminology	3
DAAC 2301 Therapeutic Communities in a Criminal Justice Setting	3
DAAC 2341 Counseling Alcohol and Other Drug Addictions	3
DAAC 2354 Dynamics of Group Counseling	<u>3</u>
<b>Semester Total</b>	<b>12</b>

Semester 5	Credits
DAAC 2366 Practicum (or Field Experience) - Substance Abuse/Addiction Counseling	3
ACGM X3XX Gen Ed Math/Natural Science Elective	<u>3</u>
<b>Semester Total</b>	<b>6</b>
<b>Program Total</b>	<b>60</b>

## Chemical Dependency Counseling Certificate 1

Semester 1	Credits
DAAC 1319 Substance-Related and Addictive Disorders	3
DAAC 2301 Therapeutic Communities in a Criminal Justice Setting or Addicted Family Intervention	3
DAAC 2307 Counseling Alcohol and Other Drug Addictions	3
DAAC 2341 Dynamics of Group Counseling or Basic Counseling Skills	<u>3</u>
<b>Semester Total</b>	<b>12</b>
Semester 2	Credits
DAAC 1311 Counseling Theories or Criminology	3
CJSA 1325 Assessment of Substance-Related and Addictive Disorders	3
DAAC 1309 Current Issues	3
DAAC 2343 Practicum (or Field Experience) - Substance Abuse/Addiction Counseling	<u>3</u>
<b>Semester Total</b>	<b>12</b>
<b>Program Total</b>	<b>24</b>

## Chemical Technology

Dozens of industries need the vital skills of chemical/environmental technicians. You'll find them at the heart of laboratories in petrochemical plants, environmental operations, semiconductor manufacturing factories, water purification facilities and many other places. TSTC students learn hands-on skills in Chemical Technology that can put them first in the job market. Taught by experienced staff and guided by an advisory board with top industry names, you can be assured you're getting the best possible education. TSTC's Chemical Technology students learn the basic chemical processes and have access to equipment such as chromatographs, spectrometers and mass spectrophotometers, as well as work in a wet chemical laboratory. With an Associate of Applied Science degree in Chemical/Environmental Laboratory Technology, you can look forward to excellent career opportunities and outstanding starting salaries.

Chemical Technology is available at the Harlingen campus.



### Chemical Technology Associate of Applied Science

#### Semester 1

	Credits
CTEC 1205 Chemical Calculations I	2
CTEC 1113 Introduction to Chemical Technology	1
SCIT 1414 Applied General Chemistry I	4
ENGL 1301 Composition I	3
MATH 1314 College Algebra	<u>3</u>
<b>Semester Total</b>	<b>13</b>

#### Semester 2

	Credits
CTEC 1206 Chemical Calculations II <sup>1</sup>	2
CTEC 1345 Chemical Laboratory Safety	3
SCIT 1415 Applied General Chemistry II <sup>2</sup>	4
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>

#### Semester 3

	Credits
SCIT 1543 Applied Analytical Chemistry I <sup>3</sup>	5
SCIT 2401 Applied Organic Chemistry I <sup>4</sup>	4
ACGM X3XX Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>

#### Semester 4

	Credits
CTEC 1441 Applied Instrumental Analysis I <sup>5</sup>	4
SCIT 2402 Applied Organic Chemistry II <sup>6</sup>	4
CTEC 2441 or Polymers I <sup>7</sup>	
ACGM X4XX Gen Ed Science Elective	<u>4</u>
<b>Semester Total</b>	<b>12</b>

#### Semester 5

	Credits
CTEC 2333 Comprehensive Studies in Chemical Technology	3
CTEC 2431 Applied Instrumental Analysis II <sup>8</sup>	4
CTEC 2445 Unit Operations <sup>9</sup>	<u>4</u>
<b>Semester Total</b>	<b>11</b>

**Program Total**

**60**

#### Prerequisites

<sup>1</sup> SCIT 1415 (Corequisite)

<sup>2</sup> SCIT 1414

<sup>3,4</sup> SCIT 1415

<sup>5,8</sup> SCIT 1543

<sup>6,7</sup> SCIT 2401

<sup>9</sup> CTEC 1441

# Cloud & Data Center Management

It is estimated that by 2021 cloud computing will virtually replace traditional or legacy on-premises data centers. TSTC, a member of the Amazon Web Services (AWS) Academy, offers Cloud Computing Architecture as part of the Cloud and Data Center Management program. Cloud Computing Architecture is an authorized curriculum developed by AWS-subject-matter experts, ensuring it is up to date and reflects current services and best practices. Courses are taught by AWS Academy-accredited instructors, who are trained by AWS to help students become proficient in AWS technology, the world's most comprehensive and broadly adopted cloud platform.

Through instructor-led training and hands-on labs, students will learn programming logic and design, automation via scripting languages from Microsoft's PowerShell and Linux's Bash, advanced Linux configuration and Amazon Web Services (AWS), in addition to topics such as networking, databases, security, on-premises virtualization techniques and more.

Cloud & Data Center Computing is available at the Waco campus.



## Cloud & Data Center Computing Associate of Applied Science Degree

Semester 1		Credits
ITCC 1314	CCNA 1: Introduction to Networks	3
ITSC 1325	Personal Computer Hardware	3
ITSE 1329	Programming Logic and Design	3
MATH 1332	Contemporary Mathematics (Quantitative Reasoning)	3
<b>Semester Total</b>		<b>12</b>
Semester 2		Credits
ITNW 1345	Implementing Network Directory Services	3
ITNW 1358	Network+ <sup>1</sup>	3
ITSE 1359	Introduction to Scripting Languages	3
ENGL 1301	Composition I	3
<b>Semester Total</b>		<b>12</b>

Semester 3		Credits
ITNW 1313	Computer Virtualization	3
ITSC 1316	Linux Installation and Configuration <sup>2</sup>	3
ITSY 1342	Information Technology Security <sup>3</sup>	3
BUSI 1301	Business Principles	3
<b>Semester Total</b>		<b>12</b>

Semester 4		Credits
ITSC 2346	Computer Center Management	3
ITNW 2354	Internet/Intranet Server <sup>4</sup>	3
ITSW 2337	Advanced Database	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	3
<b>Semester Total</b>		<b>12</b>

Semester 5		Credits
ITNW 2376	Cloud Deployment & Infrastructure Management	3
ITSC 2325	Advanced Linux <sup>5</sup>	3
ITSC 2370	Final Project-Systems Administration	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	3
<b>Semester Total</b>		<b>12</b>

**Program Total** **60**

### Prerequisites

<sup>1</sup> ITCC 1314

<sup>2</sup> ITCC 1314 or ITNW 1325 or ITSC 1325

<sup>3</sup> ITNW 1345 or ITNW 1354 (Prerequisite or Corequisite)

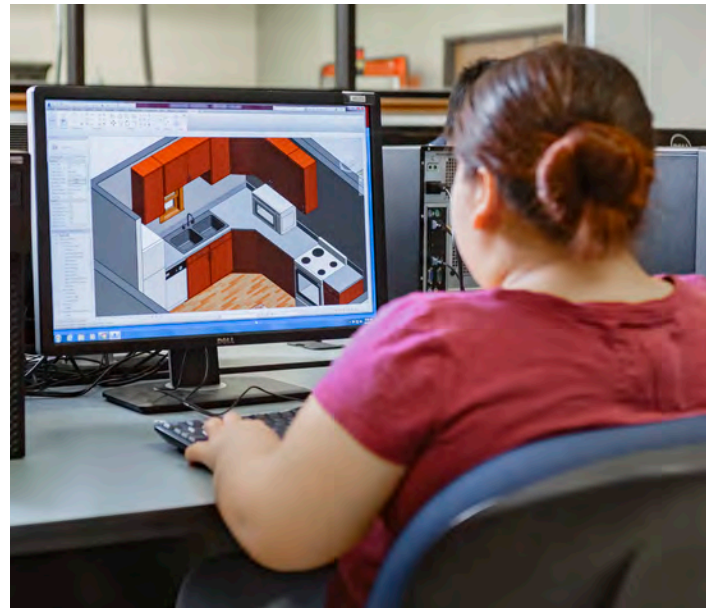
<sup>4</sup> ITNW 1345, ITSC 1316 or ITNW 2305

<sup>5</sup> ITSC 1316

## Computer-Aided Drafting & Design Technology

Drafters prepare technical drawings and plans used by production and construction workers to build everything from manufactured products such as toys, toasters, industrial machinery and spacecraft to structures such as houses, office buildings, and oil and gas pipelines. Drafters' drawings provide visual guidelines; show the technical details of the products and structures; and specify dimensions, materials and procedures. Drafters fill in technical details using drawings, rough sketches, specifications, codes and calculations previously made by engineers, surveyors, architects or scientists. Drafters use technical handbooks, tables, calculators and computers to complete their work. The Computer-Aided Drafting & Design program offers the technical skills needed for a career in this essential field. In our hands-on learning environment, students utilize computer programs such as AutoCAD, Inventor, Revit and AutoCAD Civil 3D. For quicker entry into the industry, a certificate in Mechanical Drafting is also available.

The Computer-Aided Drafting & Design Technology program is available at the Marshall and North Texas campuses.



### Computer-Aided Drafting & Design Technology Associate of Applied Science

Semester 1	Credits
DFTG 1305 Technical Drafting	3
DFTG 1309 Basic Computer-Aided Drafting	3
SRVY 1301 Introduction to Surveying	3
POFI 1301 or Computer Applications I	
ACGM X3XX Gen Ed Math/Natural Science Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>

Semester 2	Credits
DFTG 1317 Architectural Drafting - Residential <sup>1</sup>	3
DFTG 1333 Mechanical Drafting <sup>2</sup>	3
DFTG 2319 Intermediate Computer-Aided Drafting <sup>3</sup>	3
DFTG 2340 Solid Modeling/Design <sup>4</sup>	<u>3</u>
<b>Semester Total</b>	<b>12</b>

Semester 3	Credits
ARCE 1352 Structural Drafting	3
DFTG 1329 Electro-Mechanical Drafting <sup>5</sup>	3
DFTG 2330 Civil Drafting <sup>6</sup>	3
ACGM X3XX Gen Ed Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>

Semester 4	Credits
DFTG 2302 Machine Drafting <sup>7</sup>	3
DFTG 2323 Pipe Drafting	3
MCHN 1326 or Introduction to Computer-Aided Manufacturing (CAM) <sup>8</sup>	
DFTG 2332 Advanced Computer-Aided Drafting <sup>9</sup>	3
ACGM X3XX Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>

Semester 5	Credits
DFTG 2357 Advanced Technologies in Pipe Design and Drafting	3
DFTG 2338 or Final Project - Advanced Drafting <sup>10</sup>	
DFTG 2386 Internship - Drafting and Design Technology/Technician, General	3
ACGM X3XX Gen Ed Elective	3
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>
<b>Program Total</b>	<b>60</b>

#### Prerequisites

<sup>1</sup> DFTG 1305, DFTG 1309 (Prerequisite or Corequisite)

<sup>2</sup> DFTG 1305 or DFTG 1309

<sup>3,4,5,7</sup> DFTG 1309 (Prerequisite or Corequisite)

<sup>6</sup> SRVY 1301 or POFI 1301 or DFTG 2319

<sup>8</sup> ENTC 1371 or DFTG 1309

<sup>9,10</sup> DFTG 2319 (Prerequisite or Corequisite)

# Computer Maintenance Technology

For those who want to enter the computer maintenance field, TSTC's Computer Maintenance Technology program (CMT) provides an in-depth education into all aspects of computer hardware components, operating systems and peripheral devices.

In addition to computer repair, the curriculum covers basic network infrastructure installation, troubleshooting and repair, home and business integration, customer support/help desk services, and audio and video systems. For quicker entry into the industry, a certificate specializing in Home Integration Technology is also available.

Computer Maintenance Technology is available at the Harlingen and Waco campuses.

## Computer Maintenance Technology Associate of Applied Science

Semester 1	Credits
CPMT 1304 Microcomputer System Software	3
ITNW 1325 Fundamentals of Networking Technologies	3
ITSC 1325 Personal Computer Hardware	3
CPMT 1311 or Introduction to Computer Maintenance	
ACGM X3XX Gen Ed Math/Natural Science Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>
Semester 2	Credits
CPMT 1345 Computer Systems Maintenance	3
ITNW 1354 Implementing and Supporting Servers	3
ITSC 1321 Intermediate PC Operating Systems <sup>1</sup>	3
ENGL 1301 Composition I	<u>3</u>
<b>Semester Total</b>	<b>12</b>
Semester 3	Credits
CPMT 1307 Electronic and Computer Skills	3
CPMT 1349 Computer Networking Technology	3
CPMT 1371 or Introduction to MAC Operating Systems	
ITSC 2339 Personal Computer Help Desk Support <sup>2</sup>	3
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>
Semester 4	Credits
CPMT 1347 Computer System Peripherals <sup>3</sup>	3
CPMT 2302 Home Technology Integration	3
ITSY 1300 Fundamentals of Information Security	3
GAME 1301 or Computer Ethics	
ACGM X3XX Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>
Semester 5	Credits
CPMT 2333 Computer Integration <sup>4</sup>	3
CPMT 2345 Computer System Troubleshooting <sup>5</sup>	3
CPMT 2350 Industry Certification Preparation <sup>6</sup>	3
ACGM X3XX Gen Ed Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>
<b>Program Total</b>	<b>60</b>

### Prerequisites

<sup>1</sup> CPMT 1304

<sup>2,3</sup> CPMT 1311 or ITSC 1325

<sup>4</sup> ITSC 1321, CPMT 1345

<sup>5</sup> CPMT 1345

<sup>6</sup> CPMT 1345, CPMT 1347

## Computer Maintenance Technician Certificate 1 - Harlingen Only

Semester 1	Credits
CPMT 1311 Introduction to Computer Maintenance	3
CPMT 1304 Microcomputer System Software	3
CPMT 1345 Computer Systems Maintenance	3
CPMT 1307 Electronic and Computer Skills	3
CPMT 1371 Introduction to MAC Operating Systems	3
CPMT 1349 or Computer Networking Technology	
ITNW 1325 Fundamentals of Networking Technologies	<u>3</u>
<b>Semester Total</b>	<b>18</b>
<b>Program Total</b>	<b>18</b>

## Computer Maintenance Technology- Home Integration Certificate 1 - Waco only

Semester 1	Credits
CPMT 1307 Electronic and Computer Skills	3
CPMT 1349 Computer Networking Technology	3
CPMT 2302 Home Technology Integration	3
ITSC 1325 Personal Computer Hardware	<u>3</u>
<b>Semester Total</b>	<b>12</b>
Semester 2	Credits
CPMT 1304 Microcomputer System Software	3
ITNW 1354 Implementing and Supporting Servers	3
ITSC 2339 Personal Computer Help Desk Support <sup>1</sup>	3
ITSY 1300 Fundamentals of Information Security	<u>3</u>
<b>Semester Total</b>	<b>12</b>
Semester 3	Credits
CPMT 2370 Home Automation <sup>2</sup>	3
CPMT 2371 Audio/Video Networks <sup>3</sup>	3
CSIR 1359 Digital Data Communication <sup>4</sup>	3
EEIR 1307 Introductory Security Systems <sup>5</sup>	<u>3</u>
<b>Semester Total</b>	<b>12</b>
<b>Program Total</b>	<b>36</b>

### Prerequisites

<sup>1</sup> CPMT 1311 or ITSC 1325

<sup>2,3,4,5</sup> CPMT 2302

## Computer Networking & Security Technology

The focus of the Computer Networking & Security Technology program is the implementation and protection of data system networks that are connected to the Internet. Students in the program will gain the skills/knowledge required to prevent, defend, detect and respond to cyberattacks and threats. Students will also learn how to install and configure network devices (switches, routers, firewalls, wireless routers, access points, cabling), end-user workstations/devices and network servers that control, monitor or provide user services on internal or external networks.

Computer Networking & Security Technology is available at the Harlingen campus.



### Computer Networking & Security Technology Associate of Applied Science

#### Semester 1

		Credits
CPMT 1311	Introduction to Computer Maintenance	3
ITNW 1325	Fundamentals of Networking Technologies	3
ITNW 1354	Implementing and Supporting Servers	3
ENGL 1301	Composition I	<u>3</u>
	<b>Semester Total</b>	<b>12</b>

#### Semester 2

		Credits
ITNW 2321	Networking with TCP/IP <sup>1</sup>	3
ITNW 2359	Web Server Support and Maintenance	3
ITSC 1316	Linux Installation and Configuration <sup>2</sup>	3
MATH 1314	College Algebra	<u>3</u>
	<b>Semester Total</b>	<b>12</b>

#### Semester 3

		Credits
ITNW 2312	Routers <sup>3</sup>	3
ITSC 2325	Advanced Linux <sup>4</sup>	3
ITSY 1342	Information Technology Security <sup>5</sup>	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	<u>3</u>
	<b>Semester Total</b>	<b>12</b>

#### Semester 4

		Credits
ITNW 1313	Computer Virtualization	3
ITSY 2301	Firewalls and Network Security <sup>6</sup>	3
ITSY 2330	Intrusion Detection <sup>7</sup>	3
ACGM X3XX	Gen Ed Elective	<u>3</u>
	<b>Semester Total</b>	<b>12</b>

#### Semester 5

		Credits
ITNW 2350	Enterprise Network	3
ITSE 1359	Introduction to Scripting Languages	3
ITSY 2359	Security Assessment and Auditing <sup>8</sup>	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	<u>3</u>
	<b>Semester Total</b>	<b>12</b>

**Program Total** **60**

#### Prerequisites

<sup>1,3</sup> ITNW 1325

<sup>2</sup> ITCC 1314 or ITNW 1325 or ITSC 1325

<sup>4</sup> ITSC 1316

<sup>5</sup> ITNW 1345 or ITNW 1354 (Prerequisite or Corequisite)

<sup>6</sup> ITNW 1325 or ITNW 2312

<sup>7</sup> ITSY 1342

<sup>8</sup> ITSY 1342, ITSY 2301

# Computer Networking & Systems Administration

The Computer Networking & Systems Administration (CNS) program prepares technicians to build, manage and maintain network systems through an associate degree while preparing to achieve additional industry certifications from CompTIA and Cisco.

Through classroom instruction and hands-on training, students learn everything from Microsoft and Linux client and server operating systems to Cisco equipment, virtualization, introduction to cloud deployment and more. The two-year CNS program includes classroom and laboratory instruction that focuses on building extensive experience in Microsoft and system administration, as well as Cisco certification.

Computer Networking & Systems Administration is offered at the Abilene, Brownwood, Marshall, North Texas and Waco campuses.

## Computer Networking & Systems Administration Associate of Applied Science Degree

<b>Semester 1</b>		<b>Credits</b>
ITCC 1314	CCNA 1: Introduction to Networks	3
ITNW 1308	Implementing and Supporting Client Operating Systems	3
ITSC 1325	Personal Computer Hardware	3
MATH 1332	Contemporary Mathematics (Quantitative Reasoning)	3
<b>Semester Total</b>		<b>12</b>
<b>Semester 2</b>		<b>Credits</b>
ITNW 1358	Network+ <sup>1</sup>	3
ITNW 1345	Implementing Network Directory Services	3
ITSC 1316	Linux Installation and Configuration <sup>2</sup>	3
ENGL 1301	Composition I	3
<b>Semester Total</b>		<b>12</b>
<b>Semester 3</b>		<b>Credits</b>
ITCC 1340	CCNA 2: Routing and Switching Essentials	3
ITNW 1313	Computer Virtualization	3
ITSY 1342	Information Technology Security <sup>3</sup>	3
ITNW 2354	Internet/Intranet Server <sup>4</sup>	3
ITSY 2330	or Intrusion Detection <sup>5</sup>	3
<b>Semester Total</b>		<b>12</b>

<b>Semester 4</b>		<b>Credits</b>
ITCC 2312	CCNA 3: Scaling Networks <sup>6</sup>	3
ITSW 2337	Advanced Database	3
ACGM X3XX	Gen Ed Elective	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	3
<b>Semester Total</b>		<b>12</b>

<b>Semester 5</b>		<b>Credits</b>
ITCC 2313	CCNA 4: Connecting Networks	3
ITNW 2376	Cloud Deployment & Infrastructure Management	3
ITSC 2370	Final Project-Systems Administration or Internship - Computer and Information Sciences, General <sup>7</sup>	3
ITSC 2386		
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	3
<b>Semester Total</b>		<b>12</b>

**Program Total** **60**

### Prerequisites

- <sup>1</sup> ITCC 1314
- <sup>2</sup> ITCC 1314 or ITNW 1325 or ITSC 1325
- <sup>3</sup> ITNW 1345 or ITNW 1354 (Prerequisite or Corequisite)
- <sup>4</sup> ITNW 1345, ITSC 1316 or ITNW 2305
- <sup>5</sup> ITSY 1342
- <sup>6</sup> ITCC 1340
- <sup>7</sup> ITNW 2335, ITNW 2354 (Prerequisite or Corequisite)

## Computer Networking & Systems Administration Certificate 2 - Marshall, North Texas only

<b>Semester 1</b>		<b>Credits</b>
ITCC 1340	CCNA 2: Routing and Switching Essentials	3
ITNW 1308	Implementing and Supporting Client Operating Systems	3
ITNW 1325	Fundamentals of Networking Technologies	3
ITSY 1300	Fundamentals of Information Security	3
<b>Semester Total</b>		<b>12</b>

<b>Semester 2</b>		<b>Credits</b>
ITNW 1345	Implementing Network Directory Services	3
ITNW 2312	Routers <sup>1</sup>	3
ITSC 1316	Linux Installation and Configuration <sup>2</sup>	3
ITSY 1342	Information Technology Security <sup>3</sup>	3
<b>Semester Total</b>		<b>12</b>

<b>Semester 3</b>		<b>Credits</b>
ITNW 2335	Network Troubleshooting and Support <sup>4</sup>	3
ITNW 2354	Internet/Intranet Server <sup>5</sup>	3
ITSC 2386	Internship - Computer and Information Sciences, General <sup>6</sup>	3
ITSY 2330	Intrusion Detection <sup>7</sup>	3
<b>Semester Total</b>		<b>12</b>

**Program Total** **36**

### Prerequisites

- <sup>1,4</sup> ITNW 1325
- <sup>2</sup> ITCC 1314 or ITNW 1325 or ITSC 1325
- <sup>3</sup> ITNW 1345 or ITNW 1354 (Prerequisite or Corequisite)
- <sup>5</sup> ITNW 1345, ITSC 1316 or ITNW 2305
- <sup>6</sup> ITNW 2335, ITNW 2354 (Prerequisite or Corequisite)
- <sup>7</sup> ITSY 1342

## Computer Science Technology

Some of the hottest careers in the job market these days are within the Information Technology sector. That's why Computer Science Technology at TSTC makes sense for a great career choice. Students in this program get a practical, hands-on education that teaches them the technical skills required in the IT field. In addition to technical skills, the student's training centers on the development of logic, problem-solving and soft skills. CST provides specialized training in business application, mobile development, and database functionality that focuses on career expectations leading to a variety of positions, from program analyst and database administrator to consultant, systems analyst and computer engineer.

Computer Science Technology is available at the Harlingen and Waco campuses.

### Computer Science Associate of Science - Harlingen only

Semester 1		Credits
COSC 1336	Programming Fundamentals I	3
ENGL 1301	Composition I	3
MATH 1314	College Algebra	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	3
Semester Total		12
Semester 2		Credits
GOVT 2305	Federal Government (Federal Constitution & topics)	3
ENGL 1302	Composition II <sup>1</sup>	3
MATH 2312	Pre-Calculus Math (3 SCH version) <sup>2</sup>	3
COSC 1337	Programming Fundamentals II <sup>3</sup>	3
Semester Total		12
Semester 3		Credits
COSC 2325	Computer Organization <sup>4</sup>	3
MATH 2413	Calculus I (4 SCH version) <sup>5</sup>	4
GOVT 2306	Texas Government (Texas Constitution & topics)	3
ACGM X3XX	Language, Philosophy and Culture Elective	3
Semester Total		13
Semester 4		Credits
COSC 2336	Programming Fundamentals III <sup>6</sup>	3
PHYS 2325	University Physics I (lecture) <sup>7</sup>	3
PHYS 2125	University Physics Laboratory I (lab) <sup>8</sup>	1
HIST 1301	United States History I	3
Semester Total		10
Semester 5		Credits
MATH 2414	Calculus II (4 SCH version) <sup>9</sup>	4
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	3
SPCH X3XX	Gen Ed Speech Elective	3
HIST 1302	United States History II	3
Semester Total		13
Program Total		60

#### Prerequisites

- <sup>1</sup> ENGL 1301  
<sup>2</sup> MATH 1314  
<sup>3,4</sup> COSC 1336 or COSC 1436  
<sup>5</sup> MATH 1316 or MATH 2312 or MATH 2412  
<sup>6</sup> COSC 1337 or COSC 1437  
<sup>7</sup> MATH 2413 (Prerequisite), PHYS 2125 (Prerequisite or Corequisite)  
<sup>8</sup> PHYS 2325 (Prerequisite or Corequisite)  
<sup>9</sup> MATH 2413

### Computer Programming Technology Associate of Applied Science - Waco only

Semester 1		Credits
ITSE 1329	Programming Logic and Design	3
ITSW 1307	Introduction to Database	3
ACCT 2301	Principles of Financial Accounting	3
MATH 1314	College Algebra	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	3
Semester Total		15
Semester 2		Credits
ITSE 1307	Introduction to C++ Programming	3
ITSE 1311	Beginning Web Programming	3
ITSE 1330	Introduction to C# Programming <sup>1</sup>	3
ITSE 1332	Introduction to Visual Basic.NET Programming <sup>2</sup>	3
ACGM X3XX	Gen Ed Elective	3
Semester Total		15
Semester 3		Credits
ITSE 1306	PHP Programming <sup>3</sup>	3
ITSE 2317	Java Programming <sup>4</sup>	3
ITSE 2331	Advanced C++ Programming <sup>5</sup>	3
ITSE 2333	Implementing a Database on Microsoft SQL Server <sup>6</sup>	3
ITSE 2353	Advanced C# Programming <sup>7</sup>	3
Semester Total		15
Semester 4		Credits
GAME 1306	Design and Creation of Games <sup>8</sup>	3
INEW 2332	Comprehensive Software Project: Coding, Testing, and Implementation	3
ITSE 1392	Special Topics in Computer Programming	3
ITSE 2310	iOS Application Programming <sup>9</sup>	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	3
Semester Total		15
Program Total		60

#### Prerequisites

- <sup>1,2,3,8,9</sup> ITSE 1329  
<sup>4</sup> ITSE 1307 or ITSE 1329  
<sup>5</sup> ITSE 1307  
<sup>6</sup> ITSW 1307 or ITSE 1345  
<sup>7</sup> ITSE 1330

## Business Applications Programming

### Advanced Technology Certificate - Waco only

An associate degree in Computer Science is required prior to entry.

<b>Semester 1</b>		<b>Credits</b>
INEW 2338	Advanced Java Programming <sup>1</sup>	3
ITSE 2334	Advanced Visual Basic.NET Programming <sup>2</sup>	3
ITSE 2356	Oracle Database Administration I	3
ITSE 2371	Advanced IOS Programming <sup>3</sup>	<u>3</u>
<b>Semester Total</b>		<b>12</b>

<b>Semester 2</b>		<b>Credits</b>
INEW 1340	ASP.NET Programming <sup>4</sup>	3
ITNW 2352	Administering SQL Server <sup>5</sup>	3
ITSE 1333	Mobile Applications Development	3
ITSE 2345	Data Structures <sup>6</sup>	<u>3</u>
<b>Semester Total</b>		<b>12</b>

<b>Semester 3</b>		<b>Credits</b>
INEW 2330	Comprehension Software Project: Planning and Design <sup>7</sup>	3
ITSE 2343	Advanced Mobile Programming <sup>8</sup>	3
ITSE 2358	Oracle Database Administration II	3
ITSE 2459	Advanced Computer Programming	<u>4</u>
<b>Semester Total</b>		<b>13</b>

<b>Program Total</b>	<b>37</b>
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#### Prerequisites

<sup>1</sup> ITSE 2317

<sup>2</sup> ITSE 1332

<sup>3</sup> ITSE 2310

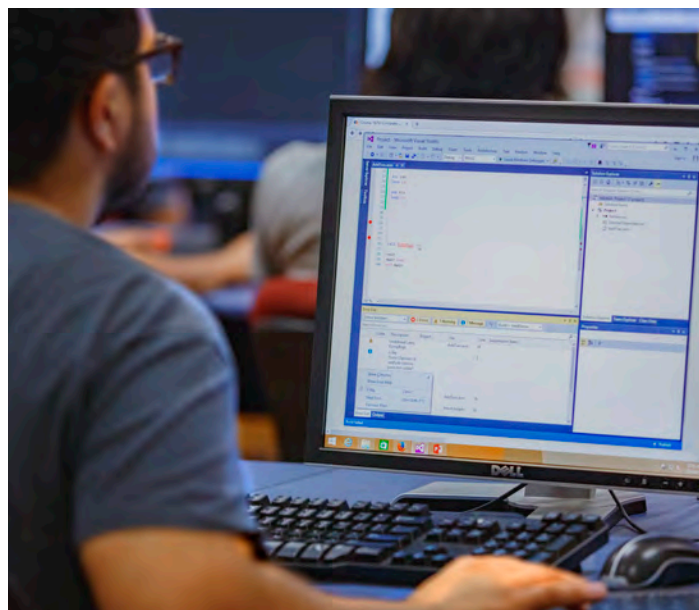
<sup>4</sup> ITSE 2334

<sup>5</sup> ITSW 1307 (Prerequisite) or ITNW 2354 (Prerequisite or Corequisite)

<sup>6</sup> ITSE 2331

<sup>7</sup> ITSE 2358, ITSE 2334, INEW 1340

<sup>8</sup> ITSE 1333



## Culinary Arts

As a Culinary Arts student at TSTC, you will be trained in a magnitude of hands-on skill sets and talents. The chef-instructors of TSTC Culinary are all highly trained professional chefs with years of industry experience and knowledge that will guide you in your professional journey while in school and out in your career. The TSTC Culinary Arts program is based in classical cooking techniques, food preparation, meat and seafood fabrication, baking, pastry, American regional and international cuisines, dining room services, purchasing and cost analysis. It culminates with the associate degree capstone course that allow you to run the kitchen with your cuisine. The Culinary Arts department at TSTC also teaches food-related topics, including nutrition, sanitation and safety, food service equipment, supervision and culinary math. For quicker entry into the industry, Culinary Assistant, Culinary Specialist and Culinarian certificates are available.

Culinary Arts is available at the Abilene, Harlingen, Waco and Williamson County campuses.



### Culinary Arts Associate of Applied Science

Semester 1		Credits
CHEF 1205	Sanitation and Safety	2
IFWA 1205	Food Service Equipment and Planning	2
IFWA 1217	Food Production and Planning	2
IFWA 1218	Nutrition for the Food Service Professional	2
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	<u>3</u>
	<b>Semester Total</b>	<b>11</b>

Semester 2		Credits
IFWA 1401	Food Preparation I <sup>1</sup>	4
PSTR 1301	Fundamentals of Baking <sup>2</sup>	3
RSTO 1304	Dining Room Service <sup>3</sup>	3
RSTO 1380	or Cooperative Education - Restaurant, Culinary, and Catering Management/Manager	
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	<u>3</u>
	<b>Semester Total</b>	<b>13</b>

Semester 3		Credits
IFWA 1427	Food Preparation II <sup>4</sup>	4
CHEF 1340	Meat Preparation and Cooking <sup>5</sup>	3
PSTR 2431	Advanced Pastry Shop <sup>6</sup>	4
ACGM X3XX	Gen Ed Elective	<u>3</u>
	<b>Semester Total</b>	<b>14</b>

Semester 4		Credits
CHEF 1441	American Regional Cuisine <sup>7</sup>	4
CHEF 1445	International Cuisine <sup>8</sup>	4
RSTO 1313	Hospitality Supervision	3
ACGM X3XX	Gen Ed Elective	<u>3</u>
	<b>Semester Total</b>	<b>14</b>

Semester 5		Credits
RSTO 2505	Management of Food Production and Service <sup>9</sup>	5
RSTO 1680	or Cooperative Education - Restaurant, Culinary, and Catering Management/Manager	
ACGM X3XX	Gen Ed Math/Natural Science Elective	<u>3</u>
	<b>Semester Total</b>	<b>8</b>
	<b>Program Total</b>	<b>60</b>

#### Prerequisites

<sup>1,2,3</sup> CHEF 1205, IFWA 1205, IFWA 1217

<sup>4,5</sup> IFWA 1401

<sup>6</sup> PSTR 1301

<sup>7,8</sup> IFWA 1427, PSTR 2431

<sup>9</sup> CHEF 1441, CHEF 1445, PSTR 2431, RSTO 1313 (Prerequisite or Corequisite)

## Culinarian Certificate 2

Semester 1	Credits
CHEF 1205 Sanitation and Safety	2
IFWA 1205 Food Service Equipment and Planning	2
IFWA 1217 Food Production and Planning	2
IFWA 1218 Nutrition for the Food Service Professional	<u>2</u>
<b>Semester Total</b>	<b>8</b>

Semester 2	Credits
IFWA 1401 Food Preparation I <sup>1</sup>	4
PSTR 1301 Fundamentals of Baking <sup>2</sup>	3
RSTO 1304 Dining Room Service <sup>3</sup>	<u>3</u>
RSTO 1380 or Cooperative Education - Restaurant, Culinary, and Catering Management/Manager	
<b>Semester Total</b>	<b>10</b>

Semester 3	Credits
IFWA 1427 Food Preparation II <sup>4</sup>	4
CHEF 1340 Meat Preparation and Cooking <sup>5</sup>	3
PSTR 2431 Advanced Pastry Shop <sup>6</sup>	<u>4</u>
<b>Semester Total</b>	<b>11</b>

Semester 4	Credits
CHEF 1441 American Regional Cuisine <sup>7</sup>	4
CHEF 1445 International Cuisine <sup>8</sup>	4
RSTO 1313 Hospitality Supervision	<u>3</u>
<b>Semester Total</b>	<b>11</b>

**Program Total** 40

### Prerequisites

<sup>1,2,3</sup> CHEF 1205, IFWA 1205, IFWA 1217

<sup>4,5</sup> IFWA 1401

<sup>6</sup> PSTR 1301

<sup>7,8</sup> IFWA 1427, PSTR 2431

## Culinary Assistant Certificate 1

Semester 1	Credits
CHEF 1205 Sanitation and Safety	2
IFWA 1205 Food Service Equipment and Planning	2
IFWA 1217 Food Production and Planning	2
IFWA 1218 Nutrition for the Food Service Professional	<u>2</u>
<b>Semester Total</b>	<b>8</b>

Semester 2	Credits
IFWA 1401 Food Preparation I <sup>1</sup>	4
PSTR 1301 Fundamentals of Baking <sup>2</sup>	3
RSTO 1304 Dining Room Service <sup>3</sup>	<u>3</u>
RSTO 1380 or Cooperative Education - Restaurant, Culinary, and Catering Management/Manager	
<b>Semester Total</b>	<b>10</b>

**Program Total** 18

### Prerequisites

<sup>1,2,3</sup> CHEF 1205, IFWA 1205, IFWA 1217



## Culinary Specialist Certificate 1

Semester 1	Credits
CHEF 1205 Sanitation and Safety	2
IFWA 1205 Food Service Equipment and Planning	2
IFWA 1217 Food Production and Planning	2
IFWA 1218 Nutrition for the Food Service Professional	<u>2</u>
<b>Semester Total</b>	<b>8</b>

Semester 2	Credits
IFWA 1401 Food Preparation I <sup>1</sup>	4
PSTR 1301 Fundamentals of Baking <sup>2</sup>	3
RSTO 1304 Dining Room Service <sup>3</sup>	<u>3</u>
RSTO 1380 or Cooperative Education - Restaurant, Culinary, and Catering Management/Manager	
<b>Semester Total</b>	<b>10</b>

Semester 3	Credits
CHEF 1340 Meat Preparation and Cooking <sup>4</sup>	3
IFWA 1427 Food Preparation II <sup>5</sup>	4
PSTR 2431 Advanced Pastry Shop <sup>6</sup>	<u>4</u>
<b>Semester Total</b>	<b>11</b>

**Program Total** 29

### Prerequisites

<sup>1,2,3</sup> CHEF 1205, IFWA 1205, IFWA 1217

<sup>4,5</sup> IFWA 1401

<sup>6</sup> PSTR 1301

## Cyber Security

There's a strong demand for those who understand the importance of protecting a company's data. It takes specialized skills and in-depth knowledge of computer networking, operating systems and administration, encryption, firewalls and much more.

The Cyber Security program (CYS) covers Cisco CCNA and CCNA Security networking courses, ethical issues and an introduction to digital forensics. Students will learn how to protect electronic data through both offensive and defensive tactics using industry-standard tools and software suites.

In addition, those who pursue the associate degree have the opportunity to further their skills in digital forensics with the Digital Forensics Advanced Technical Certificate.

Cyber Security is available at the Fort Bend County, Marshall, North Texas, Waco and Williamson County campuses.

### Cyber Security Associate of Applied Science Degree - Fort Bend County, Marshall, North Texas, Waco only

Semester 1	Credits
ITCC 1314 CCNA 1: Introduction to Networks	3
ITDF 1300 Introduction to Digital Forensics	3
ITSC 1325 Personal Computer Hardware	3
ENGL 1301 Composition I	<u>3</u>
<b>Semester Total</b>	<b>12</b>
Semester 2	Credits
ITCC 1340 CCNA 2: Routing and Switching Essentials	3
ITNW 1345 Implementing Network Directory Services	3
ITNW 1358 Network+ <sup>1</sup>	3
MATH 1332 Contemporary Mathematics (Quantitative Reasoning)	<u>3</u>
<b>Semester Total</b>	<b>12</b>
Semester 3	Credits
ITCC 2312 CCNA 3: Scaling Networks <sup>2</sup>	3
ITSC 1316 Linux Installation and Configuration <sup>3</sup>	3
ITSY 1342 Information Technology Security <sup>4</sup>	3
ACGM X3XX Gen Ed Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>
Semester 4	Credits
ITCC 2313 CCNA 4: Connecting Networks	3
ITSY 2301 Firewalls and Network Security <sup>5</sup>	3
ITSY 2343 Computer System Forensics <sup>6</sup>	3
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>

Semester 5	Credits
ITCC 2341 CCNA Security	3
ITSY 2330 Intrusion Detection <sup>7</sup>	3
ITSY 2359 Security Assessment and Auditing <sup>8</sup>	3
ACGM X3XX Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>

**Program Total 60**

#### Prerequisites

- <sup>1</sup> ITCC 1314  
<sup>2</sup> ITCC 1340  
<sup>3</sup> ITCC 1314 or ITNW 1325 or ITSC 1325  
<sup>4</sup> ITNW 1345 or ITNW 1354 (Prerequisite or Corequisite)  
<sup>5</sup> ITNW 1325 or ITNW 2312  
<sup>6</sup> ITDF 1300, ITSY 1342  
<sup>7</sup> ITSY 1342  
<sup>8</sup> ITSY 1342, ITSY 2301

### Cyber Security Certificate 2

Semester 1	Credits
ITCC 1314 CCNA 1: Introduction to Networks	3
ITDF 1300 Introduction to Digital Forensics	3
ITNW 1345 Implementing Network Directory Services	3
ITSC 1325 Personal Computer Hardware	<u>3</u>
<b>Semester Total</b>	<b>12</b>
Semester 2	Credits
ITCC 1340 CCNA 2: Routing and Switching Essentials	3
ITNW 1358 Network+ <sup>1</sup>	3
ITSC 1316 Linux Installation and Configuration <sup>2</sup>	3
ITSY 1342 Information Technology Security <sup>3</sup>	<u>3</u>
<b>Semester Total</b>	<b>12</b>
Semester 3	Credits
ITCC 2312 CCNA 3: Scaling Networks <sup>4</sup>	3
ITSY 2301 Firewalls and Network Security <sup>5</sup>	3
ITSY 2330 Intrusion Detection <sup>6</sup>	3
ITSY 2343 Computer System Forensics <sup>7</sup>	<u>3</u>
<b>Semester Total</b>	<b>12</b>
Semester 4	Credits
ITCC 2313 CCNA 4: Connecting Networks	3
ITCC 2341 CCNA Security	3
ITSY 2359 Security Assessment and Auditing <sup>8</sup>	<u>3</u>
<b>Semester Total</b>	<b>9</b>
<b>Program Total</b>	<b>45</b>

#### Prerequisites

- <sup>1</sup> ITCC 1314  
<sup>2</sup> ITCC 1314 or ITNW 1325 or ITSC 1325  
<sup>3</sup> ITNW 1345 or ITNW 1354 (Prerequisite or Corequisite)  
<sup>4</sup> ITCC 1340  
<sup>5</sup> ITNW 1325 or ITNW 2312  
<sup>6</sup> ITSY 1342  
<sup>7</sup> ITDF 1300, ITSY 1342  
<sup>8</sup> ITSY 1342, ITSY 2301

## Digital Forensics Specialist Advanced Technical Certificate - Waco only

<b>Semester 1</b>		<b>Credits</b>
ITDF 1390	Special Topics in Computer & Information Systems Security/Information Assurance	3
ITDF 2320	Digital Forensics Collection <sup>1</sup>	3
ITDF 2325	Digital Forensics Tools <sup>2</sup>	3
ITNW 1391	Special Topics in Information Sciences and Systems	<u>3</u>
<b>Semester Total</b>		<b>12</b>
<b>Semester 2</b>		<b>Credits</b>
CJSA 1393	Special Topics in Criminal Justice Studies	3
ITDF 2330	Digital Forensics Analysis <sup>3</sup>	3
ITDF 2335	Comprehensive Digital Forensics Project <sup>4</sup>	<u>3</u>
<b>Semester Total</b>		<b>9</b>
<b>Program Total</b>		<b>21</b>

### Prerequisites

<sup>1 2 3 4</sup> ITDF 1300 or ITDF 1305



## Database & Web Programming

TSTC provides the knowledge and skills needed to develop programming solutions that allow dynamic web pages to interact with databases. The Database & Web Programming Technology program also provides instruction in general programming solutions. The program presents hands-on experience with programming languages (C++, Visual Basic, PHP and Java), database systems (Access, MySQL, Microsoft SQL Server, Oracle) and the design and implementation of websites. The Database & Web program prepares students for jobs such as computer programmer, software developer, applications developer, web programmer, database programmer, internet programmer and computer software engineer.

Database & Web Programming Technology is available at the Abilene and Brownwood locations.

### Database & Web Programming Associate of Applied Science

Semester 1	Credits
ITSE 1311 Beginning Web Programming	3
ITSE 1329 Programming Logic and Design	3
ITSW 1307 Introduction to Database	3
ACGM X3XX Gen Ed Social/Behavioral Science Elective	3
ACGM X3XX Gen Ed Elective	3
<b>Semester Total</b>	<b>15</b>
Semester 2	Credits
ITSE 1330 Introduction to C# Programming <sup>1</sup>	3
ITSE 1332 Introduction to Visual Basic.Net Programming <sup>2</sup>	3
ITSE 2317 Java Programming <sup>3</sup>	3
ITSE 2333 Implementing a Database on Microsoft SQL Server <sup>4</sup>	3
ACGM X3XX Gen Ed Elective	3
<b>Semester Total</b>	<b>15</b>
Semester 3	Credits
INEW 2338 Advanced Java Programming <sup>5</sup>	3
ITNW 2352 Administering SQL Server <sup>6</sup>	3
ITSE 2309 Database Programming	3
ITSE 2310 iOS Application Programming <sup>7</sup>	3
ITSE 2347 Advanced Database Programming	3
<b>Semester Total</b>	<b>15</b>
Semester 4	Credits
INEW 2332 Comprehensive Software Project: Coding, Testing, and Implementation or Internship - Computer Programming/ Programmer, General	3
ITSE 2359 Advanced Computer Programming <sup>8</sup>	3
ITSE 1350 System Analysis & Design	3
ACGM X3XX Gen Ed Math/Natural Science Elective	3
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	3
<b>Semester Total</b>	<b>15</b>
<b>Program Total</b>	<b>60</b>

#### Prerequisites

<sup>1,2,7</sup> ITSE 1329

<sup>3</sup> ITSE 1307 or ITSE 1329

<sup>4</sup> ITSW 1307 or ITSE 1345

<sup>5</sup> ITSE 2317

<sup>6</sup> ITNW 2354 (Prerequisite or Corequisite) OR ITSW 1307 (Prerequisite)

<sup>8</sup> ITSE 2309

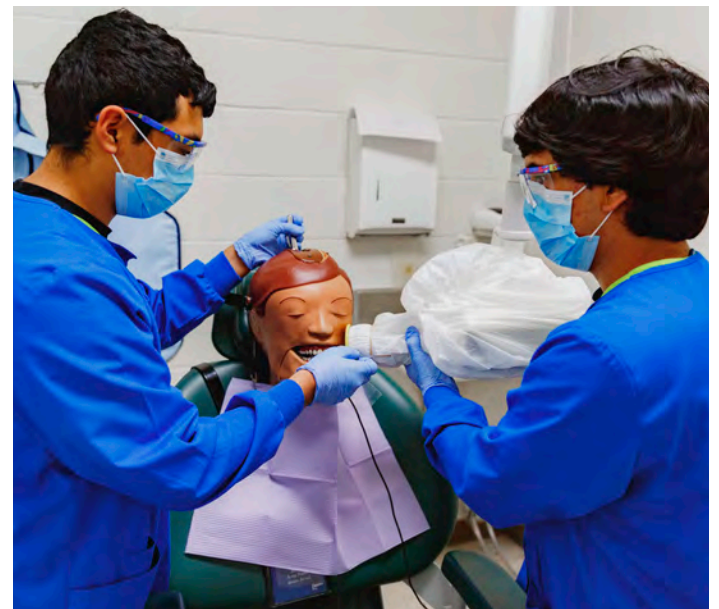
## Dental Assistant

As a TSTC Dental Assistant student, you can learn the latest skills and techniques with experienced faculty members who provide individualized instruction and attention, as well as hands-on training. The Certificate of Completion program focuses on teaching you the skills needed on the job, skills like measuring blood pressure, taking X-rays, preparing study models and applying four-handed dentistry techniques.

Dental Assistant is available at the Harlingen and Waco campuses.

### Dental Assistant Certificate 1

Semester 1	Credits
DNTA 1241 Dental Laboratory Procedures	2
DNTA 1305 Dental Radiology	3
DNTA 1351 Dental Office Management	3
DNTA 1415 Chairside Assisting	4
<b>Semester Total</b>	<b>12</b>
Semester 2	Credits
DNTA 1301 Dental Materials	3
DNTA 1353 Dental Assisting Applications	3
DNTA 1660 Clinical - Dental Assisting/Assistant	6
<b>Semester Total</b>	<b>12</b>
<b>Program Total</b>	<b>24</b>



# Dental Hygiene

The Dental Hygiene program at TSTC prepares students for the industry of preventative dentistry with a well-rounded curriculum that includes preventative dental hygiene, pharmacology, periodontology, pathology, dental nutrition and more. Dental Hygiene students at TSTC are able to fulfill their clinical experiences at a beautiful, state-of-the-art dental clinic on campus. The students utilize the 13-chair clinic to receive over 600 hours of instruction in a 1-faculty-to-5-student ratio. External clinical experiences also allow a wide variety of patient treatment. Graduates of the program are well prepared to successfully complete the National Dental Hygiene Board and the Western Regional Board Examination, as well as the Texas Jurisprudence Examination for licensure.

Dental Hygiene is available at the Harlingen campus.



## Dental Hygiene Associate of Applied Science

Semester 1		Credits
BIOL 2101	Anatomy & Physiology I (lab) <sup>1</sup>	1
BIOL 2301	Anatomy & Physiology I (lecture) <sup>2</sup>	3
CHEM 1105	Introductory Chemistry Laboratory I (lab)	1
CHEM 1305	Introductory Chemistry I (lecture) <sup>3</sup>	3
ENGL 1301	Composition I	3
SPCH X3XX	Gen Ed Speech Elective	<u>3</u>
Semester Total		14
Semester 2		Credits
DHYG 1227	Preventive Dental Hygiene Care	2
DHYG 1301	Orofacial Anatomy, Histology & Embryology	3
DHYG 1331	Preclinical Dental Hygiene	3
BIOL 2302	Anatomy & Physiology II (lecture) <sup>4</sup>	3
BIOL 2102	Anatomy & Physiology II (lab) <sup>5</sup>	<u>1</u>
Semester Total		12
Semester 3		Credits
DHYG 1211	Periodontology	2
DHYG 1260	Clinical - Dental Hygiene/Hygienist <sup>6</sup>	2
DHYG 1304	Dental Radiology	3
BIOL 2120	Microbiology for Non-Science Majors Laboratory (lab) <sup>7</sup>	1
BIOL 2320	Microbiology for Non-Science Majors (lecture) <sup>8</sup>	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	<u>3</u>
Semester Total		14
Semester 4		Credits
DHYG 1319	Dental Materials	3
DHYG 1235	Pharmacology for the Dental Hygienist	2
DHYG 1261	Clinical - Dental Hygiene/Hygienist <sup>9</sup>	2
SOCI 1301	Introduction to Sociology	<u>3</u>
Semester Total		10

Semester 5		Credits
DHYG 1215	Community Dentistry	2
DHYG 1239	General and Oral Pathology	2
DHYG 2360	Clinical - Dental Hygiene/Hygienist <sup>10</sup>	3
PSYC 2301	General Psychology	3
DHYG 2201	Dental Hygiene Care I	<u>2</u>
Semester Total		12
Semester 6		Credits
DHYG 2153	Dental Hygiene Practice	1
DHYG 2361	Clinical - Dental Hygiene/Hygienist <sup>11</sup>	3
DHYG 1207	General and Dental Nutrition	<u>2</u>
Semester Total		6
Program Total		68

### Prerequisites

- <sup>1</sup> BIOL 2301 (Prerequisite or Corequisite)
- <sup>2</sup> BIOL 2101 (Prerequisite or Corequisite)
- <sup>3</sup> CHEM 1105 (Prerequisite or Corequisite)
- <sup>4</sup> BIOL 2102 (Prerequisite or Corequisite)
- <sup>5</sup> BIOL 2302 (Prerequisite or Corequisite)
- <sup>6</sup> DHYG 1331
- <sup>7</sup> BIOL 2320 (Prerequisite or Corequisite)
- <sup>8</sup> BIOL 2120 (Prerequisite or Corequisite)
- <sup>9</sup> DHYG 1260
- <sup>10</sup> DHYG 1261
- <sup>11</sup> DHYG 2360

## Diesel Equipment Technology\*

TSTC's Diesel Equipment Technology program offers several avenues of entry into the workforce: Off-Highway Equipment, Heavy Truck, and John Deere Construction & Forestry. TSTC's field-experienced faculty members work closely with related diesel industries to develop curriculum that meets workforce demands. Diesel Equipment Technology students will learn diesel engine testing and repair, brake systems, HVAC troubleshooting and repair, electrical systems, hydraulics, failure analysis and more. Because of the vast uses of highly advanced pneumatic, hydraulic and electronic systems technology, industry needs quality-trained technicians to repair and maintain the equipment, and TSTC students learn from skilled craftsmen who have actual field experience. For quicker entry into the industry, certificates are also available.

Diesel Equipment Technology is available at the Fort Bend County, Marshall, North Texas, Sweetwater and Waco campuses.

\*This program is eligible for a Money-Back Guarantee. Visit page 89 for more details.

### Diesel Equipment Technology Heavy Truck Specialization

#### Associate of Applied Science -

Fort Bend County, North Texas, Sweetwater, Waco only

Semester 1	Credits
DEMR 1301 Shop Safety and Procedures	3
DEMR 1410 Diesel Engine Testing and Repair I	4
DEMR 2412 Diesel Engine Testing and Repair II <sup>1</sup>	4
DEMR 1317 Basic Brake Systems	3
ENGL 1301 Composition I	<u>3</u>
<b>Semester Total</b>	<b>17</b>

Semester 2	Credits
DEMR 1305 Basic Electrical Systems	3
DEMR 1316 Basic Hydraulics	3
DEMR 1321 Power Train I	3
DEMR 1323 Heating, Ventilation, and Air Conditioning (HVAC) Troubleshooting and Repair	3
ACGM X3XX Gen Ed Math/Natural Science Elective	<u>3</u>
<b>Semester Total</b>	<b>15</b>

Semester 3	Credits
DEMR 1447 Power Train II <sup>2</sup>	4
DEMR 1327 Tractor Trailer Service and Repair	3
DEMR 1330 Steering and Suspension I	3
DEMR 1329 or Preventative Maintenance	
DEMR 1380 Cooperative Education - Diesel Mechanics Technology/Technician	3
DEMR 2348 or Failure Analysis	
ACGM X3XX Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>	<b>16</b>

Semester 4	Credits
DEMR 2332 Electronic Controls <sup>3</sup>	3
DEMR 2334 Advanced Diesel Tune-Up and Troubleshooting <sup>4</sup>	3
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	3
ACGM X3XX Gen Ed Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>

**Program Total** **60**

#### Prerequisites

<sup>1</sup> DEMR 1410 (Prerequisite or Corequisite)

<sup>2</sup> DEMR 1321 or DEMR 1421

<sup>3</sup> DEMR 1305

<sup>4</sup> DEMR 2412, DEMR 2312 or AUMT 2417

### Diesel Equipment Technology-Heavy Truck

#### Certificate 1 - Fort Bend County, North Texas,

Sweetwater, Waco only

Semester 1	Credits
DEMR 1301 Shop Safety and Procedures	3
DEMR 1317 Basic Brake Systems	3
DEMR 1410 Diesel Engine Testing and Repair I	4
DEMR 2412 Diesel Engine Testing and Repair II <sup>1</sup>	<u>4</u>
<b>Semester Total</b>	<b>14</b>

Semester 2	Credits
DEMR 1305 Basic Electrical Systems	3
DEMR 1316 Basic Hydraulics	3
DEMR 1321 Power Train I	3
DEMR 1323 Heating, Ventilation, and Air Conditioning (HVAC) Troubleshooting and Repair	<u>3</u>
<b>Semester Total</b>	<b>12</b>

Semester 3	Credits
DEMR 1327 Tractor Trailer Service and Repair	3
DEMR 1330 Steering and Suspension I	3
DEMR 1329 or Preventative Maintenance	
DEMR 1447 Power Train II <sup>2</sup>	<u>4</u>
<b>Semester Total</b>	<b>10</b>

**Program Total** **36**

#### Prerequisites

<sup>1</sup> DEMR 1410 (Prerequisite or Corequisite)

<sup>2</sup> DEMR 1321 or DEMR 1421

## Diesel Equipment Technology Heavy Truck Certificate 2 - North Texas, Sweetwater, Waco only

Semester 1	Credits
DEMR 1301 Shop Safety and Procedures	3
DEMR 1410 Diesel Engine Testing and Repair I	4
DEMR 2412 Diesel Engine Testing and Repair II <sup>1</sup>	4
DEMR 1317 Basic Brake Systems	<u>3</u>
<b>Semester Total</b>	<b>14</b>

Semester 2	Credits
DEMR 1305 Basic Electrical Systems	3
DEMR 1316 Basic Hydraulics	3
DEMR 1321 Power Train I	3
DEMR 1323 Heating, Ventilation, and Air Conditioning (HVAC) Troubleshooting and Repair	<u>3</u>
<b>Semester Total</b>	<b>12</b>

Semester 3	Credits
DEMR 1447 Power Train II <sup>2</sup>	4
DEMR 1327 Tractor Trailer Service and Repair	3
DEMR 1330 Steering and Suspension I	<u>3</u>
DEMR 1329 or Preventative Maintenance	
<b>Semester Total</b>	<b>10</b>

Semester 4	Credits
DEMR 1380 Cooperative Education - Diesel Mechanics Technology/Technician	3
DEMR 2348 or Failure Analysis	
DEMR 2332 Electronic Controls <sup>3</sup>	3
DEMR 2334 Advanced Diesel Tune-Up and Troubleshooting <sup>4</sup>	<u>3</u>
<b>Semester Total</b>	<b>9</b>

**Program Total** 45

### Prerequisites

<sup>1</sup> DEMR 1410 (Prerequisite or Corequisite)

<sup>2</sup> DEMR 1321 or DEMR 1421

<sup>3</sup> DEMR 1305

<sup>4</sup> DEMR 2412 DEMR 2312 or AUMT 2417

## Diesel Equipment Technology-John Deere Construction & Forestry Associate of Applied Science - Waco only

Semester 1	Credits
DEMR 1301 Shop Safety and Procedures	3
DEMR 1410 Diesel Engine Testing and Repair I	4
DEMR 2412 Diesel Engine Testing and Repair II <sup>1</sup>	4
ENGL 1301 Composition I	<u>3</u>
<b>Semester Total</b>	<b>14</b>

Semester 2	Credits
DEMR 1305 Basic Electrical Systems	3
DEMR 1316 Basic Hydraulics	3
DEMR 1321 Power Train I	3
DEMR 1323 Heating, Ventilation, and Air Conditioning (HVAC) Troubleshooting and Repair	3
PHYS 1315 Physical Science I (lecture)	<u>3</u>
<b>Semester Total</b>	<b>15</b>

Semester 3	Credits
DEMR 1680 Cooperative Education - Diesel Mechanics Technology/Technician	<u>6</u>
<b>Semester Total</b>	<b>6</b>

Semester 4	Credits
DEMR 2335 Advanced Hydraulics <sup>2</sup>	3
DEMR 2344 Automatic Power Shift and Hydrostatic Transmissions II <sup>3</sup>	3
HEMR 1401 Tracks and Undercarriages	4
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	<u>3</u>
<b>Semester Total</b>	<b>13</b>

Semester 5	Credits
DEMR 2332 Electronic Controls <sup>4</sup>	3
DEMR 2348 Failure Analysis	3
ACGM X3XX Gen Ed Social/Behavioral Science Elective	3
BUSI 2301 Business Law	<u>3</u>
<b>Semester Total</b>	<b>12</b>

**Program Total** 60

### Prerequisites

<sup>1</sup> DEMR 1410 (Prerequisite or Corequisite)

<sup>2</sup> DEMR 1316 or DEMR 1416

<sup>3</sup> DEMR 1321 or DEMR 2312 or DEMR 2412

<sup>4</sup> DEMR 1305

## Diesel Equipment Technology Off-Highway Specialization Associate of Applied Science - Marshall, Waco only

Semester 1	Credits
DEMR 1301 Shop Safety and Procedures	3
DEMR 1410 Diesel Engine Testing and Repair I	4
DEMR 2412 Diesel Engine Testing and Repair II <sup>1</sup>	4
DEMR 1317 Basic Brake Systems	3
ENGL 1301 Composition I	<u>3</u>
<b>Semester Total</b>	<b>17</b>

Semester 2	Credits
DEMR 1305 Basic Electrical Systems	3
DEMR 1316 Basic Hydraulics	3
DEMR 1321 Power Train I	3
DEMR 1323 Heating, Ventilation, and Air Conditioning (HVAC) Troubleshooting and Repair	3
ACGM X3XX Gen Ed Math/Natural Science Elective	<u>3</u>
<b>Semester Total</b>	<b>15</b>

Semester 3	Credits
HEMR 1401 Tracks and Undercarriages	4
AGME 1353 Harvesting Equipment	3
HEMR 1304 or Natural Gas Compression	
DEMR 2335 Advanced Hydraulics <sup>2</sup>	3
DEMR 2344 Automatic Power Shift and Hydrostatic Transmissions II <sup>3</sup>	3
ACGM X3XX Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>	<b>16</b>

**Semester 4**

	<b>Credits</b>
DEMR 2332 Electronic Controls <sup>4</sup>	3
DEMR 2334 Advanced Diesel Tune-Up and Troubleshooting <sup>5</sup>	3
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	3
ACGM X3XX Gen Ed Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>
<b>Program Total</b>	<b>60</b>

**Prerequisites**<sup>1</sup> DEMR 1410 (Prerequisite or Corequisite)<sup>2</sup> DEMR 1316 or DEMR 1416<sup>3</sup> DEMR 1321 or DEMR 2312 or DEMR 2412<sup>4</sup> DEMR 1305<sup>5</sup> DEMR 2412, DEMR 2312 or AUMT 2417

## Diesel Equipment Technology Off-Highway Equipment Certificate 1 - Marshall, Waco only

**Semester 1**

	<b>Credits</b>
DEMR 1301 Shop Safety and Procedures	3
DEMR 1317 Basic Brake Systems	3
DEMR 1410 Diesel Engine Testing and Repair I	4
DEMR 2412 Diesel Engine Testing and Repair II <sup>1</sup>	<u>4</u>
<b>Semester Total</b>	<b>14</b>

**Semester 2**

	<b>Credits</b>
DEMR 1305 Basic Electrical Systems	3
DEMR 1316 Basic Hydraulics	3
DEMR 1321 Power Train I	3
DEMR 1323 Heating, Ventilation, and Air Conditioning (HVAC) Troubleshooting and Repair	<u>3</u>
<b>Semester Total</b>	<b>12</b>

**Semester 3**

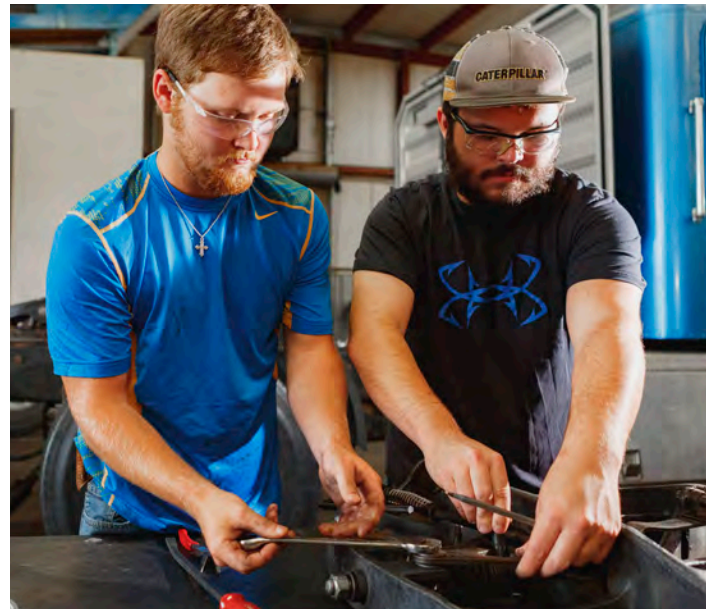
	<b>Credits</b>
AGME 1353 Harvesting Equipment	3
HEMR 1304 or Natural Gas Compression	
HEMR 1401 Tracks and Undercarriages	4
DEMR 2344 Automatic Power Shift and Hydrostatic Transmissions II <sup>2</sup>	<u>3</u>
<b>Semester Total</b>	<b>10</b>
<b>Program Total</b>	<b>36</b>

**Prerequisites**<sup>1</sup> DEMR 1410 (Prerequisite or Corequisite)<sup>2</sup> DEMR 1321 or DEMR 2312 or DEMR 2412

## Diesel Equipment Technology Off-Highway Specialization Certificate 2 - Fort Bend County, Marshall, Waco only

**Semester 1**

	<b>Credits</b>
DEMR 1301 Shop Safety and Procedures	3
DEMR 1410 Diesel Engine Testing and Repair I	4
DEMR 2412 Diesel Engine Testing and Repair II <sup>1</sup>	4
DEMR 1317 Basic Brake Systems	<u>3</u>
<b>Semester Total</b>	<b>14</b>

**Semester 2**

	<b>Credits</b>
DEMR 1305 Basic Electrical Systems	3
DEMR 1316 Basic Hydraulics	3
DEMR 1321 Power Train I	3
DEMR 1323 Heating, Ventilation, and Air Conditioning (HVAC) Troubleshooting and Repair	<u>3</u>
<b>Semester Total</b>	<b>12</b>

**Semester 3**

	<b>Credits</b>
HEMR 1401 Tracks and Undercarriages	4
AGME 1353 Harvesting Equipment	3
HEMR 1304 or Natural Gas Compression	
DEMR 2335 Advanced Hydraulics <sup>2</sup>	3
DEMR 2344 Automatic Power Shift and Hydrostatic Transmissions II <sup>3</sup>	<u>3</u>
<b>Semester Total</b>	<b>13</b>

**Semester 4**

	<b>Credits</b>
DEMR 2332 Electronic Controls <sup>4</sup>	3
DEMR 2334 Advanced Diesel Tune-Up and Troubleshooting <sup>5</sup>	<u>3</u>
<b>Semester Total</b>	<b>6</b>

**Program Total****45****Prerequisites**<sup>1</sup> DEMR 1410 (Prerequisite or Corequisite)<sup>2</sup> DEMR 1316 or DEMR 1416<sup>3</sup> DEMR 1321 or DEMR 2312 or DEMR 2412<sup>4</sup> DEMR 1305<sup>5</sup> DEMR 2412, DEMR 2312 or AUMT 2417

## Digital Media Design

While you watch commercials, do you think to yourself, "I could do that better"? When you pass by a billboard, do you say to yourself, "I can't even read that"? In the Digital Media Design program, our goal is to inspire and teach a new generation of media artists how to be employable in the print, photography, videography and web design industries. We'll show you the techniques necessary to produce quality media design, and equip you with tools to grow as creative thinkers and innovators. Students in this program will manipulate sound, still images, 3-D images, animations and digital video on computers. This program will provide training in desktop publishing, painting, drawing, color correction, solids modeling, animation, sound editing, nonlinear video editing web, page creating, photography, 3-D printing, marking and design. For quicker entry into the industry, a certificate is also available.

Digital Media Design is available at the Abilene and Harlingen campuses.



### Digital Media Design Associate of Applied Science

#### Semester 1

	Credits
ARTC 1302 Digital Imaging I	3
ARTC 1317 Design Communication I	3
ARTV 1345 or 3-D Modeling and Rendering I	
GRPH 1359 Vector Graphics for Production	3
ACGM X3XX Gen Ed Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>

#### Semester 2

	Credits
ARTC 1313 Digital Publishing I <sup>1</sup>	3
ARTC 2347 Design Communication II <sup>2</sup>	3
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	3
ACGM X3XX Gen Ed Math/Natural Science Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>

#### Semester 3

	Credits
ARTC 2305 Digital Imaging II <sup>3</sup>	3
ARTC 2313 Digital Publishing II <sup>4</sup>	3
ARTV 1351 Digital Video	3
PHTC 1311 Fundamentals of Photography <sup>5</sup>	<u>3</u>
<b>Semester Total</b>	<b>12</b>

#### Semester 4

	Credits
ARTV 2341 Advanced Digital Video <sup>6</sup>	3
IMED 1316 Web Design I <sup>7</sup>	3
IMED 1345 Interactive Digital Media I	3
ACGM X3XX Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>

#### Semester 5

	Credits
ARTC 2335 Portfolio Development for Graphic Design	3
IMED 2315 Web Design II <sup>8</sup>	3
MRKG 2349 Advertising and Sales Promotion	3
ARTV 2345 or 3-D Modeling and Rendering II <sup>9</sup>	
ACGM X3XX Gen Ed Math/Natural Science Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>

#### Program Total

**60**

#### Prerequisites

<sup>1</sup> ARTC 1302 or ARTC 1305

<sup>2</sup> ARTC 1317 or ARTC 1302

<sup>3</sup> ARTC 1302

<sup>4</sup> ARTC 1313

<sup>5</sup> ARTC 1302 (Prerequisite or Corequisite)

<sup>6,9</sup> ARTV 1351

<sup>7</sup> ITSE 1311 or ARTC 1302 (Prerequisite or Corequisite)

<sup>8</sup> IMED 1316

## Education & Training

The Education & Training program is designed to prepare students to meet the demands of an increasingly competitive and intellectually challenging future through educational and personal growth, practical skills development, academic courses and career preparation. The program allows students to gain specialized training in one of four developed educational areas of emphasis and is composed of educational classes with technical labs for hands-on learning. The students will create and develop instructional materials ready to be used in the school setting utilizing a variety of state-of-the-art media and technical resources. For quicker entry into the industry, a certificate is also available.

Education & Training is available at the Harlingen campus.

### Education & Training Associate of Applied Science

Semester 1		Credits
EDTC 1301	Educational Systems	3
EDTC 1341	Instructional Technology and Computer Applications	3
ENGL 1301	Composition I	3
HIST 1301	United States History I	3
<b>Semester Total</b>		<b>12</b>

Semester 2		Credits
CDEC 1359	Children with Special Needs	3
EDTC 2311	Instructional Practices and Effective Learning Environments	3
HIST 1302	United States History II	3
SPCH 1315	Public Speaking	3
<b>Semester Total</b>		<b>12</b>

Semester 3		Credits
EDTC 1307	Introduction to Teaching Reading	3
TECA 1354	Child Growth & Development	3
GOVT 2305	Federal Government (Federal Constitution & topics)	3
MATH 1314	College Algebra	3
WECM X3XX	Area of Emphasis Course 1 <sup>1</sup>	3
<b>Semester Total</b>		<b>15</b>

Semester 4		Credits
EDTC 1374	Teaching Math & Science in the Elementary School	3
EDTC 2317	Guiding Student Behavior	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	3
WECM X3XX	Area of Emphasis Course 2 <sup>2</sup>	3
<b>Semester Total</b>		<b>12</b>

Semester 5		Credits
EDTC 1364	Practicum (or Field Experience) - Teacher Assistant/Aide	3
CDEC 1318	Wellness of the Young Child	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	3
<b>Semester Total</b>		<b>9</b>

**Program Total** 60



<sup>1</sup> WECM X3XX Area of Emphasis Course1  
EDTC 1321, EDTC 1325, CDEC 1321, CDEC 1356  
EDTC 1373, EDTC 2305, CDEC 2340, EDTC 1375

<sup>2</sup> WECMX3XX Area of Emphasis Course2  
EDTC 1321, EDTC 1325, CDEC 1321, CDEC 1356  
EDTC 1373, EDTC 2305, CDEC 2340, EDTC 1375

WECM X3XX Area of Emphasis Courses		Credits
EDTC 1321	Bilingual Education	3
EDTC 1325	Multicultural Education	3
CDEC 1321	The Infant and Toddler	3
CDEC 1356	Emergent Literacy for Early Childhood	3
EDTC 1373	Writing Problems	3
EDTC 2305	Reading Problems	3
CDEC 2340	Instructional Techniques for Children with Special Needs	3
EDTC 1375	Issues in Special Needs Education <sup>3</sup>	3

#### Prerequisites

<sup>3</sup> CDEC 1359 (Prerequisite)

### Education & Training Certificate 2

Semester 1		Credits
EDTC 1301	Educational Systems	3
EDTC 1341	Instructional Technology and Computer Applications	3
HIST 1301	United States History I	3
SPCH X3XX	Gen Ed Speech Elective	3
<b>Semester Total</b>		<b>12</b>

<b>Semester 2</b>		<b>Credits</b>
CDEC 1318	Wellness of the Young Child	3
CDEC 1359	Children with Special Needs	3
EDTC 2311	Instructional Practices and Effective Learning Environments	3
HIST 1302	United States History II	3
ENGL 1301	Composition I	<u>3</u>
<b>Semester Total</b>		<b>15</b>

<b>Semester 3</b>		<b>Credits</b>
EDTC 2317	Guiding Student Behavior	3
TECA 1354	Child Growth & Development	3
GOVT 2305	Federal Government (Federal Constitution & topics)	3
MATH 1314	College Algebra	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	<u>3</u>
<b>Semester Total</b>		<b>15</b>

<b>Semester 4</b>		<b>Credits</b>
EDTC 1164	Practicum (or Field Experience) - Teacher Assistant/Aide	1
WECM X3XX	Area of Emphasis Course <sup>1</sup>	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>		<b>7</b>
<b>Program Total</b>		<b>49</b>

<sup>1</sup> WECM X3XX Area of Emphasis Course  
EDTC 1321, EDTC 1325, CDEC-1321  
CDEC 1356, EDTC 1373, EDTC 2305, CDEC 2340, EDTC 1375

<b>WECM X3XX Area of Emphasis Courses</b>		<b>Credits</b>
EDTC 1321	Bilingual Education	3
EDTC 1325	Multicultural Education	3
CDEC 1321	The Infant and Toddler	3
CDEC 1356	Emergent Literacy for Early Childhood	3
EDTC 1373	Writing Problems	3
EDTC 2305	Reading Problems	3
CDEC 2340	Instructional Techniques for Children with Special Needs	3
EDTC 1375	Issues in Special Needs Education <sup>2</sup>	3

#### Prerequisites

<sup>2</sup> CDEC 1359

## Electrical Construction

The Electrical Construction certificate program offers specific coursework in residential and commercial wiring systems. The program also provides training opportunities to aid individuals interested in earning licenses specific to the electrical field. The program requires extensive hands-on work with electrical distribution and service applications. Curriculum teaches students blueprint reading, technical calculations, electrical safety and theory, residential and commercial wiring, and more. Most graduates will begin their careers as assistants to experienced electricians, installing electrical wiring in new construction and servicing wiring in existing structures.

Electrical Construction is available at the Waco campus.

## Electrical Construction Certificate 1

<b>Semester 1</b>		<b>Credits</b>
CNBT 1300	Residential and Light Commercial Blueprint Reading	3
CNBT 1346	Construction Estimating I	3
ELPT 1329	Residential Wiring	3
ITSC 1309	Integrated Software Applications I	3
TECM 1303	Technical Calculations	<u>3</u>
<b>Semester Total</b>		<b>15</b>

<b>Semester 2</b>		<b>Credits</b>
ELPT 1225	National Electrical Code I	2
ELPT 1311	Basic Electrical Theory	3
ELPT 1345	Commercial Wiring	3
MRKG 1301	Customer Relationship Management	3
OSHT 1305	OSHA Regulations - Construction Industry	<u>3</u>
<b>Semester Total</b>		<b>14</b>

<b>Semester 3</b>		<b>Credits</b>
ELPT 1340	Master Electrician Exam Review I <sup>1</sup>	3
ELPT 1341	Motor Control <sup>2</sup>	3
ELPT 1357	Industrial Wiring	3
ELPT 2305	Motors and Transformers	<u>3</u>
<b>Semester Total</b>		<b>12</b>

**Program Total** **41**

#### Prerequisites

<sup>1</sup> ELPT 1225

<sup>2</sup> ELPT 1311 or CETT 1303 or IEIR 1371

## Electrical Lineworker Technology\*

Lineworker occupations are among the most physically demanding but highest-paying careers in the nation, and Texas employs more than any other state. In TSTC's Electrical Lineworker program, you'll perform practical exercises on the safe use and operation of lineworker climbing gear, equipment and tools in an authentic utility training environment. To earn high wages in this exciting career, you must be able to work at elevated heights for long hours in all weather conditions. This industry is for those who want to reap the rewarding benefits of a high-demand career. Please note: Candidates will be required to have a commercial driver's license for employment in the lineworker field and must obtain a CDL either on their own before entering the program (preferred) or after graduation from the program.

Electrical Lineworker Technology is available at the Fort Bend County, Marshall and Waco campuses.

\*This program is eligible for a Money-Back Guarantee. Visit page 89 for more details.

### Electrical Lineworker Technology Associate of Applied Science

<b>Semester 1</b>		<b>Credits</b>
ELPT 1215	Electrical Calculations I	2
LNWK 1211	Climbing Skills	2
LNWK 1241	Distribution Operations	2
LNWK 1301	Orientation and Line Skill Fundamentals	3
LNWK 1391	Special Topics in Lineworker	<u>3</u>
<b>Semester Total</b>		<b>12</b>
<b>Semester 2</b>		<b>Credits</b>
CETT 1303	DC Circuits	3
LNWK 2321	Live Line Safety	3
LNWK 2322	Distribution Line Construction	3
OSHT 1305	OSHA Regulations - Construction Industry	<u>3</u>
<b>Semester Total</b>		<b>12</b>
<b>Semester 3</b>		<b>Credits</b>
LNWK 1331	Transformer Connections	3
LNWK 2324	Troubleshooting Distribution Systems	3
ELPT 1329	Residential Wiring	3
HYDR 1301	and Rigging and Conveying Systems	<u>3</u>
ELPT 1680	or Cooperative Education - Electrical and Power Transmission Installation/Installer, General	
<b>Semester Total</b>		<b>12</b>

<b>Semester 4</b>		<b>Credits</b>
CETT 1305	AC Circuits <sup>1</sup>	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	3
ACGM X3XX	Gen Ed Math/Natural Science Elective	<u>3</u>
<b>Semester Total</b>		<b>12</b>

<b>Semester 5</b>		<b>Credits</b>
ELPT 2335	Electrical Theory and Devices <sup>2</sup>	3
ELPT 2347	Electrical Testing and Maintenance	3
ACGM X3XX	Gen Ed Elective	3
ACGM X3XX	Gen Ed Elective	<u>3</u>
<b>Semester Total</b>		<b>12</b>

<b>Program Total</b>	<b>60</b>
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#### Prerequisites

<sup>1</sup> CETT 1303 or IEIR 1302 (Prerequisite or Corequisite)

<sup>2</sup> CETT 1305 or MATH 1316

### Electrical Lineworker Certificate 1

<b>Semester 1</b>		<b>Credits</b>
ELPT 1215	Electrical Calculations I	2
LNWK 1211	Climbing Skills	2
LNWK 1241	Distribution Operations	2
LNWK 1301	Orientation and Line Skill Fundamentals	3
LNWK 1391	Special Topics in Lineworker	<u>3</u>
<b>Semester Total</b>		<b>12</b>

<b>Semester 2</b>		<b>Credits</b>
CETT 1303	DC Circuits	3
LNWK 2321	Live Line Safety	3
LNWK 2322	Distribution Line Construction	3
OSHT 1305	OSHA Regulations - Construction Industry	<u>3</u>
<b>Semester Total</b>		<b>12</b>

<b>Semester 3</b>		<b>Credits</b>
LNWK 1331	Transformer Connections	3
LNWK 2324	Troubleshooting Distribution Systems	3
ELPT 1329	Residential Wiring	3
HYDR 1301	and Rigging and Conveying Systems	<u>3</u>
ELPT 1680	or Cooperative Education - Electrical and Power Transmission Installation/Installer, General	
<b>Semester Total</b>		<b>12</b>

<b>Program Total</b>	<b>36</b>
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## Electrical Power & Controls\*

The Electrical Power & Controls program offers instruction in engineering and design; installation and calibration; maintenance, testing and troubleshooting; computer instrumentation; and robotics interfacing. Through intensive classroom instruction and hands-on experience in high-tech labs, students gain a solid foundation in basic electrical concepts, motors and control applications, then advance to electronics, measurement and calibration, electrical codes and automated control systems. Knowledge is developed through extensive work with equipment, including DC and AC motors, PLCs, speed-drive systems, and computer software packages for engineering, designing and drafting.

Electrical Power & Controls is available at the Abilene, Fort Bend County, Marshall, North Texas, Waco and Williamson County campuses.

\*This program is eligible for a Money-Back Guarantee. Visit page 89 for more details.

### Electrical Power & Controls Associate of Applied Science - Abilene, Fort Bend County, North Texas, Waco only

Semester 1	Credits
CETT 1303 DC Circuits	3
ELPT 1321 Introduction to Electrical Safety and Tools	3
MATH 1316 Plane Trigonometry	3
ACGM X3XX Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>

Semester 2	Credits
CETT 1305 AC Circuits <sup>1</sup>	3
ELPT 1341 Motor Control <sup>2</sup>	3
ENGL 2311 Technical & Business Writing	3
ENGL 1301 or Composition I	
ACGM X3XX Gen Ed Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>

Semester 3	Credits
CETT 1325 Digital Fundamentals <sup>3</sup>	3
ELPT 1380 or Cooperative Education - Electrical and Power Transmission Installation/Installer, General	
DFTG 1313 Drafting for Specific Occupations	3
ELPT 2319 Programmable Logic Controllers I <sup>4</sup>	3
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>

Semester 4	Credits
EEIR 1309 National Electrical Code	3
ELPT 2339 Electrical Power Distribution	3
ELPT 1351 Electrical Machines <sup>5</sup>	3
ELPT 2335 Electrical Theory and Devices <sup>6</sup>	<u>3</u>
<b>Semester Total</b>	<b>12</b>

Semester 5	Credits
ELPT 2323 Transformers <sup>7</sup>	3
ELPT 2331 AC/DC Drives	3
ELPT 2343 Electrical Systems Design <sup>8</sup>	3
ELPT 2347 Electrical Testing and Maintenance	<u>3</u>
<b>Semester Total</b>	<b>12</b>

**Program Total** 60

#### Prerequisites

<sup>1</sup> CETT-1303 or IEIR-1302 (Prerequisite or Corequisite)

<sup>2</sup> ELPT 1311 or CETT 1303 or IEIR 1371

<sup>3</sup> CETT 1303, IEIR 1302, IEIR 1304, IEIR 1371 or CETT 1305 (Prerequisite or Corequisite)

<sup>4</sup> ELPT 1341 (Prerequisite or Corequisite)

<sup>5</sup> ELPT 1341

<sup>6</sup> CETT 1305 or MATH 1316

<sup>7</sup> ELPT 2335

<sup>8</sup> DFTG 1313, ELPT 1357 or ELPT 2339

### Industrial Controls Technology Associate of Applied Science - Marshall only

Semester 1	Credits
CETT 1303 DC Circuits	3
OSHT 1320 Energy Industrial Safety	3
POFI 1301 Computer Applications I	3
ACGM X3XX Gen Ed Mathematics Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>

Semester 2	Credits
CETT 1305 AC Circuits <sup>1</sup>	3
ELPT 1341 Motor Control <sup>2</sup>	3
INTC 1341 Principles of Automatic Control	3
ENGL 1301 Composition I	<u>3</u>
<b>Semester Total</b>	<b>12</b>

Semester 3	Credits
CETT 1341 Solid State Circuits <sup>3</sup>	3
ELPT 2331 AC/DC Drives	3
INTC 1343 Application of Industrial Automatic Controls	3
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>

Semester 4	Credits
ELPT 1351 Electrical Machines <sup>4</sup>	3
ELPT 2319 Programmable Logic Controllers I <sup>5</sup>	3
INTC 2339 Instrument and Control Review <sup>6</sup>	3
ELPT 1345 Commercial Wiring	<u>3</u>
<b>Semester Total</b>	<b>12</b>

**Semester 5**

	<b>Credits</b>
ELPT 2355 Programmable Logic Controllers II <sup>7</sup>	3
INTC 2330 Instrumentation Systems Troubleshooting <sup>8</sup>	3
ACGM X3XX Gen Ed Math/Natural Science Elective	3
ACGM X3XX Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>
<b>Program Total</b>	<b>60</b>

**Prerequisites**<sup>1</sup> CETT 1303 or IEIR 1302 (Prerequisite or Corequisite)<sup>2</sup> ELPT 1311 or CETT 1303 or IEIR 1371<sup>3</sup> CETT 1305<sup>4</sup> ELPT 1341<sup>5</sup> ELPT 1341 (Prerequisite or Corequisite)<sup>6</sup> INTC 1343<sup>7</sup> ELPT 2319<sup>8</sup> INTC 1343**Industrial Electrical Systems****Certificate 1 - Williamson County only****Semester 1**

	<b>Credits</b>
ELPT 1221 Introduction to Electrical Safety and Tools	2
ELPT 1225 National Electrical Code I	2
ELPT 1329 Residential Wiring	3
CETT 1303 DC Circuits	3
TECM 1303 Technical Calculations	<u>3</u>
<b>Semester Total</b>	<b>13</b>

**Semester 2**

	<b>Credits</b>
ELPT 1341 Motor Control <sup>1</sup>	3
ELPT 1345 Commercial Wiring	3
ELPT 2305 Motors and Transformers	3
CETT 1305 AC Circuits <sup>2</sup>	3
INMT 1305 Introduction to Industrial Maintenance	<u>3</u>
<b>Semester Total</b>	<b>15</b>
<b>Program Total</b>	<b>28</b>

**Prerequisites**<sup>1</sup> ELPT 1311 or CETT 1303 or IEIR 1371<sup>2</sup> CETT 1303 or IEIR 1302 (Prerequisite or Corequisite)

# Electromechanical Technology

The Electromechanical Technology program is a merging of various systems and controls, both mechanical and electrical. The program combines computers, control systems, electrical systems and mechanical systems, and gives students the opportunity to learn the principles and skills required to enter the industry. In the lab setting, students receive hands-on experience with top-notch equipment and systems. They learn to troubleshoot and repair industrial equipment, and study the skills, tips and tricks to make them successful in this exciting field.

Electromechanical Technology is available at the Brownwood and Sweetwater campuses.

## Electromechanical Technology Associate of Applied Science - Sweetwater only

Semester 1	Credits
CETT 1303 DC Circuits	3
RBTC 1343 Robotics <sup>1</sup>	3
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	3
ACGM X3XX Gen Ed Math/Natural Science Elective	3
<b>Semester Total</b>	<b>12</b>
Semester 2	Credits
CETT 1305 AC Circuits <sup>2</sup>	3
CETT 1325 Digital Fundamentals <sup>3</sup>	3
ELMT 1305 Basic Fluid Power	3
RBTC 2339 Robot Programming and Diagnostics <sup>4</sup>	3
ACGM X3XX Gen Ed Social/Behavioral Science Elective	3
<b>Semester Total</b>	<b>15</b>
Semester 3	Credits
CETT 1329 Solid State Devices <sup>5</sup>	3
ELMT 1301 Programmable Logic Controllers <sup>6</sup>	3
ENER 2325 SCADA and Networking <sup>7</sup>	3
INMT 1317 Industrial Automation	3
ACGM X3XX Gen Ed Elective	3
<b>Semester Total</b>	<b>15</b>
Semester 4	Credits
ELMT 2333 Industrial Electronics	3
ELMT 2239 Advanced Programmable Logic Controllers <sup>8</sup>	2
ELMT 2341 Electromechanical Systems	3
RBTC 1341 Vision Systems <sup>9</sup>	3
ACGM X3XX Gen Ed Elective	3
<b>Semester Total</b>	<b>14</b>
Semester 5	Credits
ELMT 2480 Cooperative Education - Electromechanical Technology/Electromechanical Engineering	4
Technology ELMT 1491 or Special Topics in Electromechanical Technology/Technician	
<b>Semester Total</b>	<b>4</b>
<b>Program Total</b>	<b>60</b>

### Prerequisites

- <sup>1,2</sup> CETT 1303 or IEIR 1302 (Prerequisite or Corequisite)  
<sup>3</sup> CETT 1303, IEIR 1302, IEIR 1304, IEIR 1371 or CETT 1305 (Prerequisite or Corequisite)  
<sup>4</sup> RBTC 1343  
<sup>5</sup> CETT 1305, IEIR 1371 or IEIR 1304  
<sup>6,7</sup> CETT 1325  
<sup>8</sup> ELMT 1301  
<sup>9</sup> RBTC 2339

## Electromechanical Technician Certificate 2 - Sweetwater only

Semester 1	Credits
CETT 1303 DC Circuits	3
RBTC 1343 Robotics <sup>1</sup>	3
TECM 1303 Technical Calculations	3
<b>Semester Total</b>	<b>9</b>
Semester 2	Credits
CETT 1305 AC Circuits <sup>2</sup>	3
CETT 1325 Digital Fundamentals <sup>3</sup>	3
ELMT 1305 Basic Fluid Power	3
RBTC 2339 Robot Programming and Diagnostics <sup>4</sup>	3
<b>Semester Total</b>	<b>12</b>
Semester 3	Credits
ELMT 1301 Programmable Logic Controllers <sup>5</sup>	3
CETT 1329 Solid State Devices <sup>6</sup>	3
ENER 2325 SCADA and Networking <sup>7</sup>	3
INMT 1317 Industrial Automation	3
<b>Semester Total</b>	<b>12</b>
Semester 4	Credits
ELMT 2333 Industrial Electronics	3
ELMT 2239 Advanced Programmable Logic Controllers <sup>8</sup>	2
ELMT 2341 Electromechanical Systems	3
RBTC 1341 Vision Systems <sup>9</sup>	3
<b>Semester Total</b>	<b>11</b>
<b>Program Total</b>	<b>44</b>

### Prerequisites

- <sup>1,2</sup> CETT 1303 or IEIR 1302 (Prerequisite or Corequisite)  
<sup>3</sup> CETT 1303, IEIR 1302, IEIR 1304, IEIR 1371 or CETT 1305 (Prerequisite or Corequisite)  
<sup>4</sup> RBTC 1343  
<sup>5,7</sup> CETT 1325  
<sup>6</sup> CETT 1305 IEIR 1371 or IEIR 1304  
<sup>8</sup> ELMT 1301  
<sup>9</sup> RBTC 2339

## Electronics Technology

Electronics technicians perform inspections, conduct tests and collect data in quality control, or assist in product design, development and manufacturing production. Electronics Technology at TSTC can provide the technical skills needed to compete in the industry. In TSTC's Electronics program, students get a solid base of electronics courses with a concentration on microprocessor instruction — the framework for almost unlimited electronics applications. Students also will gain the competitive edge by learning LabView, the most up-to-date program used in the industry. The program covers both classroom theory and laboratory work and provides instruction in more advanced electronics applications, such as automatic testing and optoelectronics.

Electronics Technology is available at the Waco campus.



### Electronics Technology Associate of Applied Science

#### Semester 1

	Credits
CETT 1307 Fundamentals of Electronics	3
CETT 1321 Electronic Fabrication	3
IEIR 1371 Electrical Principles and Applications	3
ENGL 1301 Composition I	3
ACGM X3XX Gen Ed Math/Natural Science Elective	3
<b>Semester Total</b>	<b>15</b>

#### Semester 2

	Credits
CETT 1349 Digital Systems <sup>1</sup>	3
CSIR 2301 Communication Electronics Components <sup>2</sup>	3
ELPT 1341 Motor Control <sup>3</sup>	3
ACGM X3XX Gen Ed Social/Behavioral Science Elective	3
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	3
<b>Semester Total</b>	<b>15</b>

#### Semester 3

	Credits
CETT 1357 Linear Integrated Circuits <sup>3</sup>	3
CSIR 1344 General Communication Circuits I <sup>4</sup>	3
EECT 1371 Power Source Design <sup>5</sup>	3
ELPT 2319 Programmable Logic Controllers I <sup>6</sup>	3
ACGM X3XX Gen Ed Elective	3
<b>Semester Total</b>	<b>15</b>

#### Semester 4

	Credits
CETT 1331 Programming for Discrete Electronic Devices <sup>7</sup>	3
CETT 2339 Amplifier Analysis <sup>8</sup>	3
CETT 2449 Research and Project Design <sup>9</sup>	4
EECT 2275 Automatic Testing <sup>10</sup>	2
CSIR 1341 Transceiver Troubleshooting I <sup>11</sup>	3
<b>Semester Total</b>	<b>15</b>

**Program Total** **60**

#### Prerequisites

- <sup>1,2</sup> IEIR 1371
- <sup>3</sup> ELPT 1311 or CETT 1303 or IEIR 1371 \*\*
- <sup>4</sup> CSIR 2301
- <sup>5</sup> CETT 1321, CSIR 2301
- <sup>6</sup> CSIR 2301
- <sup>7</sup> ELPT 1341
- <sup>8</sup> CETT 1349
- <sup>9</sup> CSIR 2301, ACGM Math
- <sup>10</sup> CSIR 1344, CETT 1357, EECT 1371
- <sup>11</sup> ACGM Math
- <sup>12</sup> CETT 1321, CSIR 2301

## Emergency Medical Services

In TSTC's Emergency Medical Services program, you'll learn from experienced, certified instructors in an environment that combines hands-on labs with lecture. You'll gain skills in medical procedures required to assess and treat victims at the scene and en route to the hospital, and you'll get to put your abilities to the test in a clinical learning environment to gain extensive, on-the-job experience. As a program, our goal is to prepare competent entry-level paramedics in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains, with exit points at the Advanced Emergency Medical Technician, Emergency Medical Technician (Basic), and/or First Responder levels.

Emergency Medical Services is available at the Abilene and Brownwood campuses.

### Paramedic Associate of Applied Science

Semester 1	Credits
EMSP 1261 Clinical - Emergency Medical Technology/ Technician (EMT Paramedic)	2
ACGM X3XX Gen Ed Elective	3
EMSP 1501 Emergency Medical Technician	5
EMSP 2237 Emergency Procedures	2
<b>Semester Total</b>	<b>12</b>

Semester 2	Credits
EMSP 1355 Trauma Management	3
EMSP 1356 Patient Assessment and Airway Management	3
EMSP 1438 Introduction to Advanced Practice	4
MDCA 1313 Medical Terminology	3
BIOL 2404 Anatomy & Physiology (lecture + lab)	4
<b>Semester Total</b>	<b>17</b>

Semester 3	Credits
EMSP 2161 Clinical - Emergency Medical Technology/ Technician (EMT Paramedic)	1
EMSP 2167 Practicum (or Field Experience) - Emergency Medical Technology/Technician (EMT Paramedic)	1
EMSP 2205 EMS Operations	2
EMSP 2330 Special Populations	3
EMSP 2434 Medical Emergencies	4
ACGM X3XX Gen Ed Elective	3
<b>Semester Total</b>	<b>14</b>

Semester 4	Credits
EMSP 2143 Assessment Based Management	1
EMSP 2162 Clinical - Emergency Medical Technology/ Technician (EMT Paramedic)	1
EMSP 2168 Practicum (or Field Experience) - Emergency Medical Technology/Technician (EMT Paramedic)	1
EMSP 2206 Emergency Pharmacology	2
EMSP 2444 Cardiology	4
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	3
<b>Semester Total</b>	<b>12</b>

Semester 5	Credits
EMSP 2163 Clinical - Emergency Medical Technology/ Technician (EMT Paramedic)	1
EMSP 2169 Practicum (or Field Experience) - Emergency Medical Technology/Technician (EMT Paramedic)	1
ACGM X3XX Gen Ed Social/Behavioral Science Elective	3
<b>Semester Total</b>	<b>5</b>
<b>Program Total</b>	<b>60</b>

### Emergency Medical Services - Advanced EMT (AEMT) Certificate 1

Semester 1	Credits
EMSP 1261 Clinical - Emergency Medical Technology/ Technician (EMT Paramedic)	2
EMSP 2237 Emergency Procedures	2
EMSP 1501 Emergency Medical Technician	5
<b>Semester Total</b>	<b>9</b>

Semester 2	Credits
EMSP 1355 Trauma Management	3
EMSP 1356 Patient Assessment and Airway Management	3
EMSP 1438 Introduction to Advanced Practice	4
MDCA 1313 Medical Terminology	3
<b>Semester Total</b>	<b>13</b>

Semester 3	Credits
EMSP 2161 Clinical - Emergency Medical Technology/ Technician (EMT Paramedic)	1
EMSP 2167 Practicum (or Field Experience) - Emergency Medical Technology/Technician (EMT Paramedic)	1
EMSP 2205 EMS Operations	2
EMSP 2330 Special Populations	3
EMSP 2434 Medical Emergencies	4
<b>Semester Total</b>	<b>11</b>

<b>Program Total</b>	<b>33</b>
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### Emergency Medical Services - EMT Certificate 1

Semester 1	Credits
EMSP 1261 Clinical - Emergency Medical Technology/ Technician (EMT Paramedic)	2
EMSP 1501 Emergency Medical Technician	5
EMSP 2237 Emergency Procedures	2
<b>Semester Total</b>	<b>9</b>

Semester 2	Credits
MDCA 1313 Medical Terminology	3
SCIT 1407 Applied Human Anatomy and Physiology I	4
<b>Semester Total</b>	<b>7</b>

<b>Program Total</b>	<b>16</b>
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## Emergency Medical Services - Paramedic Certificate 2

Semester 1		Credits
EMSP 1501	Emergency Medical Technician	5
EMSP 1261	Clinical - Emergency Medical Technology/Technician (EMT Paramedic)	2
EMSP 2237	Emergency Procedures	<u>2</u>
Semester Total		9
Semester 2		Credits
EMSP 1355	Trauma Management	3
EMSP 1356	Patient Assessment and Airway Management	3
EMSP 1438	Introduction to Advanced Practice	4
MDCA 1313	Medical Terminology	3
BIOL 2404	Anatomy & Physiology (lecture + lab)	<u>4</u>
Semester Total		17
Semester 3		Credits
EMSP 2161	Clinical - Emergency Medical Technology/Technician (EMT Paramedic)	1
EMSP 2167	Practicum (or Field Experience) - Emergency Medical Technology/Technician (EMT Paramedic)	1
EMSP 2205	EMS Operations	2
EMSP 2330	Special Populations	3
EMSP 2434	Medical Emergencies	<u>4</u>
Semester Total		11
Semester 4		Credits
EMSP 2143	Assessment Based Management	1
EMSP 2162	Clinical - Emergency Medical Technology/Technician (EMT Paramedic)	1
EMSP 2168	Practicum (or Field Experience) - Emergency Medical Technology/Technician (EMT Paramedic)	1
EMSP 2206	Emergency Pharmacology	2
EMSP 2444	Cardiology	<u>4</u>
Semester Total		9
Semester 5		Credits
EMSP 2163	Clinical - Emergency Medical Technology/Technician (EMT Paramedic)	1
EMSP 2169	Practicum (or Field Experience) - Emergency Medical Technology/Technician (EMT Paramedic)	<u>1</u>
Semester Total		2
Program Total		48

## Energy Management & Systems Technology

An Energy Efficiency Specialization gives you the power to control your own future. The program offers a specialization in energy checks and home energy efficiency. With new regulations created daily throughout the nation and in Texas, the program certifies and trains you to perform energy audits, improve home efficiency and execute other important energy-related functions. You'll learn basic construction knowledge, how building components can fail, and how to evaluate and remediate that failure. This is also a great program for homeowners interested in learning how to maximize the efficiency of their homes.

Energy Management & Systems Technology is available at the Waco campus.

### Energy Efficiency Specialist Certificate 1

Semester 1		Credits
CNBT 2317	Green Building	3
RBPT 1370	Building Envelope Inspection	3
SOLR 1371	Introduction to Solar and Alternative Energy Technologies	3
SOLR 2377	Codes for Alternative Energy, Efficiency & Conservation	<u>3</u>
Semester Total		12
Semester 2		Credits
OSHT 1305	OSHA Regulations - Construction Industry	3
RBPT 2325	Energy Rating Systems for Homes	3
RBPT 2329	Residential Verification and Rating	3
RBPT 2359	Residential Building Performance Consulting	<u>3</u>
Semester Total		12
Program Total		24



# Engineering

The Engineering program supports and enhances the College's technical education mission by providing Texas industry with employees who perform well at the entry level by virtue of their competence in math and problem-solving techniques using engineering principles. The Engineering program prepares graduates for advancement in the workplace through superior science and mathematics-based problem-solving skills, and facilitates progress toward successful completion of further educational goals and/or lifelong learning experiences.

Engineering is available at the Harlingen campus.

## Engineering Associate of Science

Semester 1		Credits
ENGR 1201	Introduction to Engineering <sup>1</sup>	2
ENGL 1301	Composition I	3
MATH 2312	Pre-Calculus Math (3 SCH version) <sup>2</sup>	3
ACGM X3XX	Gen Ed Fine Arts Elective	<u>3</u>
Semester Total		11
Semester 2		Credits
MATH 2413	Calculus I (4 SCH version) <sup>3</sup>	4
ENGL 1302	Composition II <sup>4</sup>	3
CHEM 1311	General Chemistry I (lecture) <sup>5</sup>	3
CHEM 1111	General Chemistry I (lab) <sup>6</sup>	<u>1</u>
Semester Total		11
Semester 3		Credits
ENGR 2304	Programming for Engineers	3
MATH 2414	Calculus II (4 SCH version) <sup>7</sup>	4
PHYS 2325	University Physics I (lecture) <sup>8</sup>	3
PHYS 2125	University Physics Laboratory I (lab) <sup>9</sup>	1
GOVT 2306	Texas Government (Texas Constitution & topics) <sup>3</sup>	<u>3</u>
Semester Total		14



Semester 4		Credits
ENGR 2301	Engineering Mechanics - Statics (3 SCH version) <sup>10</sup>	3
MATH 2415	Calculus III (4 SCH version) <sup>11</sup>	4
PHYS 2326	University Physics II (lecture) <sup>12</sup>	3
HIST 1301	United States History I	3
PHYS 2126	University Physics Laboratory II (lab) <sup>13</sup>	<u>1</u>
Semester Total		14
Semester 5		Credits
ENGR 2305	Electrical Circuits I <sup>14</sup>	3
ENGR 2105	Electrical Circuits I Laboratory	1
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	<u>3</u>
Semester Total		10
Program Total		60

### Prerequisites

<sup>1,2,5</sup> MATH 1314

<sup>3</sup> MATH 1316 or MATH 2312 or MATH 2412

<sup>4</sup> ENGL 1301

<sup>6</sup> CHEM 1311 (Prerequisite or Corequisite)

<sup>7</sup> MATH 2413

<sup>8</sup> MATH 2413 (Prerequisite), PHYS 2125 (Prerequisite or Corequisite)

<sup>9</sup> PHYS 2325 (Prerequisite or Corequisite)

<sup>10</sup> PHYS 2325

<sup>11</sup> MATH 2414

<sup>12</sup> PHYS 2325, MATH 2414 (Prerequisite) PHYS 2126 (Prerequisite or Corequisite)

<sup>13</sup> PHYS 2326 (Prerequisite or Corequisite)

<sup>14</sup> PHYS 2325, MATH 2414

## Environmental Technology

In TSTC's Environmental Technology - Compliance Specialization program, students receive hands-on training in the practical skills needed to establish a career in environmental compliance. Environmental compliance managers, technicians and specialists play a vital role in the development, implementation and monitoring of environmental programs within the workplace. Students in this program will learn to ensure that industry complies with all federal, state and local environmental regulations. Students will also learn how to generate, identify, transport, treat, remediate and dispose of hazardous wastes; about waste minimization and recycling techniques and programs; how to perform a Phase I Environmental Site Assessment; how to research and write an environmental sampling plan and a stormwater pollution prevention plan; how to collect water, soil and air samples; how to identify, assess and respond to a hazardous material incident; about the toxicological effects of hazardous chemicals; and about design, construction and operation of landfills, wetlands, and water and wastewater treatment plants. The student will receive the 40-hour HAZWOPER and 24-hour HAZMAT technician certification upon satisfactory completion of the required coursework.

Environmental Technology - Compliance Specialization is available at the Breckenridge, Fort Bend County and Waco campuses.

### Environmental Technology - Compliance Associate of Applied Science

Semester 1	Credits
EPCT 1205 Environmental Regulations Overview	2
EPCT 1307 Introduction to Environmental Safety and Health	3
ACGM X3XX Gen Ed Social/Behavioral Science Elective	3
ACGM X3XX Gen Ed Elective	<u>3</u>
<b>Semester Total</b>	<b>11</b>

Semester 2	Credits
EPCT 2233 Environmental Toxicology	2
ITSC 1309 Integrated Software Applications I	3
OSHT 2401 OSHA Regulations - General Industry	4
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>

Semester 3	Credits
EPCT 1341 Principles of Industrial Hygiene	3
EPCT 2237 Site Assessment	2
ACGM X4XX Gen Ed Math/Natural Science Elective	4
ACGM X3XX Gen Ed Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>



Semester 4	Credits
EPCT 1243 Treatment, Remediation, and Disposal Techniques	2
EPCT 1249 Environmental Regulation Interpretation and Applications	2
EPCT 1344 Environmental Sampling and Analysis	3
EPCT 2331 Industrial Hygiene Applications	3
OSHT 1305 OSHA Regulations - Construction Industry	<u>3</u>
<b>Semester Total</b>	<b>13</b>

Semester 5	Credits
EPCT 1301 Hazardous Waste Operations and Emergency Response (HAZWOPER) Training and Related Topics	3
EPCT 1317 Environmental Geology	3
EPCT 1347 Waste Minimization and Pollution Prevention	3
OSHT 2320 Safety Training Presentation Techniques	<u>3</u>
<b>Semester Total</b>	<b>12</b>

**Program Total** **60**

## Facilities Maintenance & Management

It takes a team of individuals to keep any large facility operational. From electrical systems and air conditioning to safety procedures or everyday repairs, today's large facilities need skilled, educated technicians to keep things running smoothly. TSTC's Facilities Maintenance & Management students immerse themselves in a cross-disciplinary program with intensive coursework and hands-on experience in everything from basic hydraulics and building codes and inspections to commercial wiring and electrical theory. Backed by a knowledgeable staff and an advisory committee of industry experts who help keep the program current, you can gain the competitive advantage needed to succeed in this dynamic field.

Facilities Maintenance & Management is available at the Waco campus.



### Facilities Maintenance & Management Associate of Applied Science

Semester 1		Credits
CBFM 2313	Building Maintenance Management	3
CNBT 1300	Residential and Light Commercial Blueprint Reading	3
ELPT 1311	Basic Electrical Theory	3
INMT 1305	Introduction to Industrial Maintenance	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	3
	<b>Semester Total</b>	<b>15</b>

Semester 2		Credits
ELPT 1341	Motor Control <sup>1</sup>	3
HYDR 1305	Basic Hydraulics	3
INMT 2303	Pumps, Compressors & Mechanical Drives <sup>2</sup>	3
PFPB 2308	Piping Standards and Materials	3
MATH 1314	College Algebra	3
	<b>Semester Total</b>	<b>15</b>

Semester 3		Credits
CBFM 1303	Boiler Maintenance	3
CNBT 1302	Mechanical, Plumbing & Electrical Systems in Construction I	3
INMT 2301	Machinery Installation <sup>3</sup>	3
RBTC 1309	Pneumatics <sup>4</sup>	3
ENGL 1301	Composition I	3
	<b>Semester Total</b>	<b>15</b>

Semester 4		Credits
CNBT 1342	Building Codes and Inspections	3
ENTC 1349	Reliability and Maintainability	3
INMT 2345	Industrial Troubleshooting <sup>5</sup>	3
PHYS 1310	Elementary Physics	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	3
	<b>Semester Total</b>	<b>15</b>

**Program Total** **60**

#### Prerequisites

<sup>1</sup> ELPT 1311 or CETT 1303 or IEIR 1371

<sup>2,3</sup> INMT 1305

<sup>4</sup> HYDR 1305

<sup>5</sup> ELPT 1341

## Graphics, Gaming & Simulation Programming

In this specialization, students learn to design and create systems to meet the graphics and simulation programming needs of business and industry. Gaming and interactive media design is used in several segments of information technology, including game design and creation, educational enhancement, industrial training, aerospace simulation and global defense. After mastering the fundamentals of C++, the student moves into advanced applications of C++ in animation programming, multi-user interface programming, advanced mathematical applications and artificial intelligence. Additionally, tools such as OpenGL and DirectX are included in this curriculum.

Graphics, Gaming & Simulation Programming is offered at the Harlingen and Waco campuses.

### Graphics, Gaming & Simulation Programming Associate of Applied Science - Harlingen only

Semester 1		Credits
GAME 1303	Introduction to Game Design and Development	3
ITSE 1307	Introduction to C++ Programming	3
ENGL 1301	Composition I	3
MATH 1314	College Algebra	<u>3</u>
	<b>Semester Total</b>	<b>12</b>

Semester 2		Credits
GAME 1336	Introduction to 3D Game Modeling <sup>1</sup>	3
ITSE 2331	Advanced C++ Programming <sup>2</sup>	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	3
MATH 1316	Plane Trigonometry	<u>3</u>
	<b>Semester Total</b>	<b>12</b>

Semester 3		Credits
GAME 1343	Game and Simulation Programming I <sup>3</sup>	3
GAME 1349	OpenGL Programming I <sup>4</sup>	3
ITSE 2345	Data Structures <sup>5</sup>	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	<u>3</u>
	<b>Semester Total</b>	<b>12</b>

Semester 4		Credits
GAME 1353	Multi-User Game Programming I <sup>6</sup>	3
GAME 1359	Game and Simulation Programming II <sup>7</sup>	3
GAME 2303	Artificial Intelligence Programming I <sup>8</sup>	3
GAME 2341	Game Scripting <sup>9</sup>	<u>3</u>
	<b>Semester Total</b>	<b>12</b>

Semester 5		Credits
GAME 2333	Game and Simulation Programming III <sup>10</sup>	3
GAME 2347	Advanced Game Programming	3
GAME 2353	OpenGL Programming II <sup>11</sup>	3
GAME 2359	Game and Simulation Group Project <sup>12</sup>	<u>3</u>
	<b>Semester Total</b>	<b>12</b>

**Program Total** **60**

#### Prerequisites

- <sup>1</sup> GAME 1303
- <sup>2</sup> ITSE 1307
- <sup>3,4,5</sup> ITSE 2331
- <sup>6</sup> GAME 1343
- <sup>7,8</sup> GAME 1343
- <sup>9</sup> ITSE 2331
- <sup>10</sup> GAME 1359
- <sup>11</sup> GAME 1349
- <sup>12</sup> GAME 1353, GAME 2303

### Graphics, Gaming & Simulation Programming Advanced Technology Certificate - Waco only

An associate degree in Computer Science is required prior to entry.

Semester 1		Credits
GAME 1303	Introduction to Game Design and Development	3
GAME 1343	Game and Simulation Programming I <sup>1</sup>	3
GAME 1349	OpenGL Programming I <sup>2</sup>	3
ITSE 2345	Data Structures <sup>3</sup>	<u>3</u>
	<b>Semester Total</b>	<b>12</b>

Semester 2		Credits
GAME 1353	Multi-User Game Programming I <sup>4</sup>	3
GAME 1359	Game and Simulation Programming II <sup>5</sup>	3
GAME 2302	Mathematical Applications for Game Development <sup>6</sup>	3
GAME 2303	Artificial Intelligence Programming I <sup>7</sup>	<u>3</u>
	<b>Semester Total</b>	<b>12</b>

Semester 3		Credits
GAME 2333	Game and Simulation Programming III <sup>8</sup>	3
GAME 2349	Artificial Intelligence Programming II <sup>9</sup>	3
GAME 2353	OpenGL Programming II <sup>10</sup>	3
GAME 2359	Game and Simulation Group Project <sup>11</sup>	<u>3</u>
	<b>Semester Total</b>	<b>12</b>

**Program Total** **36**

#### Prerequisites

- <sup>1,2,3</sup> ITSE 2331
- <sup>4,5,6,7</sup> GAME 1343
- <sup>8</sup> GAME 1359
- <sup>9</sup> GAME 2303
- <sup>10</sup> GAME 1349
- <sup>11</sup> GAME 1353, GAME 2303

## Health Information Technology

In the Health Information Technology program, students learn skills in collecting, analyzing and maintaining health data, as well as billing, coding and transcription. Physicians and other health care professionals need accurate records to treat their patients, and professionals in the health information technology industry make that possible. Health information technology careers are found in a variety of settings, including health care facilities, consulting firms, government agencies, insurance companies, health care IS/IT vendors and pharmaceutical companies, as well as many other environments. For quicker entry into the industry, certificate programs are available in the Medical Office Specialist (Abilene) and Medical Information Transcriptionist (Harlingen) programs.

Health Information Technology is available at the Abilene (fully online) and Harlingen (fully face-to-face) campuses. A grade of C or better is required for all courses.

### Health Information Technology Associate of Applied Science

Semester 1	Credits
HITT 1204 IT for Health Professions	2
HITT 1301 Health Data Content and Structure	3
HITT 1305 Medical Terminology I	3
BIOL 2401 Anatomy & Physiology I (lecture + lab)	<u>4</u>
BIOL 2101 or Anatomy & Physiology I (lab) <sup>1</sup>	
BIOL 2301 and Anatomy & Physiology I (lecture) <sup>2</sup>	
<b>Semester Total</b>	<b>12</b>

Semester 2	Credits
HITT 1253 Legal and Ethical Aspects of Health Information	2
HITT 1341 Coding and Classification Systems	3
HITT 1345 Health Care Delivery Systems	3
BIOL 2402 Anatomy & Physiology II (lecture + lab)	<u>4</u>
BIOL 2102 or Anatomy & Physiology II (lab) <sup>3</sup>	
BIOL 2302 and Anatomy & Physiology II (lecture) <sup>4</sup>	
<b>Semester Total</b>	<b>12</b>

Semester 3	Credits
HITT 1311 Health Information Systems	3
HITT 1342 Ambulatory Coding	3
MDCA 1302 Human Disease/Pathophysiology	3
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>

Semester 4	Credits
HITT 2335 Coding and Reimbursement Methodologies <sup>5</sup>	3
HITT 2339 Health Information Organization and Supervision	3
HITT 2443 Quality Assessment and Performance Improvement	4
ACGM X3XX Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>	<b>13</b>

Semester 5	Credits
HITT 2249 RHIT Competency Review	2
HITT 2346 Advanced Medical Coding <sup>6</sup>	3
HITT 2366 Practicum (or Field Experience) - Health Information/ Medical Records Technology/ Technician	3
HITT 2166 or Practicum (or Field Experience) - Health Information/Medical Records Technology/ Technician	1
HITT 2266 and Practicum (or Field Experience) - Health Information/Medical Records Technology/ Technician	2
ACGM X3XX Gen Ed Elective	<u>3</u>
<b>Semester Total</b>	<b>11</b>

**Program Total** **60**

#### Prerequisites

<sup>1</sup> BIOL 2301 (Prerequisite or Corequisite)

<sup>2</sup> BIOL 2101 (Prerequisite or Corequisite)

<sup>3</sup> BIOL 2302 (Prerequisite or Corequisite)

<sup>4</sup> BIOL 2102 (Prerequisite or Corequisite)

<sup>5</sup> HITT 1341

<sup>6</sup> HITT 1341, HITT 1342

### Medical Office Specialist Certificate 2 - Abilene only

Semester 1	Credits
HITT 1204 IT for Health Professions	2
HITT 1301 Health Data Content and Structure	3
HITT 1305 Medical Terminology I	3
MDCA 1302 Human Disease/Pathophysiology	<u>3</u>
<b>Semester Total</b>	<b>11</b>

Semester 2	Credits
HITT 1253 Legal and Ethical Aspects of Health Information	2
HITT 1341 Coding and Classification Systems	3
HITT 1342 Ambulatory Coding	3
BIOL 2401 Anatomy & Physiology I (lecture + lab)	<u>4</u>
<b>Semester Total</b>	<b>12</b>

Semester 3	Credits
HITT 1311 Health Information Systems	3
HITT 2335 Coding and Reimbursement Methodologies <sup>1</sup>	3
HITT 2366 Practicum (or Field Experience) - Health Information/Medical Records Technology/ Technician	3
BIOL 2402 Anatomy & Physiology II (lecture + lab)	<u>4</u>
<b>Semester Total</b>	<b>13</b>

**Program Total** **36**

#### Prerequisite

<sup>1</sup> HITT 1341

## Medical Information Transcriptionist Certificate 1 - Harlingen only

### Semester 1

		Credits
HITT 1301	Health Data Content and Structure	3
HITT 1305	Medical Terminology I	3
HITT 1311	Health Information Systems	3
MDCA 1321	Administrative Procedures	<u>3</u>
	<b>Semester Total</b>	<b>12</b>

### Semester 2

		Credits
HITT 2331	Medical Terminology - Advanced	3
HITT 1342	Ambulatory Coding	3
MDCA 1343	Medical Insurance	3
MRMT 1307	Medical Transcription I	<u>3</u>
	<b>Semester Total</b>	<b>12</b>

### Semester 3

		Credits
HITT 1266	Practicum (or Field Experience) - Health Information/Medical Records Technology/Technician	2
MRMT 2433	Medical Transcription II	<u>4</u>
	<b>Semester Total</b>	<b>6</b>

<b>Program Total</b>	<b>30</b>
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# Heating, Ventilation & Air Conditioning Technology

TSTC offers hands-on training to teach students of Heating, Ventilation & Air Conditioning Technology the skills needed to enter the industry. The program is backed by experienced faculty, many of whom are active members of professional organizations such as North American Technician Excellence and Air Conditioning Contractors of America, and is guided by an advisory board of current industry members, ensuring that students get the latest training available. The laboratory facilities at TSTC include high efficiency commercial and residential heating and air conditioning equipment, energy efficient heat pumps, commercial refrigeration equipment, direct digital and pneumatic controls, and a 200-ton chilled water system.

Heating, Ventilation & Air Conditioning Technology is available at Fort Bend County, Harlingen, North Texas, Waco and Williamson County campuses

## HVAC Technology Associate of Applied Science

Semester 1	Credits
HART 1301 Basic Electricity for HVAC	3
HART 1307 Refrigeration Principles	3
HART 1310 HVAC Shop Practices and Tools	3
HART 1345 Gas and Electric Heating <sup>1</sup>	<u>3</u>
<b>Semester Total</b>	<b>12</b>
Semester 2	Credits
HART 1303 Air Conditioning Control Principles <sup>2</sup>	3
HART 1341 Residential Air Conditioning <sup>3</sup>	3
HART 2342 Commercial Refrigeration <sup>4</sup>	3
ACGM X3XX Gen Ed Math/Natural Science Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>
Semester 3	Credits
HART 2331 Advanced Electricity for HVAC <sup>5</sup>	3
HART 2336 Air Conditioning Troubleshooting <sup>6</sup>	3
HART 2341 Commercial Air Conditioning <sup>7</sup>	3
HART 2349 Heat Pumps <sup>8</sup>	<u>3</u>
<b>Semester Total</b>	<b>12</b>
Semester 4	Credits
HART 2343 Industrial Air Conditioning <sup>9</sup>	3
HART 2345 Residential Air Conditioning Systems Design <sup>10</sup>	3
ENGL 1301 Composition I	3
ACGM X3XX Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>
Semester 5	Credits
HART 2334 Advanced Air Conditioning Controls <sup>11</sup>	3
HART 2358 Testing, Adjusting, and Balancing HVAC Systems <sup>12</sup>	3
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	3
ACGM X3XX Gen Ed Elective	<u>3</u>
<b>Semester Total</b>	<b>12</b>
<b>Program Total</b>	<b>60</b>

### Prerequisites

- <sup>1,2</sup> HART 1301 (Prerequisite or Corequisite)  
<sup>3</sup> HART 1301, HART 1307  
<sup>4</sup> HART 1307  
<sup>5</sup> HART 1303  
<sup>6</sup> HART 1303, HART 1341, HART 1345  
<sup>7</sup> HART 1341, HART 1303  
<sup>8</sup> HART 1303, HART 1341  
<sup>9,10,11</sup> HART 2336  
<sup>12</sup> HART 2331

## HVAC Technician Certificate 1

Semester 1	Credits
HART 1301 Basic Electricity for HVAC	3
HART 1307 Refrigeration Principles	3
HART 1310 HVAC Shop Practices and Tools	3
HART 1345 Gas and Electric Heating <sup>1</sup>	<u>3</u>
<b>Semester Total</b>	<b>12</b>
Semester 2	Credits
HART 1303 Air Conditioning Control Principles <sup>2</sup>	3
HART 1341 Residential Air Conditioning <sup>3</sup>	3
HART 2338 Air Conditioning Installation and Startup	3
HART 2342 Commercial Refrigeration <sup>4</sup>	<u>3</u>
<b>Semester Total</b>	<b>12</b>
Semester 3	Credits
HART 2331 Advanced Electricity for HVAC <sup>5</sup>	3
HART 2336 Air Conditioning Troubleshooting <sup>6</sup>	3
HART 2341 Commercial Air Conditioning <sup>7</sup>	3
HART 2349 Heat Pumps <sup>8</sup>	<u>3</u>
<b>Semester Total</b>	<b>12</b>
<b>Program Total</b>	<b>36</b>

### Prerequisites

- <sup>1,2</sup> HART 1301 (Prerequisite or Corequisite)  
<sup>3</sup> HART 1301, HART 1307  
<sup>4</sup> HART 1307  
<sup>5</sup> HART 1303  
<sup>6</sup> HART 1303, HART 1341, HART 1345  
<sup>7,8</sup> HART 1341, HART 1303

## Industrial Maintenance

The Industrial Maintenance program is designed by industry experts and employers. The courses in this program are directed at cutting-edge mechanical and electrical operations, providing you with knowledge and skills in hydraulics, pneumatics, pumps and compressors, machinery installation and alignment, programmable logic controllers, motor controls, electrical installation and wiring, air conditioning and refrigeration, machine shop, power transmissions, troubleshooting and welding. The classroom learning is supplemented with hands-on training utilizing real-world equipment to provide you with the skills and technical background needed to be successful in most industrial environments. Students can choose a general Industrial Maintenance track or specialize in Electrical Industrial Maintenance. For quicker entry into the industry, general and electrical industrial maintenance certificates are also available.

Industrial Maintenance is available at the Abilene, Fort Bend County, Marshall, North Texas, Waco and Williamson County campuses.

### Industrial Maintenance-Electrical Specialization

#### Associate of Applied Science - Marshall, North Texas only

Semester 1	Credits
DFTG 1325 Blueprint Reading and Sketching	3
ELPT 1311 Basic Electrical Theory	3
INMT 1305 Introduction to Industrial Maintenance	3
WLDG 1391 Special Topics in Welder/Welding Technologist	3
ACGM X3XX Gen Ed Social/Behavioral Science Elective	3
<b>Semester Total</b>	<b>15</b>

Semester 2	Credits
ELPT 1341 Motor Control <sup>1</sup>	3
HYDR 1305 Basic Hydraulics	3
INMT 2303 Pumps, Compressors & Mechanical Drives <sup>2</sup>	3
HART 1307 Refrigeration Principles	3
ACGM X3XX Gen Ed Math/Natural Science Elective	3
<b>Semester Total</b>	<b>15</b>

Semester 3	Credits
ELPT 2319 Programmable Logic Controllers I <sup>3</sup>	3
INMT 2301 Machinery Installation <sup>4</sup>	3
RBTC 1309 Pneumatics <sup>5</sup>	3
ELPT 1345 Commercial Wiring	3
ENGL 1301 Composition I	3
<b>Semester Total</b>	<b>15</b>

Semester 4	Credits
INMT 2345 Industrial Troubleshooting <sup>6</sup>	3
ELPT 1351 Electrical Machines <sup>7</sup>	3
ELPT 2331 AC/DC Drives	3
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	3
ACGM X3XX Gen Ed Elective	3
<b>Semester Total</b>	<b>15</b>

**Program Total** 60



#### Prerequisites

<sup>1</sup> ELPT 1311 or CETT 1303 or IEIR 1371

<sup>2,4</sup> INMT 1305

<sup>3</sup> ELPT 1341 (Prerequisite or Corequisite)

<sup>5</sup> HYDR 1305

<sup>6,7</sup> ELPT 1341

### Industrial Maintenance Mechanic

#### Certificate 1 - Abilene, Fort Bend County, Waco, Williamson County only

Semester 1	Credits
DFTG 1325 Blueprint Reading and Sketching	3
ELPT 1311 Basic Electrical Theory	3
HYDR 1301 Rigging and Conveying Systems	3
INMT 1305 Introduction to Industrial Maintenance	3
<b>Semester Total</b>	<b>12</b>

Semester 2	Credits
CBFM 1303 Boiler Maintenance	3
ELPT 1341 Motor Control <sup>1</sup>	3
HYDR 1305 Basic Hydraulics	3
INMT 2303 Pumps, Compressors & Mechanical Drives <sup>2</sup>	3
<b>Semester Total</b>	<b>12</b>

Semester 3	Credits
INMT 1355 Industrial Power Plant Systems <sup>3</sup>	3
INMT 2301 Machinery Installation <sup>4</sup>	3
PFPB 2308 Piping Standards and Materials	3
RBTC 1309 Pneumatics <sup>5</sup>	3
<b>Semester Total</b>	<b>12</b>

**Program Total** 36

#### Prerequisites

<sup>1</sup> ELPT 1311 or CETT 1303 or IEIR 1371

<sup>2,3,4</sup> INMT 1305

<sup>5</sup> HYDR 1305



## Industrial Maintenance Mechanic-Electrical Certificate 2 - Marshall, North Texas only

Semester 1	Credits
DFTG 1325 Blueprint Reading and Sketching	3
ELPT 1311 Basic Electrical Theory	3
INMT 1305 Introduction to Industrial Maintenance	3
WLDG 1391 Special Topics in Welder/Welding Technologist	3
<b>Semester Total</b>	<b>12</b>

Semester 2	Credits
ELPT 1341 Motor Control <sup>1</sup>	3
HART 1307 Refrigeration Principles	3
HYDR 1305 Basic Hydraulics	3
INMT 2303 Pumps, Compressors & Mechanical Drives <sup>2</sup>	3
<b>Semester Total</b>	<b>12</b>

Semester 3	Credits
ELPT 1345 Commercial Wiring	3
ELPT 2319 Programmable Logic Controllers I <sup>3</sup>	3
INMT 2301 Machinery Installation <sup>4</sup>	3
RBTC 1309 Pneumatics <sup>5</sup>	3
<b>Semester Total</b>	<b>12</b>

Semester 4	Credits
ELPT 1351 Electrical Machines <sup>6</sup>	3
ELPT 2331 AC/DC Drives	3
INMT 2345 Industrial Troubleshooting <sup>7</sup>	3
<b>Semester Total</b>	<b>9</b>

**Program Total** 45

### Prerequisites

<sup>1</sup> ELPT 1311 or CETT 1303 or IEIR 1371

<sup>2</sup> INMT 1305

<sup>3</sup> ELPT 1341 (Prerequisite or Corequisite)

<sup>4</sup> INMT 1305

<sup>5</sup> HYDR 1305

<sup>6,7</sup> ELPT 1341

## Industrial Maintenance - Mechanical Specialization

**Associate of Applied Science** - Abilene, Fort Bend  
County, Waco, Williamson County only

Semester 1	Credits
DFTG 1325 Blueprint Reading and Sketching	3
ELPT 1311 Basic Electrical Theory	3
HYDR 1301 Rigging and Conveying Systems	3
INMT 1305 Introduction to Industrial Maintenance	3
ACGM X3XX Gen Ed Social/Behavioral Science Elective	3
<b>Semester Total</b>	<b>15</b>

Semester 2	Credits
CBFM 1303 Boiler Maintenance	3
ELPT 1341 Motor Control <sup>1</sup>	3
HYDR 1305 Basic Hydraulics	3
INMT 2303 Pumps, Compressors & Mechanical Drives <sup>2</sup>	3
ACGM X3XX Gen Ed Math/Natural Science Elective	3
<b>Semester Total</b>	<b>15</b>

Semester 3	Credits
ELPT 2319 Programmable Logic Controllers I <sup>3</sup>	3
INMT 2301 Machinery Installation <sup>4</sup>	3
PFPB 2308 Piping Standards and Materials	3
RBTC 1309 Pneumatics <sup>5</sup>	3
ENGL 1301 Composition I	3
<b>Semester Total</b>	<b>15</b>

Semester 4	Credits
ENTC 1349 Reliability and Maintainability	3
INMT 1355 Industrial Power Plant Systems <sup>6</sup>	3
INMT 2345 Industrial Troubleshooting <sup>7</sup>	3
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	3
ACGM X3XX Gen Ed Elective	3
<b>Semester Total</b>	<b>15</b>

**Program Total** 60

### Prerequisites

<sup>1</sup> ELPT 1311 or CETT 1303 or IEIR 1371

<sup>2,4</sup> INMT 1305

<sup>3</sup> ELPT 1341 (Prerequisite or Corequisite)

<sup>5</sup> HYDR 1305

<sup>6</sup> INMT 1305

<sup>7</sup> ELPT 1341

# Industrial Systems Technology

Industrial technology touches every aspect of our lives, impacting products from candies to computers and industries from petrochemical to pharmaceutical. TSTC offers a curriculum designed to help you learn mechanical applications for industries ranging from manufacturing to food processing, pharmaceutical production to health care facility operations. Industrial Systems graduates discover career opportunities in an array of facilities, from chemical plants to universities and hospitals to utility providers. As a graduate of the Industrial Systems Technology program, you can apply skills targeting pumps, valves, motors, steam turbines, air compressors, hydraulic presses, pneumatic equipment, conveyor systems and more.

Industrial Systems Technology is available at the Harlingen campus.



## Industrial Systems Technology Certificate 1

Semester 1		Credits
CETT 1303	DC Circuits	3
CETT 1305	AC Circuits <sup>1</sup>	3
CETT 1325	Digital Fundamentals <sup>2</sup>	3
ELMT 1301	Programmable Logic Controllers	3
Semester Total		12
Semester 2		Credits
ELMT 1405	Basic Fluid Power	4
INMT 1317	Industrial Automation	3
ELMT 2339	Advanced Programmable Logic Controllers	3
RBTC 1343	Robotics	3
Semester Total		13
Program Total		25

### Prerequisites

<sup>1,2</sup> CETT 1303 or IEIR 1302 (Prerequisite or Corequisite)

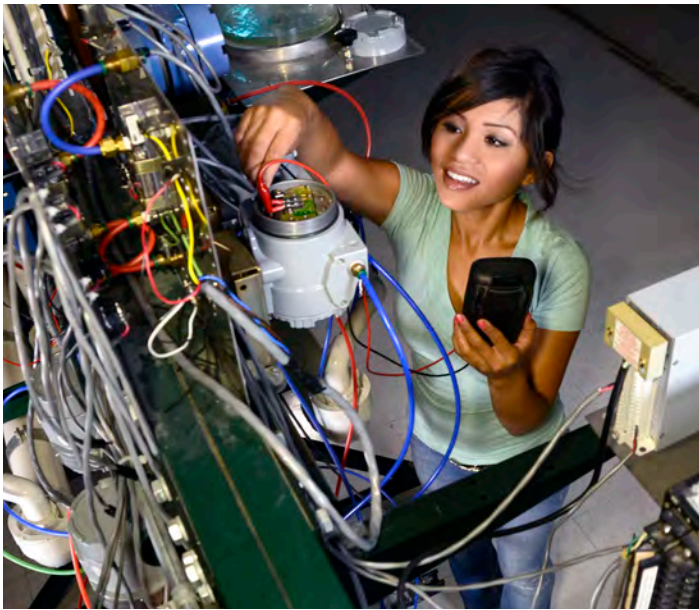
# Instrumentation Technology\*

Instrumentation is the science of measurement and control, including the variables of process control such as pressure, level, temperature and flow rates. These variables are used in all automated processes in power generation, oil refineries, chemical plants, food processing, pharmaceuticals, cosmetics, building environmental control and more.

Instrumentation is a vital part of any production or manufacturing plant, and it is the job of an instrument tech to keep these running. TSTC Instrumentation graduates are field-ready and qualified to go to work with minimum on-the-job training.

Instrumentation Technology is available at the Waco campus.

\*This program is eligible for a Money-Back Guarantee. Visit page 89 for more details.



## Instrumentation Technology Associate of Applied Science

Semester 1		Credits
CETT 1303	DC Circuits	3
DFTG 1313	Drafting for Specific Occupations	3
INTC 1305	Introduction to Instrumentation <sup>1</sup>	3
MATH 1316	Plane Trigonometry	3
Semester Total		12
Semester 2		Credits
CETT 1305	AC Circuits <sup>2</sup>	3
ELPT 1341	Motor Control <sup>3</sup>	3
INTC 1341	Principles of Automatic Control	3
ENGL 1301	Composition I	3
Semester Total		12
Semester 3		Credits
ELPT 2319	Programmable Logic Controllers I <sup>4</sup>	3
INTC 1356	Instrumentation Calibration	3
INTC 2336	Distributed Control and Programmable Logic <sup>5</sup>	3
PHYS 1310	Elementary Physics	3
Semester Total		12
Semester 4		Credits
INTC 1350	Digital Measurement and Controls <sup>6</sup>	3
INTC 1355	Unit Operations <sup>7</sup>	3
INTC 2333	Instrumentation Systems Installation <sup>8</sup>	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	3
Semester Total		12

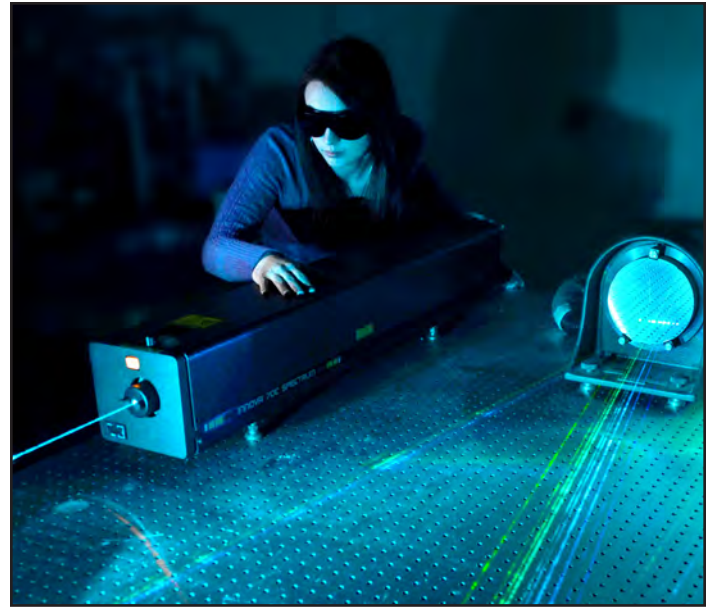
Semester 5		Credits
INTC 1348	Analytical Instrumentation <sup>9</sup>	3
INTC 2310	Principles of Industrial Measurements II <sup>10</sup>	3
INTC 2350	Fieldbus Process Control Systems <sup>11</sup>	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	3
Semester Total		12
Program Total		60

Prerequisites	
<sup>1</sup> CETT 1303 (Prerequisite or Corequisite)	
<sup>2</sup> CETT 1303 or IEIR 1302 (Prerequisite or Corequisite)	
<sup>3</sup> ELPT 1311 or CETT 1303 or IEIR 1371	
<sup>4</sup> ELPT 1341 (Prerequisite or Corequisite)	
<sup>5</sup> ELPT 2319 (Prerequisite or Corequisite)	
<sup>6</sup> ELPT 2319	
<sup>7,9</sup> INTC 1341	
<sup>8</sup> INTC 1355 (Prerequisite or Corequisite)	
<sup>10</sup> INTC 1355	
<sup>11</sup> INTC 2333	

## Laser Electro-Optics Technology

Laser Electro-Optics Technology program, you can develop an understanding and proficiency in lasers, electro-optics, optics, electronics and vacuum science. With access to laboratory equipment valued at over \$40 million, students build extensive knowledge and skills while working toward the Associate of Applied Science degree, and they master the skills necessary to work in areas such as research and development.

Laser Electro-Optics Technology is available at the Waco campus.



### Laser Electro Optics Associate of Applied Science

Semester 1		Credits
CETT 1303	DC Circuits	3
LOTT 1271	Mathematics for Photonics Technicians	2
SMFT 1471	Vacuum Technology	4
ENGL 1301	Composition I	<u>3</u>
Semester Total		12

Semester 2		Credits
NANO 1205	Nano Technology	2
CETT 1305	AC Circuits <sup>1</sup>	3
LOTT 1344	Fundamentals of Laser and Laser Safety	3
LOTT 1443	Geometrical Optics	<u>4</u>
Semester Total		12

Semester 3		Credits
CETT 1329	Solid State Devices <sup>2</sup>	3
LOTT 2445	Continuous Wave and Pulsed Lasers <sup>3</sup>	4
SMFT 2450	Vacuum Thin Films <sup>4</sup>	4
HUMA 1301	Introduction to Humanities I	<u>3</u>
Semester Total		14

Semester 4		Credits
LOTT 2432	Laser Maintenance and Repair <sup>5</sup>	4
LOTT 2436	Wave Optics <sup>6</sup>	4
PHYS 1310	Elementary Physics	3
PSYC 2301	General Psychology	<u>3</u>
Semester Total		14

Semester 5		Credits
LOTT 2435	Electro-Optic Devices <sup>7</sup>	4
CHEM 1105	Introductory Chemistry Laboratory I (lab)	1
CHEM 1305	Introductory Chemistry I (lecture) <sup>8</sup>	<u>3</u>
Semester Total		8

Program Total	60
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#### Prerequisites

<sup>1</sup> CETT 1303 or IEIR 1302 (Prerequisite or Corequisite)

<sup>2</sup> CETT 1305, IEIR 1371 or IEIR 1304

<sup>3</sup> LOTT 1344

<sup>4</sup> SMFT 1471 or SMFT 2335

<sup>5</sup> CETT 1379 or CETT 1329 (Prerequisite or Corequisite)

<sup>6</sup> LOTT 1443

<sup>7</sup> LOTT 2445

<sup>8</sup> CHEM 1105 (Prerequisite or Corequisite)

## Logistics Technology

Without an efficient system to facilitate the packing and transporting of goods and services, Texas' economy would grind to a halt. Today's logistics systems are technologically advanced and require skilled technicians to keep them operating smoothly. Logisticians analyze and coordinate an organizations' supply chain—the system that moves a product from supplier to consumer. They manage the entire life cycle of a product, which includes how a product is acquired, distributed, allocated and delivered.

Logistics Technology is available at the North Texas campus.

### Logistics Technology Associate of Applied Science

#### Semester 1

		Credits
BMGT 1313	Principles of Purchasing	3
ITSC 1309	Integrated Software Applications I	3
LMGT 1319	Introduction to Business Logistics	3
LMGT 1321	Introduction to Materials Handling	3
ACGM X3XX	Gen Ed Mathematics Elective	<u>3</u>
	<b>Semester Total</b>	<b>15</b>

#### Semester 2

		Credits
LMGT 1323	Domestic and International Transportation Management	3
BMGT 1309	Information and Project Management	3
LMGT 2330	International Logistics Management	3
ACGM X3XX	Gen Ed English Elective	3
ACGM X3XX	Gen Ed Elective	<u>3</u>
	<b>Semester Total</b>	<b>15</b>



#### Semester 3

		Credits
LMGT 1341	Freight Loss and Damage Claims	3
LMGT 1346	Radio Frequency Identification (RFID) - Wireless Information Systems	3
LMGT 1349	Materials Requirement Planning	3
LMGT 2334	Principles of Traffic Management	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	<u>3</u>
	<b>Semester Total</b>	<b>15</b>

#### Semester 4

		Credits
LMGT 1325	Warehouse and Distribution Center Management	3
LMGT 1340	Contemporary Logistics Issues	3
LMGT 2388	Internship: Logistics and Materials Management	3
BMGT 2303	or Problem-Solving and Decision-Making	
BMGT 1327	Principles of Management	3
HUMA 1301	Introduction to Humanities I	<u>3</u>
	<b>Semester Total</b>	<b>15</b>

**Program Total** **60**

# Mathematics

The Mathematics department supports and enhances TSTC's technical education mission. It provides Texas industry with employees who perform well at the entry level by their competence in mathematics and problem-solving techniques using principles of physics and mathematics; prepares graduates for advancement in the workplace through the acquisition of science- and mathematics-based problem-solving skills; and facilitates progress toward successful completion of further educational goals and/or lifelong learning experiences.

Mathematics is available at the Harlingen campus.



## Mathematics Associate of Science

Semester 1		Credits
MATH 2312	Pre-Calculus Math (3 SCH version) <sup>1</sup>	3
ENGL 1301	Composition I	3
ACGM X3XX	Fine Arts Elective	<u>3</u>
Semester Total		9
Semester 2		Credits
MATH 2413	Calculus I (4 SCH version) <sup>2</sup>	4
ENGL 1302	Composition II <sup>3</sup>	3
GOVT 2305	Federal Government (Federal Constitution & topics)	3
ACGM X3XX	Life and Physical Science Elective	<u>3</u>
Semester Total		13
Semester 3		Credits
MATH 2414	Calculus II (4 SCH version) <sup>4</sup>	4
GOVT 2306	Texas Government (Texas Constitution & topics)	3
ACGM X3XX	Life and Physical Science Elective	3
ACGM X3XX	Language, Philosophy and Culture Elective	<u>3</u>
Semester Total		13

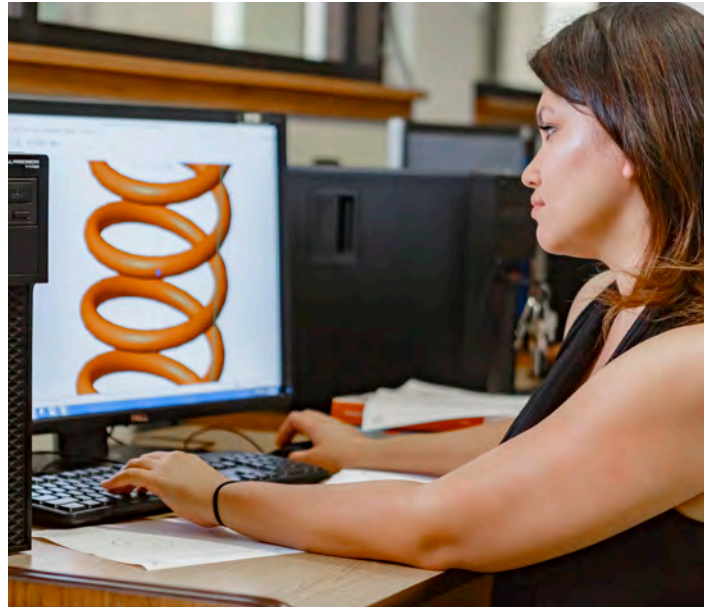
Semester 4		Credits
MATH 2415	Calculus III (4 SCH version) <sup>5</sup>	4
SPCH X3XX	Gen Ed Speech Elective	3
HIST 1301	United States History I	3
CORE X3XX	Gen Ed Core Elective	<u>3</u>
Semester Total		13
Semester 5		Credits
HIST 1302	United States History II	3
MATH 2320	Differential Equations	3
MATH X3XX	Gen Ed Mathematics Elective	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	<u>3</u>
Semester Total		12
Program Total		60

Prerequisites  
<sup>1</sup> MATH 1314  
<sup>2</sup> MATH 1316 or MATH 2312 or MATH 2412  
<sup>3</sup> ENGL 1301  
<sup>4</sup> MATH 2413  
<sup>5</sup> MATH 2414

# Mechanical/Electrical Drafting Technology

Demand for drafters varies by specialization, and nothing in the industry is more exciting than mechanical/electronic drafting. No longer are the pen and pencil the standard for drafters. Today in this field, student drafters are taught Computer-Aided Drafting (CAD) and can produce industrial drawings utilized in industry to produce all types of products. All students receive instruction in both two- and three-dimensional CAD systems. Students focus on drafting applications in mechanical, electro-mechanical, process piping, printed circuit board design, and many other areas of manufacturing and electronic-related drafting. Students will be exposed to the hottest drawing software on the market including AutoCad, Solid Works and Inventor.

Mechanical/Electrical Drafting Technology is offered at the Waco campus.



## Mechanical/Electrical Drafting Technology Associate of Applied Science

Semester 1		Credits
DFTG 1305	Technical Drafting	3
DFTG 1309	Basic Computer-Aided Drafting	3
DFTG 1370	Technical Mathematics Applications in Drafting	3
ITSC 1309	Integrated Software Applications I	3
ACGM X3XX	Gen Ed Elective	3
	<b>Semester Total</b>	<b>15</b>

Semester 2		Credits
DFTG 1329	Electro-Mechanical Drafting <sup>1</sup>	3
DFTG 1345	Parametric Modeling and Design <sup>2</sup>	3
DFTG 2319	Intermediate Computer-Aided Drafting <sup>3</sup>	3
INMT 1319	Manufacturing Processes	3
ACGM X3XX	Gen Ed Math/Natural Science Elective	3
	<b>Semester Total</b>	<b>15</b>

Semester 3		Credits
DFTG 1358	Electrical/Electronics Drafting <sup>4</sup>	3
DFTG 2302	Machine Drafting <sup>5</sup>	3
DFTG 2335	Advanced Technologies in Mechanical Design and Drafting <sup>6</sup>	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	3
	<b>Semester Total</b>	<b>15</b>

Semester 4		Credits
DFTG 2306	Machine Design <sup>7</sup>	3
DFTG 2323	Pipe Drafting	3
DFTG 2338	Final Project - Advanced Drafting <sup>8</sup>	3
DFTG 2350	Geometric Dimensioning and Tolerancing <sup>9</sup>	3
ACGM X3XX	Gen Ed Elective	3
	<b>Semester Total</b>	<b>15</b>
	<b>Program Total</b>	<b>60</b>

### Prerequisites

<sup>1,3</sup> DFTG 1309 (Prerequisite or Corequisite)

<sup>2</sup> DFTG 1309

<sup>4</sup> DFTG 2319 (Prerequisite or Corequisite)

<sup>5</sup> DFTG 1309 (Prerequisite or Corequisite)

<sup>6,8</sup> DFTG 2319 (Prerequisite or Corequisite)

<sup>7,9</sup> DFTG 1345 or DFTG 2335

## Mechatronics Technology

. Because industrial applications are becoming increasingly multidisciplinary, today's technicians need skills that cross a variety of disciplines. Mechatronics courses combine various disciplines to teach students a holistic approach to developing solutions for engineering applications. Skills found under the Mechatronics Technology umbrella include practical knowledge in the integration of electrical systems, fluid power, electronics, computer controls, PLCs, instrumentation, robotics and information technology.

Mechatronics Technology is available at the Harlingen campus.

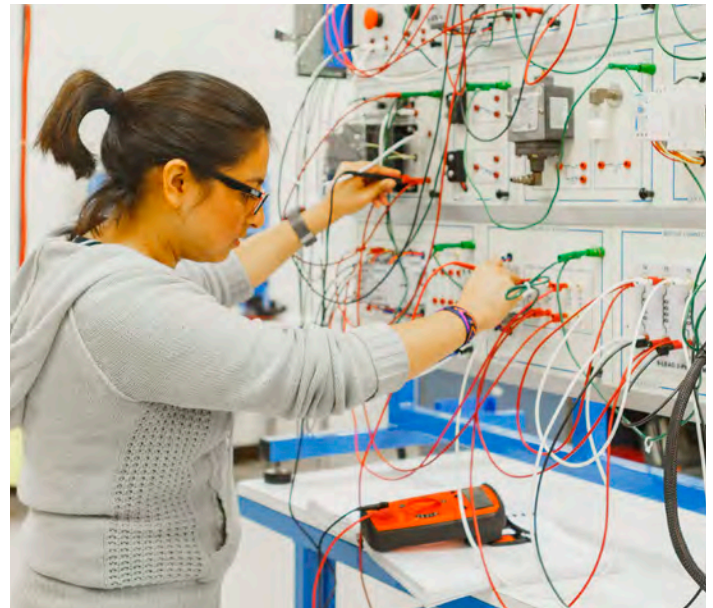
### Mechatronics Technology Associate of Applied Science

#### Semester 1

CETT 1303	DC Circuits	3
RBTC 1343	Robotics <sup>1</sup>	3
ENGL 1301	Composition I	3
MATH 1314	College Algebra	<u>3</u>
<b>Semester Total</b>		<b>12</b>

#### Semester 2

CETT 1305	AC Circuits <sup>2</sup>	3
CETT 1325	Digital Fundamentals <sup>3</sup>	3
ELMT 1405	Basic Fluid Power	4
SPCH X3XX	Gen Ed Speech Elective	<u>3</u>
<b>Semester Total</b>		<b>13</b>



#### Semester 3

ELMT 1301	Programmable Logic Controllers <sup>4</sup>	3
ELMT 2333	Industrial Electronics	3
IEIR 2388	or Internship - Industrial Electronics Technology/Technician	
INMT 1317	Industrial Automation	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	<u>3</u>
<b>Semester Total</b>		<b>12</b>

#### Semester 4

INTC 1341	Principles of Automatic Control	3
MFGT 2459	Industrial Automation II	4
ELMT 2339	Advanced Programmable Logic Controllers <sup>5</sup>	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>		<b>13</b>

#### Semester 5

ELMT 2341	Electromechanical Systems	3
RBTC 2347	Computer Integrated Manufacturing <sup>6</sup>	3
MFGT 1406	Mechanical Principles in Automated Manufacturing	<u>4</u>
<b>Semester Total</b>		<b>10</b>

**Program Total** **60**

#### Prerequisites

<sup>1</sup> CETT 1303 or IEIR 1302 (Prerequisite or Corequisite)

<sup>2,3</sup> CETT 1303

<sup>4</sup> CETT 1325

<sup>5</sup> ELMT 1301

<sup>6</sup> RBTC 1343 or CETT 1325

# Occupational Safety Compliance Technology

Occupational Safety Compliance Technology offers an in-depth study of Occupational Safety and Health Administration regulations and other pertinent federal, state and local standards to improve, develop and manage a company's safety system. Safety professionals are responsible for interpreting and implementing safety regulations, policies and procedures, as well as enforcing government safety codes.

The Occupational Safety Compliance Technology curriculum includes instruction on compliance with regulatory agencies, including submitting regulatory reports and documents, conducting safety training, and performing safety inspections and audits. Students also learn how to develop written OSHA-related programs, such as hazard communication, permit-required confined space entry, respiratory protection, lockout/tagout, bloodborne pathogen plan and emergency response plans. As a student develops into a safety professional, they can learn to anticipate, recognize and control industrial health hazards to help build and maintain a safe work culture.

Occupational Safety Compliance Technology is available at the Waco campus.

## Occupational Safety Compliance Technology Associate of Applied Science

Semester 1		Credits
EPCT 1205	Environmental Regulations Overview	2
EPCT 1307	Introduction to Environmental Safety and Health	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	3
ACGM X3XX	Gen Ed Elective	<u>3</u>
	<b>Semester Total</b>	<b>11</b>



Semester 2		Credits
ITSC 1309	Integrated Software Applications I	3
OSHT 1213	Accident Prevention, Inspection, and Investigation	2
OSHT 2401	OSHA Regulations - General Industry	4
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	<u>3</u>
	<b>Semester Total</b>	<b>12</b>

Semester 3		Credits
EPCT 1341	Principles of Industrial Hygiene	3
OSHT 1209	Physical Hazards Control	2
ACGM X4XX	Gen Ed Math/Natural Science Elective	4
ACGM X3XX	Gen Ed Elective	<u>3</u>
	<b>Semester Total</b>	<b>12</b>

Semester 4		Credits
EPCT 2331	Industrial Hygiene Applications	3
OSHT 1221	Fire Protection Systems	2
OSHT 1305	OSHA Regulations - Construction Industry	3
OSHT 1316	Material Handling	3
OSHT 2209	Safety Program Management	<u>2</u>
	<b>Semester Total</b>	<b>13</b>

Semester 5		Credits
EPCT 1301	Hazardous Waste Operations and Emergency Response (HAZWOPER) Training and Related Topics	3
OSHT 2320	Safety Training Presentation Techniques	3
OSHT 2370	Safety and Health First Aid Certification	3
OSHT 2388	Internship - Occupational Safety and Health Technology/Technician	<u>3</u>
	<b>Semester Total</b>	<b>12</b>

**Program Total** **60**

## Pharmacy Technician

Pharmacy technicians are vital to the future of the pharmacy and its customers. Working under the direction of a licensed pharmacist, pharmacy technicians assist pharmacists in their daily functions, allowing pharmacists to spend more time addressing patient questions, cross-referencing prescribed medications and interactions, and ensuring that the patient receives the correct drug therapy.

In hospitals, technicians take on added responsibilities such as reading patient charts, preparing medications, delivering prescribed medications to patients and copying detailed information about those medications onto patient profiles.

The Pharmacy Technician program is available at the Waco campus.



### Pharmacy Technician Certificate 2

Semester 1		Credits
ITSC 1309	Integrated Software Applications I	3
PHRA 1205	Drug Classification	2
PHRA 1209	Pharmaceutical Mathematics I	2
PHRA 1301	Introduction to Pharmacy	3
PHRA 1313	Community Pharmacy Practice	3
<b>Semester Total</b>		<b>13</b>
Semester 2		Credits
PHRA 1247	Pharmaceutical Mathematics II	2
PHRA 1345	Compounding Sterile Preparations	3
PHRA 1349	Institutional Pharmacy Practice	3
PHRA 2461	Clinical - Pharmacy Technician/Assistant	4
<b>Semester Total</b>		<b>12</b>
Semester 3		Credits
PHRA 1202	Pharmacy Law	2
PHRA 1243	Pharmacy Technician Certification Review	2
PHRA 1441	Pharmacy Drug Therapy and Treatment	4
PHRA 2462	Clinical - Pharmacy Technician/Assistant	4
<b>Semester Total</b>		<b>12</b>
<b>Program Total</b>		<b>37</b>

# Physics

The Associate of Science degree in Physics is intended for students planning to transfer to a college or university in order to obtain a bachelor's degree in Physics or a physics-related discipline, such as astronomy, geophysics or any engineering field.

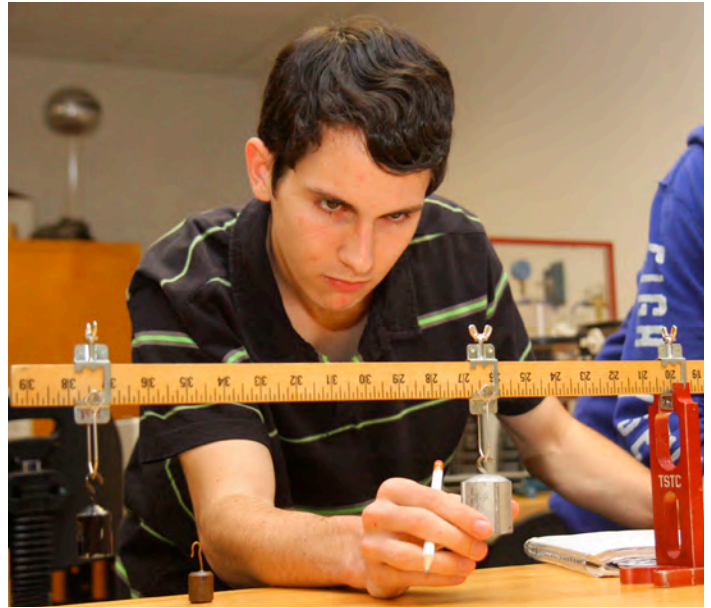
Physics is available at the Harlingen campus.

## Physics Associate of Science

Semester 1		Credits
MATH 2312	Pre-Calculus Math (3 SCH version) <sup>1</sup>	3
ENGL 1301	Composition I	3
ACGM X3XX	Gen Ed Fine Arts Elective	<u>3</u>
Semester Total		9

Semester 2		Credits
ENGL 1302	Composition II <sup>2</sup>	3
GOVT 2305	Federal Government (Federal Constitution & topics)	3
MATH 2413	Calculus I (4 SCH version) <sup>3</sup>	4
CHEM 1311	General Chemistry I (lecture) <sup>4</sup>	3
CHEM 1111	General Chemistry I (lab) <sup>5</sup>	<u>1</u>
Semester Total		14

Semester 3		Credits
MATH 2414	Calculus II (4 SCH version) <sup>6</sup>	4
GOVT 2306	Texas Government (Texas Constitution & topics)	3
CHEM 1312	General Chemistry II (lecture) <sup>7</sup>	3
CHEM 1112	General Chemistry II (lab) <sup>8</sup>	1
ACGM X3XX	Language, Philosophy and Culture Elective	<u>3</u>
Semester Total		14



Semester 4		Credits
CORE X3XX	Gen Ed Core Elective	3
HIST 1301	United States History I	3
PHYS 2325	University Physics I (lecture) <sup>9</sup>	3
PHYS 2125	University Physics Laboratory I (lab) <sup>10</sup>	1
SPCH X3XX	Gen Ed Speech Elective	<u>3</u>
Semester Total		13

Semester 5		Credits
PHYS 2326	University Physics II (lecture) <sup>11</sup>	3
PHYS 2126	University Physics Laboratory II (lab) <sup>12</sup>	1
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	3
HIST 1302	United States History II	<u>3</u>
Semester Total		10

<b>Program Total</b>	<b>60</b>
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### Prerequisites

- <sup>1</sup> MATH 1314
- <sup>2</sup> ENGL 1301
- <sup>3</sup> MATH 1316 or MATH 2312 or MATH 2412
- <sup>4</sup> MATH 1314 (Prerequisite)  
CHEM 1111 (Prerequisite or Corequisite)
- <sup>5</sup> CHEM 1311 (Prerequisite or Corequisite)
- <sup>6</sup> MATH 2413
- <sup>7</sup> CHEM 1111, CHEM 1311 (Prerequisite)  
CHEM 1112 (Prerequisite or Corequisite)
- <sup>8</sup> CHEM 1111, CHEM 1311 (Prerequisite )  
CHEM 1312 (Prerequisite or Corequisite)
- <sup>9</sup> MATH 2413 (Prerequisite )  
PHYS 2125 (Prerequisite or Corequisite)
- <sup>10</sup> PHYS 2325 (Prerequisite or Corequisite)
- <sup>11</sup> PHYS 2325, MATH 2414 (Prerequisite )  
PHYS 2126 (Prerequisite or Corequisite)
- <sup>12</sup> PHYS 2326 (Prerequisite or Corequisite)

# Plumbing & Pipefitting Technology

Plumbing & Pipefitting Technology is designed to help students learn the ins and outs of this important, well-paying field. This specialization can help you get in and on your way in a hurry through a one-year, intensive training program to help you build the skill base needed to succeed in the industry. The Plumbing & Pipefitting Technology certificate progresses from basic to advanced coursework in plumbing, piping, construction, fabrication, rigging, welding and more. And at TSTC, your college credits can count toward the hours needed to obtain a state license.

Plumbing & Pipefitting Technology is available at the Waco campus



## Plumbing & Pipefitting Technology Certificate 1

Semester 1		Credits
CNBT 1300	Residential and Light Commercial Blueprint Reading	3
PFPB 1323	Plumbing Codes I	3
PFPB 2308	Piping Standards and Materials	3
PFPB 2309	Residential Construction Plumbing I	3
PFPB 2349	Field Measuring, Sketching, and Layout	3
Semester Total		15
Semester 2		Credits
PFPB 1321	Plumbing Maintenance and Repair	3
PFPB 1347	Backflow Prevention	3
PFPB 2336	Commercial Construction and Fixture Setting	3
PFPB 2343	Advanced Pipe Practices	3
Semester Total		12
Semester 3		Credits
CNBT 1680	Cooperative Education - Construction Engineering Technology/Technician	6
Semester Total		6
Program Total		33

## Precision Machining Technology

Persons interested in becoming machinists should be mechanically inclined and have good problem-solving abilities. They must be able to work independently and perform highly precise and accurate work that requires concentration and physical effort. Precision Machining Technology at TSTC guides students through a series of machine operation courses to develop and challenge their skills using conventional and Computer Numerical Controlled (CNC) machines. Students also learn about the various materials used in today's manufacturing industry. Machinists use the following machines: horizontal and vertical mills, engine lathes, drill presses, saws, heat treat furnaces, and surface and pedestal grinders. Students learn to program and operate computer-aided machines such as CNC mills and lathes, and learn related skills such as precision measurement, blueprint reading and the heat treatment of metals. A capstone course challenges the students' creativity by providing them the opportunity to design and build complex machinery.

For quicker entry into the industry, a Machining certificate is also available.

Precision Machining Technology is available at the Fort Bend County, Harlingen, Marshall, North Texas, Waco and Williamson County campuses.

### Precision Machining Technology Associate of Applied Science

Semester 1	Credits
DFTG 1325 Blueprint Reading and Sketching	3
MCHN 1300 Beginning Machine Shop	3
MCHN 1320 Precision Tools and Measurement	3
MATH 1314 College Algebra	3
ACGM X3XX Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>	<b>15</b>
Semester 2	Credits
ENTC 1371 Engineering Computer Graphics I <sup>1</sup>	3
MCHN 1438 Basic Machine Shop I <sup>2</sup>	4
MCHN 2303 Fundamentals of Computer Numerical Controlled (CNC) Machine Controls	3
MCHN 2344 Computerized Numerical Control Programming <sup>3</sup>	3
MATH 1316 Plane Trigonometry	<u>3</u>
<b>Semester Total</b>	<b>16</b>
Semester 3	Credits
MCHN 1326 Introduction to Computer-Aided Manufacturing (CAM) <sup>4</sup>	3
MCHN 1454 Intermediate Machining II <sup>5</sup>	4
MCHN 2335 Advanced CNC Machining <sup>6</sup>	3
ENGL 1301 Composition I	<u>3</u>
<b>Semester Total</b>	<b>13</b>

Semester 4	Credits
ENTC 2310 Machine Design <sup>7</sup>	3
MCHN 2338 Advanced Computer-Aided Manufacturing (CAM) <sup>8</sup>	3
MCHN 2341 Advanced Machining I <sup>9</sup>	3
MCHN 2471 Specialized Equipment and Processes <sup>10</sup>	4
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	<u>3</u>
<b>Semester Total</b>	<b>16</b>
<b>Program Total</b>	<b>60</b>

#### Prerequisites

- <sup>1,3</sup> DFTG 1325  
<sup>2</sup> MCHN 1300  
<sup>4</sup> ENTC 1371 or DFTG 1309  
<sup>5</sup> MCHN 1438  
<sup>6</sup> MCHN 2344 or MCHN 2303  
<sup>7</sup> MCHN 1326, ENTC 1371  
<sup>8</sup> MCHN 1326  
<sup>9</sup> MCHN 1454  
<sup>10</sup> MCHN 1454

### Machining Certificate 1

Semester 1	Credits
DFTG 1325 Blueprint Reading and Sketching	3
MCHN 1300 Beginning Machine Shop	3
MCHN 1320 Precision Tools and Measurement	3
MCHN 1343 Machine Shop Mathematics	<u>3</u>
<b>Semester Total</b>	<b>12</b>

Semester 2	Credits
ENTC 1371 Engineering Computer Graphics I <sup>1</sup>	3
MCHN 1438 Basic Machine Shop I <sup>2</sup>	4
MCHN 2344 Computerized Numerical Control Programming <sup>3</sup>	3
MCHN 2303 Fundamentals of Computer Numerical Controlled (CNC) Machine Controls	<u>3</u>
<b>Semester Total</b>	<b>13</b>

Semester 3	Credits
MCHN 1326 Introduction to Computer-Aided Manufacturing (CAM) <sup>4</sup>	3
MCHN 1454 Intermediate Machining II <sup>5</sup>	4
MCHN 2335 Advanced CNC Machining <sup>6</sup>	3
MCHN 2471 Specialized Equipment and Processes <sup>7</sup>	<u>4</u>
<b>Semester Total</b>	<b>14</b>
<b>Program Total</b>	<b>39</b>

#### Prerequisites

- <sup>1,3</sup> DFTG 1325  
<sup>2</sup> MCHN 1300  
<sup>4</sup> ENTC 1371 or DFTG 1309  
<sup>5</sup> MCHN 1438  
<sup>6</sup> MCHN 2344, MCHN 2303  
<sup>7</sup> MCHN 1454

## Process Operations

A process technician is a key member of a team responsible for planning, analyzing and controlling the production of products, from the acquisition of raw materials through the production and distribution of products to customers in a variety of process industries. Process operations technicians are responsible for efficient and safe operation of all process equipment within the plant, monitoring of all process and utility systems and equipment to ensure they operate within their proper parameters, collection of product and utility samples and performing lab analysis to ensure products meet specifications, preparation of equipment and systems for maintenance activities, and more. Process Operations students will learn the function and use of pumps, tanks, valves and instrumentation associated with various process systems; knowledge of process variables, indicators and controllers; troubleshooting tools and troubleshooting steps to solve problems in a simple process system. They will be able to demonstrate the proper use of safety, health and environmental equipment.

Process Operations is available at the Marshall campus.



### Process Operations Associate of Applied Science

#### Semester 1

	<b>Credits</b>
PTAC 1302 Introduction To Process Technology	3
PTAC 1308 Safety, Health, and Environment I	3
PTAC 1332 Process Instrumentation I	3
MATH 1314 College Algebra	3
<b>Semester Total</b>	<b>12</b>

#### Semester 2

	<b>Credits</b>
PTAC 1310 Process Technology I - Equipment <sup>1</sup>	3
PTAC 1354 Industrial Processes	3
PTAC 2336 or Process Instrumentation II	
SCIT 1318 Applied Physics	3
ENGL 1301 Composition I	3
<b>Semester Total</b>	<b>12</b>

#### Semester 3

	<b>Credits</b>
PTAC 2314 Principles of Quality <sup>2</sup>	3
PTAC 2346 Process Troubleshooting	3
DFTG 1325 Blueprint Reading and Sketching	3
ITSC 1301 Introduction to Computers	3
<b>Semester Total</b>	<b>12</b>

#### Semester 4

	<b>Credits</b>
PTAC 2420 Process Technology II - Systems <sup>3</sup>	4
PTAC 2438 Process Technology III - Operations	4
CHEM 1111 General Chemistry I (lab) <sup>4</sup>	1
CHEM 1311 General Chemistry I (lecture) <sup>5</sup>	3
<b>Semester Total</b>	<b>12</b>

#### Semester 5

	<b>Credits</b>
PTAC 2386 Internship - Process Technology/Technician	3
BMGT 2347 or Critical Thinking and Problem-Solving	
PTAC 2387 Internship - Process Technology/Technician	3
PYSC 1301 General Psychology	3
HUMA 1301 Introduction to Humanities I	3
<b>Semester Total</b>	<b>12</b>

**Program Total** **60**

#### Prerequisites

<sup>1</sup> PTAC 1302

<sup>2,3</sup> PTAC 1310

<sup>4</sup> CHEM 1311 (Prerequisite or Corequisite)

<sup>5</sup> MATH 1314 (Prerequisite), CHEM 1111 (Prerequisite or Corequisite)

# Radiation Protection Technology

Radiation Protection Technology can give you the technical education you need to enter this intriguing field. As a student specializing in Radiation Protection, you can learn to properly handle, store and use ionizing sources of radiation. Students are able to work with a vast array of industry-standard measurement equipment to determine levels of radiation and contamination. The curriculum focuses on understanding radioactive decay, as well as reasonably achievable practices, reactor systems and operations, radioactive waste management and regulatory applications. Students also conduct several laboratory exercises at research reactor facilities to aid in developing student skills. In addition, students can gain firsthand experience through an optional cooperative training program sponsored by industry partners at a nuclear power plant. As radiation protection technicians, students learn to identify, evaluate and plan for radiation-related hazards to the workplace and public. Students looking to diversify their primary degree plan can choose an advanced certificate in Health Physics.

Radiation Protection Technology is available at the Waco campus.



## Radiation Protection Technology Associate of Applied Science

Semester 1	Credits
EPCT 1307 Introduction to Environmental Safety and Health	3
NUCP 1319 Radiation Physics	3
ENGL 1301 Composition I	3
EPCT 1205 Environmental Regulations Overview	2
<b>Semester Total</b>	<b>11</b>

Semester 2	Credits
IRAD 1301 Radiation Detection Measurement I	3
ITSC 1309 Integrated Software Applications I	3
MATH 1314 College Algebra	3
ACGM X3XX Gen Ed Social/Behavioral Science Elective	3
<b>Semester Total</b>	<b>12</b>

Semester 3	Credits
IRAD 2271 Radiation Detection Measurements II	2
NUCP 2301 Radiation Protection I	3
NUCP 1241 Personnel and Environmental Monitoring	2
NUCP 1391 Special Topics in Nuclear/Nuclear Power Technology/Technician	3
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	3
<b>Semester Total</b>	<b>13</b>

Semester 4	Credits
NUCP 1271 Introduction to Nuclear Systems	2
NUCP 2311 Radioactive Waste Disposal and Management	3
NUCP 2302 and Radiation Protection II	3
NUCP 2681 or Cooperative Education - Nuclear/Nuclear Power Technology/Technician	
CHEM X4XX Gen Ed Chemistry Elective	4
<b>Semester Total</b>	<b>12</b>

Semester 5	Credits
NUCP 2331 Radiation Protection III	3
NUCP 2379 Reactor Physics <sup>1</sup>	3
EPCT 1301 Hazardous Waste Operations and Emergency Response (HAZWOPER) Training and Related Topics	3
OSHT 2320 Safety Training Presentation Techniques	3
<b>Semester Total</b>	<b>12</b>
<b>Program Total</b>	<b>60</b>

### Prerequisite

<sup>1</sup> NUCP 1319

## Health Physics Advanced Technical Certificate

Semester 1	Credits
NUCP 1319 Radiation Physics	3
IRAD 1301 Radiation Detection Measurement I	3
NUCP 1391 Special Topics in Nuclear/Nuclear Power Technology/Technician	3
NUCP 2301 Radiation Protection I	3
NUCP 2302 Radiation Protection II	3
WECM X3XX NUCP Approved Elective <sup>1</sup>	3
<b>Semester Total</b>	<b>18</b>
<b>Program Total</b>	<b>18</b>

<sup>1</sup> NUCP Approved Electives:	Credits
NUCP 2311 Radioactive Waste Disposal and Management	3
NUCP 2331 Radiation Protection III	3
NUCP 2379 Reactor Physics	3

## Registered Nursing

Registered nurses (RNs) make up the largest health care occupation in the United States. Statistics show there are almost 3 million jobs available and over 100,000 vacant positions. Nurses are a critical and essential resource in patient care. They consider the patient as a "whole," which includes emotional, mental and physical needs. They work to restore health and wellness, prevent disease, provide and coordinate patient care, and educate patients and the public about various health conditions.

RNs can work in hospitals, physicians' offices, home health care services, nursing care facilities, correctional facilities, schools, the military and more. Students participate in an active learning environment, including simulation learning labs that are led by instructors with multiple medical/surgical backgrounds.

Registered Nursing is available at the Harlingen and Sweetwater campuses.



### LVN-RN Transition Associate of Applied Science

Semester 1		Credits
BIOL 2401	Anatomy & Physiology I (lecture + lab)	4
BIOL 2301	or Anatomy & Physiology I (lecture)	
BIOL 2101	and Anatomy & Physiology I (lab)	
ENGL 1301	Composition I	3
PSYC 2314	Lifespan Growth & Development	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	<u>3</u>
	<b>Semester Total</b>	<b>13</b>

Semester 2		Credits
BIOL 2402	Anatomy & Physiology II (lecture + lab)	4
BIOL 2302	or Anatomy & Physiology II (lecture) <sup>1</sup>	
BIOL 2102	and Anatomy & Physiology II (lab) <sup>2</sup>	
PSYC 2301	General Psychology	3
BIOL 2420	Microbiology for Non-Science Majors (lecture + lab)	4
BIOL 2320	or Microbiology for Non-Science Majors (lecture) <sup>3</sup>	3
BIOL 2120	and Microbiology for Non-Science Majors Laboratory (lab) <sup>4</sup>	<u>1</u>
	<b>Semester Total</b>	<b>11</b>

Semester 3		Credits
RNSG 1210	Introduction to Community-Based Nursing	2
RNSG 1227	Transition to Professional Nursing	2
RNSG 1261	Clinical - Registered Nursing/Registered Nurse	2
RNSG 1300	Health Assessment Across the Lifespan	3
RNSG 1301	Pharmacology	<u>3</u>
	<b>Semester Total</b>	<b>12</b>

Semester 4		Credits
RNSG 1343	Complex Concepts of Adult Health	3
RNSG 1412	Nursing Care of the Childbearing and Childrearing Family	4
RNSG 2162	Clinical - Registered Nursing/Registered Nurse	1
RNSG 2213	Mental Health Nursing	2
RNSG 2262	Clinical - Registered Nursing/Registered Nurse	<u>2</u>
	<b>Semester Total</b>	<b>12</b>

Semester 5		Credits
RNSG 1463	Clinical - Registered Nursing/Registered Nurse	4
RNSG 2221	Professional Nursing: Leadership and Management	2
RNSG 2230	Professional Nursing Review and Licensure Preparation	2
RNSG 1207	or Nursing Jurisprudence	
RNSG 2432	Enhanced Concepts of Adult Health	<u>4</u>
	<b>Semester Total</b>	<b>12</b>

**Program Total** **60**

#### Prerequisites

<sup>1</sup> BIOL 2102 (Prerequisite or Corequisite)

<sup>2</sup> BIOL 2302 (Prerequisite or Corequisite)

<sup>3</sup> BIOL 2120 (Prerequisite or Corequisite)

<sup>4</sup> BIOL 2320 (Prerequisite or Corequisite)

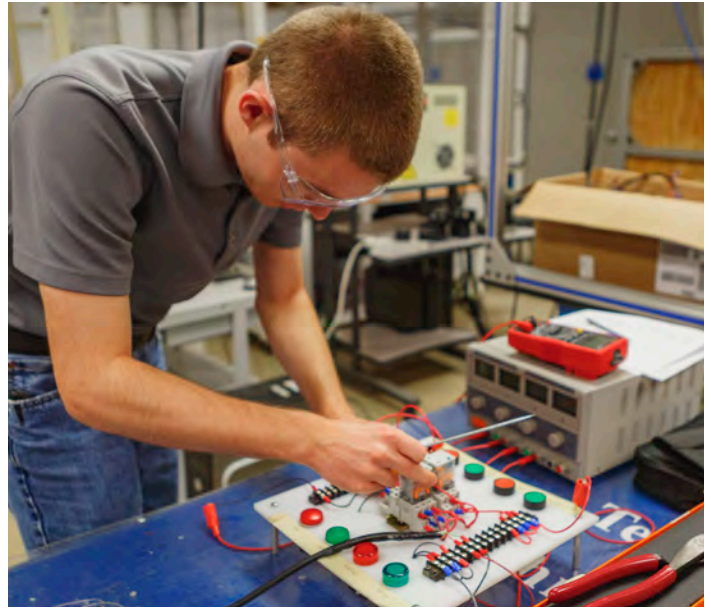
# Robotics Technology

TSTC's Robotics Technology program prepares students for a job in this exploding career field. This option emphasizes the study of complex mechanical systems in computer-integrated manufacturing or CIM environments. Focusing on automated manufacturing processes and the role of robots and associated supporting equipment, coursework covers motion programming, vision and conveyor systems, computer networking, PLC programming, automated sorting, sensor systems, and computer integration.

Robotics Technology is available at the Fort Bend County and Waco campuses.

## Robotics Technology Associate of Applied Science

Semester 1		Credits
CETT 1303	DC Circuits	3
DFTG 1313	Drafting for Specific Occupations	3
RBTC 1343	Robotics <sup>1</sup>	3
MATH 1316	Plane Trigonometry	3
Semester Total		12
Semester 2		Credits
CETT 1305	AC Circuits <sup>2</sup>	3
ELPT 1341	Motor Control <sup>3</sup>	3
RBTC 1355	Sensors	3
ENGL 1301	Composition I	3
Semester Total		12
Semester 3		Credits
CETT 1325	Digital Fundamentals <sup>4</sup>	3
ELPT 2319	Programmable Logic Controllers I <sup>5</sup>	3
RBTC 1347	Electro-Mechanical Devices <sup>6</sup>	3
RBTC 2339	Robot Programming and Diagnostics <sup>7</sup>	3
Semester Total		12
Semester 4		Credits
RBTC 1341	Vision Systems <sup>8</sup>	3
RBTC 1345	Robot Interfacing <sup>9</sup>	3
PHYS 1310	Elementary Physics	3
PSYC 2301	General Psychology	3
Semester Total		12



Semester 5		Credits
RBTC 2335	Numerical Controlled/Computer Numerical Control Programming or Digital Measurement and Controls <sup>10</sup>	3
INTC 1350	Robot Application, Set-up, and Testing <sup>11</sup>	3
RBTC 2345	Computer Integrated Manufacturing <sup>12</sup>	3
RBTC 2347	Gen Ed Humanities/Fine Arts Elective	3
ACGM X3XX	Semester Total	12
Program Total		60

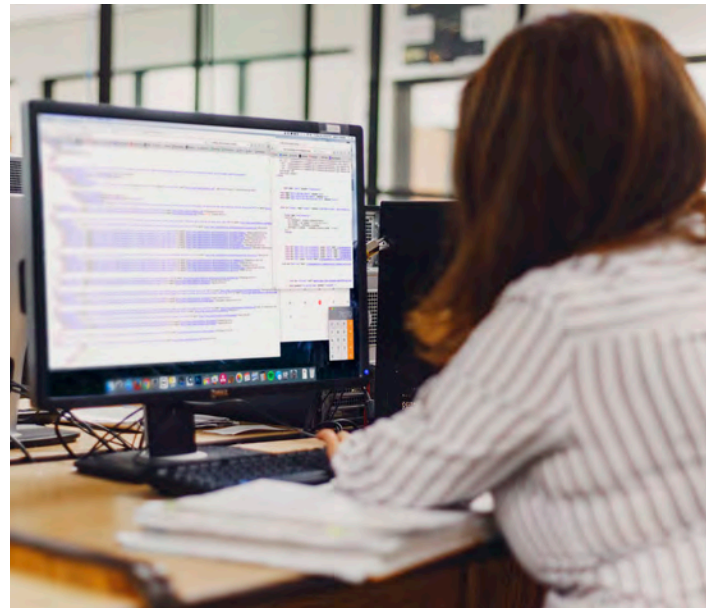
### Prerequisites

- <sup>1</sup> IEIR 1302 or CETT 1303 (Prerequisite or Corequisite)  
<sup>2</sup> CETT 1303 or IEIR 1302 (Prerequisite or Corequisite)  
<sup>3</sup> ELPT 1311 or CETT 1303 or IEIR 1371  
<sup>4</sup> CETT 1305, IEIR 1302, IEIR 1304, IEIR 1371, or CETT 1303 (Prerequisite or Corequisite)  
<sup>5</sup> ELPT 1341 (Prerequisite or Corequisite)  
<sup>6,7</sup> RBTC 1343  
<sup>8,9,11</sup> RBTC 2339  
<sup>10</sup> ELPT 2319  
<sup>12</sup> RBTC 1343 or CETT 1325

## Software Development Technology

Software Development Technology is a challenging field that offers a variety of career opportunities. As a Software Development Technician, you have the freedom to choose your particular niche in the computer industry. You can major in software development, Windows programming or mobile development. As varied as the career opportunities are, so is your earning potential. This degree provides an effective mix of courses to create well-balanced computer programmers. We focus on concepts and techniques that are applicable to any programming language, as well as detailed functionalities of the programming languages C, C++, C#, .NET, Visual Basic.NET, ADO.NET, Java and the database systems MS Access, Oracle and SQL Server.

Software Development is available at the Marshall campus.



### Software Development Technology Associate of Applied Science

Semester 1		Credits
ITNW 1308	Implementing and Supporting Client Operating Systems	3
ITSE 1329	Programming Logic and Design	3
ITSW 1307	Introduction to Database	3
ACGM X3XX	Gen Ed Elective	<u>3</u>
Semester Total		12

Semester 2		Credits
ITSW 2337	Advanced Database	3
ITSE 1306	PHP Programming <sup>1</sup>	3
ITSE 1332	Introduction to Visual Basic.NET Programming <sup>2</sup>	3
MATH 1314	College Algebra	<u>3</u>
Semester Total		12

Semester 3		Credits
ITSE 1307	Introduction to C++ Programming	3
ITSE 1359	Introduction to Scripting Languages	3
ITSE 2334	Advanced Visual Basic.NET Programming <sup>3</sup>	3
ACGM X3XX	Gen Ed Elective	<u>3</u>
Semester Total		12

Semester 4		Credits
ITSE 1330	Introduction to C# Programming <sup>4</sup>	3
ITSE 2317	Java Programming <sup>5</sup>	3
ITSE 2331	Advanced C++ Programming <sup>6</sup>	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	<u>3</u>
Semester Total		12

Semester 5		Credits
INEW 2332	Comprehensive Software Project: Coding, Testing, and Implementation	3
ITSE 2386	or Internship - Computer Programming/Programmer, General	
ITSE 2310	iOS Application Programming <sup>7</sup>	3
ITSE 1333	Mobile Applications Development	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	<u>3</u>
Semester Total		12

Program Total 60

#### Prerequisites

<sup>1,2,4,7</sup> ITSE 1329

<sup>3</sup> ITSE 1332

<sup>5</sup> ITSE 1307 or ITSE 1329

<sup>6</sup> ITSE 1307

## Solar Energy Technology

Harnessing the sun's power to convert it into electricity is not a new concept, but only in recent years has the technology really taken off. The rising cost of fossil fuels on both the pocketbook and the environment has spurred interest in renewable resources such as solar energy. Perhaps that's why the future looks so bright for those in the solar energy industry. TSTC is one of just a handful of colleges in the nation to offer an associate degree in Solar Energy Technology. Students will learn both Solar Photovoltaic (generating electricity) and Solar Thermal (heating fluids) in a program designed to give students a hands-on experience before they've even entered the job market. TSTC students get access to a live learning lab on the 216-kilowatt solar roof of TSTC's Electronics Center. Combined with knowledgeable, experienced staff and an advisory committee of solar industry professionals, you can get the education and experience you need for a successful, exciting career in Solar Energy Technology.

Solar Energy Technology is available at the Waco campus.



### Solar Energy Technology Associate of Applied Science

#### Semester 1

	Credits
CNBT 2317 Green Building	3
IEIR 1371 Electrical Principles and Applications	3
RBPT 1370 Building Envelope Inspection	3
SOLR 1371 Introduction to Solar and Alternative Energy Technologies	3
SOLR 2377 Codes for Alternative Energy, Efficiency & Conservation	<u>3</u>
<b>Semester Total</b>	<b>15</b>

#### Semester 2

	Credits
ELPT 1329 Residential Wiring	3
RBPT 2325 Energy Rating Systems for Homes	3
RBPT 2329 Residential Verification and Rating	3
RBPT 2359 Residential Building Performance Consulting	3
SOLR 1372 Foundations of Solar Photovoltaic Power Generation	<u>3</u>
<b>Semester Total</b>	<b>15</b>

#### Semester 3

	Credits
ELPT 1345 Commercial Wiring	3
OSHT 1305 OSHA Regulations - Construction Industry	3
SOLR 1273 Foundations of Solar Thermal Systems	2
ENGL 1301 Composition I	3
ACGM X3XX Gen Ed Humanities/Fine Arts Elective	<u>3</u>
<b>Semester Total</b>	<b>14</b>

#### Semester 4

	Credits
CNBT 1346 Construction Estimating I	3
SOLR 2275 Solar System Design, Installation, Troubleshooting & Repair	2
SOLR 2276 Special Projects in Solar Energy Systems	2
BUSI 2301 Business Law	3
ACGM X3XX Gen Ed Math/Natural Science Elective	3
ACGM X3XX Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>	<b>16</b>

**Program Total** **60**

## Surgical Technology

Surgical technologists assist in operations under the supervision of surgeons, registered nurses or other surgical personnel. Before an operation, surgical technologists help set up the operating room with surgical instruments, equipment and sterile solutions. During surgery, technologists pass instruments and other sterile supplies to surgeons and surgeon assistants. They may hold retractors, cut sutures, and help count sponges, needles, supplies and instruments. Surgical technologists help prepare, care for and dispose of specimens taken for laboratory analysis and may help apply dressings. This program provides classroom education and supervised clinical experience. Studies cover the care and safety of patients during surgery, aseptic techniques and surgical procedures. Students also learn to sterilize instruments, prevent and control infection, and handle special drugs, solutions, supplies and equipment. Surgical technologists must possess manual dexterity to handle instruments efficiently and quickly. They also must be conscientious, orderly, and emotionally stable to handle the demands of the operating room environment. Technologists must respond quickly and have a full understanding of the procedures so that they may anticipate the needs of surgeons without having to be asked for instruments or supplies.

Surgical Technology is available at the Harlingen campus.

### Surgical Technology Associate of Applied Science

<b>Semester 1</b>		<b>Credits</b>
HITT 1305	Medical Terminology I	3
BIOL 2301	Anatomy & Physiology I (lecture) <sup>1</sup>	3
BIOL 2101	Anatomy & Physiology I (lab) <sup>2</sup>	1
MATH 1314	College Algebra	3
<b>Semester Total</b>		<b>10</b>
<b>Semester 2</b>		<b>Credits</b>
BIOL 2302	Anatomy & Physiology II (lecture) <sup>3</sup>	3
BIOL 2102	Anatomy & Physiology II (lab) <sup>4</sup>	1
ENGL 1301	Composition I	3
SPCH X3XX	Gen Ed Speech Elective	3
<b>Semester Total</b>		<b>10</b>
<b>Semester 3</b>		<b>Credits</b>
BIOL 2320	Microbiology for Non-Science Majors (lecture) <sup>5</sup>	3
BIOL 2120	Microbiology for Non-Science Majors Laboratory (lab) <sup>6</sup>	1
PSYC 2301	General Psychology	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	3
<b>Semester Total</b>		<b>10</b>



<b>Semester 4</b>		<b>Credits</b>
SRGT 1405	Introduction to Surgical Technology	4
SRGT 1409	Fundamentals of Perioperative Concepts and Techniques	4
SRGT 1460	Clinical - Surgical Technology/Technologist	4
<b>Semester Total</b>		<b>12</b>
<b>Semester 5</b>		<b>Credits</b>
SRGT 1244	Technological Sciences for the Surgical Technologist	2
SRGT 1441	Surgical Procedures I	4
SRGT 1461	Clinical - Surgical Technology/Technologist	4
<b>Semester Total</b>		<b>10</b>
<b>Semester 6</b>		<b>Credits</b>
SRGT 1442	Surgical Procedures II	4
SRGT 2462	Clinical - Surgical Technology/Technologist <sup>7</sup>	4
<b>Semester Total</b>		<b>8</b>
<b>Program Total</b>		<b>60</b>

#### Prerequisites

<sup>1,3</sup> BIOL 2102 (Prerequisite or Corequisite)

<sup>2</sup> BIOL 2301 (Prerequisite or Corequisite)

<sup>4</sup> BIOL 2302 (Prerequisite or Corequisite)

<sup>5</sup> BIOL 2120 (Prerequisite or Corequisite)

<sup>6</sup> BIOL 2320 (Prerequisite or Corequisite)

<sup>7</sup> SRGT 1461

# Visual Communication Technology

Graphic designers are now required to develop design work for many visual communication channels. To succeed in the industry, graphic designers must have a fluent visual vocabulary and be expert practitioners in multiple areas.

In the Visual Communication Technology program, students learn how to reach and influence an audience through advertising design, whether on a billboard, in a magazine ad, in a brochure or in an interactive publication. The program emphasizes project-based courses for both print and digital media to build up portfolios for interviews. Through challenging coursework and internships, students learn up-to-date job skills and knowledge from instructors and industry partners with real-world work experience.

Visual Communication Technology is available at the Waco campus.



## Visual Communication Technology Associate of Applied Science

### Semester 1

ARTC 1302	Digital Imaging I	3
ARTC 1305	Basic Graphic Design	3
ENGL 1301	Composition I	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	<u>3</u>
<b>Semester Total</b>		<b>12</b>

### Semester 2

ARTC 1313	Digital Publishing I <sup>1</sup>	3
ARTC 2305	Digital Imaging II <sup>2</sup>	3
ARTC 2317	Typographic Design <sup>3</sup>	3
GRPH 1359	Vector Graphics for Production	<u>3</u>
<b>Semester Total</b>		<b>12</b>

### Semester 3

ARTC 1310	Design Concepts	3
ARTC 1349	Art Direction I <sup>4</sup>	3
ARTC 2313	Digital Publishing II <sup>5</sup>	3
ACGM X3XX	Gen Ed Math/Natural Science Elective	<u>3</u>
<b>Semester Total</b>		<b>12</b>

### Semester 4

ARTC 1317	Design Communication I	3
ARTC 1359	Visual Design for New Media <sup>6</sup>	3
ARTC 2349	Art Direction II <sup>7</sup>	3
ARTC 2388	Internship - Commercial and Advertising Art	<u>3</u>
<b>Semester Total</b>		<b>12</b>

### Semester 5

ARTC 2333	Publication Design	3
ARTC 2335	Portfolio Development for Graphic Design	3
ACGM X3XX	Gen Ed Elective	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>		<b>12</b>

**Program Total**

**60**

### Prerequisites

<sup>1</sup> ARTC 1305 or ARTC 1302

<sup>2</sup> ARTC 1302

<sup>3</sup> ARTC 1302, ARTC 1305

<sup>4</sup> ARTC 1313, GRPH 1359

<sup>5</sup> ARTC 1313

<sup>6</sup> ARTC 2313

<sup>7</sup> ARTC 1349, ARTC 2313 (Prerequisite or Corequisite)

## Vocational Nursing

The nursing profession is a large part of the high-demand health care field. In the Vocational Nursing program, students participate in an innovative learning environment that helps develop their caregiving skills. Instruction consists of classroom, simulation learning labs, interactive online sessions, virtual clinicals and on-site health care clinicals. In the simulation learning lab, students practice the skills and techniques introduced in their classes, and they will be challenged to work through real-world scenarios. After time in the simulation learning labs, students move to clinical sites at hospitals, nursing homes and doctors' offices where they experience the reality and pace of the nursing profession.

Graduates of the Vocational Nursing program have many employment opportunities to consider, such as hospitals, nursing homes, home health care, doctors' offices and insurance companies.

Vocational Nursing is available at the Breckenridge, Harlingen and Sweetwater campuses.



### Vocational Nursing Certificate 2

#### Semester 1

		Credits
BIOL 2401	Anatomy & Physiology I (lecture + lab)	4
BIOL 2301	or Anatomy & Physiology I (lecture) <sup>1</sup>	
BIOL 2101	and Anatomy & Physiology I (lab) <sup>2</sup>	
BIOL 2402	Anatomy & Physiology II (lecture + lab)	4
BIOL 2302	or Anatomy & Physiology II (lecture) <sup>3</sup>	
BIOL 2102	and Anatomy & Physiology II (lab) <sup>4</sup>	
VNSG 1327	Essentials of Medication Administration	3
BIOL 1322	or Nutrition & Diet Therapy	
HPRS 1206	Essentials of Medical Terminology	2
HITT 1305	or Medical Terminology I	
	<b>Semester Total</b>	<b>13</b>

#### Semester 2

		Credits
VNSG 1261	Clinical - Licensed Practical/Vocational Nurse Training	2
VNSG 1304	Foundations of Nursing	3
VNSG 1331	Pharmacology	3
VNSG 1402	Applied Nursing Skills I	4
	<b>Semester Total</b>	<b>12</b>

#### Semester 3

		Credits
VNSG 1230	Maternal-Neonatal Nursing	2
VNSG 1329	Medical-Surgical Nursing I	3
VNSG 1462	Clinical - Licensed Practical/Vocational Nurse Training	4
VNSG 2413	Applied Nursing Skills II	4
	<b>Semester Total</b>	<b>13</b>

#### Semester 4

		Credits
VNSG 1119	Leadership and Professional Development	1
VNSG 1334	Pediatrics	3
VNSG 1432	Medical-Surgical Nursing II	4
VNSG 2463	Clinical - Licensed Practical/Vocational Nurse Training	4
	<b>Semester Total</b>	<b>12</b>

#### Program Total

50

#### Prerequisites

<sup>1</sup> BIOL 2101 (Prerequisite or Corequisite)

<sup>2</sup> BIOL 2301 (Prerequisite or Corequisite)

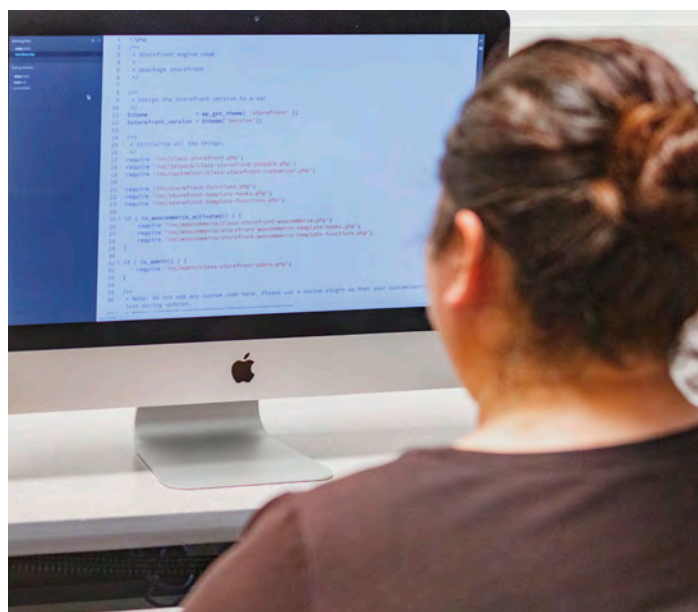
<sup>3</sup> BIOL 2102 (Prerequisite or Corequisite)

<sup>4</sup> BIOL 2302 (Prerequisite or Corequisite)

## Web Design & Development

Designers and developers work within a variety of settings to gather information and program content and design a site that's effective and easy to use. The Web Design & Development degree offers targeted coursework in website design, production, programming, applications and maintenance, as well as the practical hands-on experience needed to understand the technology. The program includes curriculum specific to graphic and web design, web development, computer science and computer networking. The curriculum also covers languages and software including HTML, JavaScript, PHP, CSS and MySQL. Students not only learn instruction in web page design and composition, but also develop a portfolio and participate in a real-world project that moves them to the top of the class when employers seek candidates.

Web Design & Development is available at the Waco campus.



### Web Design & Development Associate of Applied Science

Semester 1		Credits
IMED 1341	Interface Design	3
ITSE 1311	Beginning Web Programming	3
ITSE 1329	Programming Logic and Design	3
ACGM X3XX	Gen Ed Elective	<u>3</u>
Semester Total		12

Semester 2		Credits
IMED 1316	Web Design I <sup>1</sup>	3
IMED 2349	Internet Server Management	3
ITSE 1303	Introduction to MySQL <sup>2</sup>	3
ACGM X3XX	Gen Ed Mathematics Elective	<u>3</u>
Semester Total		12

Semester 3		Credits
ITSE 1306	PHP Programming <sup>3</sup>	3
ITSE 1359	Introduction to Scripting Languages	3
WEB X3XX	Approved Technical Web Course	3
ACGM X3XX	Gen Ed Elective	<u>3</u>
Semester Total		12

Semester 4		Credits
IMED 2313	Project Analysis and Design	3
IMED 2315	Web Design II <sup>4</sup>	3
ITSE 2313	Web Authoring <sup>5</sup>	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	<u>3</u>
Semester Total		12

Semester 5		Credits
IMED 2311	Portfolio Development	3
IMED 2351	Digital Media Programming <sup>6</sup>	3
IMED 2388	Internship - Digital Communication and Media/Multimedia	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	<u>3</u>
Semester Total		12

Program Total 60

#### Prerequisites

<sup>1</sup> ITSE 1311 or ARTC 1302 (Prerequisite or Corequisite)

<sup>2</sup> ITSE 1311

<sup>3</sup> ITSE 1329

<sup>4</sup> IMED 1316

<sup>5</sup> ITSE 1306

<sup>6</sup> ITSE 1311

## Welding Technology\*

The welding programs at TSTC emphasize the development of real, hands-on welding, layout and fitting skills. With extensive exposure to welding practices and principles, students can better understand not only how welding processes work, but also why certain welding processes are used. Welding Technology offers Welding students instruction on plasma torches for oxy-acetylene and air carbon arc cutting. Students also gain extensive skills and knowledge through simulated industrial welder qualification tests with the following processes: SMAW, GMAW, FCAW (gas and self-shielded), GTAW and SAW. With general welding or specialized programs such as Welding Technology AAS, Structural Cert1 or Structural and Pipe welding available, there are many different options for those wanting to enter the welding industry. For quicker entry into the industry, certificates are also available.

Welding Technology is available at the Abilene, Breckenridge, Brownwood, Fort Bend County, Harlingen, Marshall, North Texas, Sweetwater, Waco and Williamson County campuses.

\*This program is eligible for a Money-Back Guarantee. Visit page 89 for more details.

### Welding Technology Associate of Applied Science -

Abilene, Harlingen, Fort Bend County, Waco,  
Williamson County only

Semester 1		Credits
WLDG 1313	Introduction to Blueprint Reading for Welders	3
WLDG 1407	Introduction to Welding Using Multiple Processes	4
WLDG 1428	Introduction to Shielded Metal Arc Welding (SMAW)	4
MATH 1332	Contemporary Mathematics (Quantitative Reasoning)	3
Semester Total		14
Semester 2		Credits
WLDG 1417	Introduction to Layout and Fabrication <sup>1</sup>	4
WLDG 1434	Introduction to Gas Tungsten Arc (GTAW) Welding <sup>2</sup>	4
WLDG 1457	Intermediate Shielded Metal Arc Welding (SMAW) <sup>3</sup>	4
ENGL 1301	Composition I	3
Semester Total		15
Semester 3		Credits
WLDG 2413	Intermediate Welding Using Multiple Processes <sup>4</sup>	4
WLDG 2435	Advanced Layout and Fabrication <sup>5</sup>	4
WLDG 2443	Advanced Shielded Metal Arc Welding (SMAW) <sup>6</sup>	4
ACGM X3XX	Gen Ed Elective	3
Semester Total		15
Semester 4		Credits
WLDG 1327	Welding Codes and Standards <sup>7</sup>	3
WLDG 1337	Introduction to Welding Metallurgy <sup>8</sup>	3
WLDG 2432	Welding Automation <sup>9</sup>	4
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	3
Semester Total		16
Program Total		60



#### Prerequisites

- <sup>1</sup> WLDG 1313 (Prerequisite or Prerequisite)
- <sup>2,4</sup> WLDG 1407
- <sup>3</sup> WLDG 1428
- <sup>5</sup> WLDG 1417
- <sup>6</sup> WLDG 1457
- <sup>7,8,9</sup> WLDG 2413

### Structural Welding Certificate 1

Semester 1		Credits
WLDG 1313	Introduction to Blueprint Reading for Welders	3
WLDG 1407	Introduction to Welding Using Multiple Processes	4
WLDG 1428	Introduction to Shielded Metal Arc Welding (SMAW)	4
TECM 1303	Technical Calculations	3
Semester Total		14
Semester 2		Credits
WLDG 1417	Introduction to Layout and Fabrication <sup>1</sup>	4
WLDG 1434	Introduction to Gas Tungsten Arc (GTAW) Welding <sup>2</sup>	4
WLDG 1457	Intermediate Shielded Metal Arc Welding (SMAW) <sup>3</sup>	4
Semester Total		12
Semester 3		Credits
WLDG 2413	Intermediate Welding Using Multiple Processes <sup>4</sup>	4
WLDG 2435	Advanced Layout and Fabrication <sup>5</sup>	4
WLDG 2443	Advanced Shielded Metal Arc Welding (SMAW) <sup>6</sup>	4
Semester Total		12
Program Total		38
Prerequisites		
<sup>1</sup> WLDG 1313 (Prerequisite or Corequisite)		
<sup>2,4</sup> WLDG 1407		
<sup>3</sup> WLDG 1428		
<sup>5</sup> WLDG 1417		
<sup>6</sup> WLDG 1457		

## Structural & Pipe Welding

### Certificate 2 - Abilene, Harlingen, Fort Bend County, Waco, Williamson County only

<b>Semester 1</b>		<b>Credits</b>
WLDG 1313	Introduction to Blueprint Reading for Welders	3
WLDG 1407	Introduction to Welding Using Multiple Processes	4
WLDG 1428	Introduction to Shielded Metal Arc Welding (SMAW)	4
TECM 1349	Technical Math Applications	<u>3</u>
<b>Semester Total</b>		<b>14</b>
<b>Semester 2</b>		<b>Credits</b>
WLDG 1417	Introduction to Layout and Fabrication <sup>1</sup>	4
WLDG 1434	Introduction to Gas Tungsten Arc (GTAW) Welding <sup>2</sup>	4
WLDG 1457	Intermediate Shielded Metal Arc Welding (SMAW) <sup>3</sup>	<u>4</u>
<b>Semester Total</b>		<b>12</b>
<b>Semester 3</b>		<b>Credits</b>
WLDG 2413	Intermediate Welding Using Multiple Processes <sup>4</sup>	4
WLDG 2435	Advanced Layout and Fabrication <sup>5</sup>	4
WLDG 2443	Advanced Shielded Metal Arc Welding (SMAW) <sup>6</sup>	<u>4</u>
<b>Semester Total</b>		<b>12</b>
<b>Semester 4</b>		<b>Credits</b>
WLDG 1435	Introduction to Pipe Welding <sup>7</sup>	4
WLDG 2406	Intermediate Pipe Welding <sup>8</sup>	4
WLDG 2453	Advanced Pipe Welding <sup>9</sup>	<u>4</u>
<b>Semester Total</b>		<b>12</b>
<b>Program Total</b>		<b>50</b>

#### Prerequisites

<sup>1</sup> WLDG 1313 (Prerequisite or Corequisite)

<sup>2</sup> WLDG 1407

<sup>3</sup> WLDG 1428

<sup>4</sup> WLDG 1407

<sup>5</sup> WLDG 1417

<sup>6</sup> WLDG 1457

<sup>7,8,9</sup> WLDG 2435



## Wind Energy Technology

As a wind energy technician, your options are sky-high. You can work at turbine construction and manufacturing sites, in the distribution and generation industries, at utility companies, or on wind farms anywhere in the country. At TSTC you'll learn to conduct efficiency studies and manage personnel, materials and machines in factories, offices and production sites. You'll also prepare machinery and equipment layouts, plan workflow for turbine construction and maintenance, conduct statistical studies of product quality and time usage, and analyze production costs. Upon successful completion of our program, you'll be qualified to operate and maintain the systems that make a wind turbine function.

Wind Energy Technology is offered at the Harlingen and Sweetwater campuses.

### Wind Energy Technology Associate of Applied Science - Harlingen, Sweetwater only

<b>Semester 1</b>		<b>Credits</b>
CETT 1303	DC Circuits	3
WIND 1300	Introduction to Wind Energy	3
WIND 1302	Wind Safety	3
MATH 1314	College Algebra	<u>3</u>
<b>Semester Total</b>		<b>12</b>
<b>Semester 2</b>		<b>Credits</b>
CETT 1305	AC Circuits <sup>1</sup>	3
CETT 1325	Digital Fundamentals <sup>2</sup>	3
ELMT 1305	Basic Fluid Power	3
WIND 2310	Wind Turbine Materials and Electro-Mechanical Equipment <sup>3</sup>	3
ACGM X3XX	Gen Ed Social/Behavioral Science Elective	<u>3</u>
<b>Semester Total</b>		<b>15</b>
<b>Semester 3</b>		<b>Credits</b>
ELMT 1301	Programmable Logic Controllers <sup>4</sup>	3
ENER 2325	SCADA and Networking <sup>5</sup>	3
INMT 1317	Industrial Automation	3
ACGM X3XX	Gen Ed Elective	3
ACGM X3XX	Gen Ed Humanities/Fine Arts Elective	<u>3</u>
<b>Semester Total</b>		<b>15</b>
<b>Semester 4</b>		<b>Credits</b>
ELMT 2341	Electromechanical Systems	3
ELMT 2335	or Certified Electronics Technician Training <sup>6</sup>	
WIND 2455	Wind Turbine Troubleshooting and Repair <sup>7</sup>	4
WIND 2459	Wind Power Delivery System <sup>8</sup>	4
ACGM X3XX	Gen Ed Elective	<u>3</u>
<b>Semester Total</b>		<b>14</b>
<b>Semester 5</b>		<b>Credits</b>
ELMT 2480	Cooperative Education - Electromechanical Technology/Electromechanical Engineering	<u>4</u>
Technology ELMT 1491	or Special Topics in Electromechanical Technology/Technician	
<b>Semester Total</b>		<b>4</b>
<b>Program Total</b>		<b>60</b>

#### Prerequisites

- <sup>1</sup> CETT 1303 or IEIR 1302 (Prerequisite or Corequisite)  
<sup>2</sup> CETT 1303, IEIR 1302, IEIR 1304, IEIR 1371 or CETT 1305 (Prerequisite or Corequisite)  
<sup>3</sup> WIND 1300, WIND 1302, CETT 1303  
<sup>4,5,6</sup> CETT 1325  
<sup>7</sup> CETT 1305, INMT 1317  
<sup>8</sup> CETT 1305

### Wind Energy Technician Certificate 1 - Harlingen, Sweetwater only

<b>Semester 1</b>		<b>Credits</b>
CETT 1303	DC Circuits	3
TECM 1303	Technical Calculations	3
WIND 1300	Introduction to Wind Energy	3
WIND 1302	Wind Safety	<u>3</u>
<b>Semester Total</b>		<b>12</b>
<b>Semester 2</b>		<b>Credits</b>
CETT 1305	AC Circuits <sup>1</sup>	3
CETT 1325	Digital Fundamentals <sup>2</sup>	3
ELMT 1305	Basic Fluid Power	3
WIND 2310	Wind Turbine Materials and Electro-Mechanical Equipment <sup>3</sup>	<u>3</u>
<b>Semester Total</b>		<b>12</b>
<b>Semester 3</b>		<b>Credits</b>
ELMT 1301	Programmable Logic Controllers <sup>4</sup>	3
ELMT 2335	Certified Electronics Technician Training <sup>5</sup>	3
ENER 2325	or SCADA and Networking <sup>6</sup>	
INMT 1317	Industrial Automation	3
WIND 2459	Wind Power Delivery System <sup>7</sup>	<u>4</u>
<b>Semester Total</b>		<b>13</b>
<b>Program Total</b>		<b>37</b>

#### Prerequisites

- <sup>1</sup> CETT 1303 OR IEIR 1302 (Prerequisite or Corequisite)  
<sup>2</sup> CETT 1303, IEIR 1302, IEIR 1304, IEIR 1371 or CETT 1305 (Prerequisite or Corequisite)  
<sup>3</sup> WIND 1300, WIND 1302, CETT 1303  
<sup>4,5,6</sup> CETT 1325  
<sup>7</sup> CETT 1305

# Course Descriptions

# Academic Courses

## ACCT

**ACCT 2301 Principles of Financial Accounting (3-0-3)** This course is an introduction to the fundamental concepts of financial accounting as prescribed by U.S. generally accepted accounting principles (GAAP) as applied to transactions and events that affect business organizations. Students will examine the procedures and systems to accumulate, analyze, measure and record financial transactions. Students will use recorded financial information to prepare a balance sheet, income statement, statement of cash flows, and statement of shareholders' equity to communicate the business entity's results of operations and financial position to users of financial information who are external to the company. Students will study the nature of assets, liabilities and owners' equity while learning to use reported financial information for purposes of making decisions about the company. Students will be exposed to International Financial Reporting Standards (IFRS).

**ACCT 2302 Principles of Managerial Accounting (3-0-3)** This course is an introduction to the fundamental concepts of managerial accounting appropriate for all organizations. Students will study information from the entity's accounting system relevant to decisions made by internal managers, as distinguished from information relevant to users who are external to the company. The emphasis is on the identification and assignment of product costs, operational budgeting and planning, cost control, and management decision-making. Topics include product costing methodologies, cost behavior, operational and capital budgeting, and performance evaluation. Prerequisite: ACCT 2301

**ACCT 2401 Principles of Financial Accounting (3-3-4)** This course is an introduction to the fundamental concepts of financial accounting as prescribed by U.S. generally accepted accounting principles (GAAP) as applied to transactions and events that affect business organizations. Students will examine the procedures and systems to accumulate, analyze, measure and record financial transactions. Students will use recorded financial information to prepare a balance sheet, income statement, statement of cash flows, and statement of shareholders' equity to communicate the business entity's results of operations and financial position to users of financial information who are external to the company. Students will study the nature of assets, liabilities and owners' equity while learning to use reported financial information for purposes of making decisions about the company. Students will be exposed to International Financial Reporting Standards (IFRS).

**ACCT 2402 Principles of Managerial Accounting (3-3-4)** This course is an introduction to the fundamental concepts of managerial accounting appropriate for all organizations. Students will study information from the entity's accounting system relevant to decisions made by internal managers, as distinguished from information relevant to users who are external to the company. The emphasis is on the identification and assignment of product costs, operational budgeting and planning, cost control, and management decision-making. Topics include product costing methodologies, cost behavior, operational and capital budgeting, and performance evaluation. Prerequisite: ACCT 2401

## ANTH

**ANTH 2346 General Anthropology (3-0-3)** The study of human beings, their antecedents, related primates, and their cultural behavior and institutions. Introduces the major subfields: physical and cultural anthropology, archeology, linguistics, their applications, and ethics in the discipline.

## ARTS

**ARTS 1301 Art Appreciation (3-0-3)** A general introduction to the visual arts designed to create an appreciation of the vocabulary, media, techniques and purposes of the creative process. Students will critically interpret and evaluate works of art within formal, cultural and historical contexts.

**ARTS 1304 Art History II (3-0-3)** A chronological analysis of the historical and cultural contexts of the visual arts from the 14th century to the present day.

**ARTS 2326 Sculpture I (3-0-3)** Exploration of ideas using sculpture media.

## BCIS

**BCIS 1305 Business Computer Applications (3-0-3)** Students will study computer terminology, hardware and software related to the business environment. The focus of this course is on business productivity software applications and professional behavior in computing, including word processing (as needed), spreadsheets, databases, presentation graphics and business-oriented utilization of the Internet.

## BIOL

**BIOL 1106 Biology for Science Majors Laboratory I (lab) (0-3-1)** This laboratory-based course accompanies Biology 1306, Biology for Science Majors I. Laboratory activities will reinforce the fundamental principles of living organisms, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Study and examination of the concepts of cytology, reproduction, genetics and scientific reasoning are included.

**BIOL 1107 Biology for Science Majors II Lab (0-3-1)** This laboratory-based course accompanies Biology 1307, Biology for Science Majors II. Laboratory activities will reinforce study of the diversity and classification of life, including animals, plants, protists, fungi and prokaryotes. Special emphasis will be given to anatomy, physiology, ecology, and evolution of plants and animals. Prerequisite: BIOL 1307

**BIOL 1108 Biology Non-Science Majors Laboratory I (0-3-1)** This laboratory-based course accompanies BIOL 1308, Biology for Non-Science Majors I. Laboratory activities will reinforce a survey of biological principles with an emphasis on humans, including chemistry of life, cells, structure, function and reproduction. Prerequisite: BIOL 1308

**BIOL 1109 Biology for Non-Science Majors II Lab (0-3-1)** This laboratory-based course accompanies BIOL 1309, Biology for Non-Science Majors II. Laboratory activities will reinforce a survey of biological principles with an emphasis on humans, including evolution, ecology, plant and animal diversity, and physiology. Prerequisite: BIOL 1309

**BIOL 1306 Biology for Science Majors I (lecture) (3-0-3)** Fundamental principles of living organisms will be studied, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Concepts of cytology, reproduction, genetics, and scientific reasoning are included.

**BIOL 1307 Biology for Science Majors II (3-0-3)** The diversity and classification of life will be studied, including animals, plants, protists, fungi and prokaryotes. Special emphasis will be given to anatomy, physiology, ecology, and evolution of plants and animals. Prerequisite: BIOL 1107

**BIOL 1308 Biology for Non-Science Majors I (3-0-3)** Provides a survey of biological principles with an emphasis on humans, including chemistry of life, cells, structure, function and reproduction. Prerequisite: BIOL 1108

**BIOL 1309 Biology for Non-Science Majors II (3-0-3)** This course will provide a survey of biological principles with an emphasis on humans, including evolution, ecology, plant and animal diversity, and physiology. Prerequisite: BIOL 1109

**BIOL 1322 Nutrition & Diet Therapy (3-0-3)** This course introduces general nutritional concepts in health and disease and includes practical applications of that knowledge. Special emphasis is given to nutrients and nutritional processes including functions, food sources, digestion, absorption and metabolism. Food safety, availability and nutritional information, including food labels, advertising and nationally established guidelines, are addressed.

**BIOL 1406 Biology for Science Majors I (3-3-4)** This lecture and lab course should combine all of the elements of BIOL 1306 Biology for Science Majors I (lecture) and BIOL 1106 Biology for Science Majors I (lab), including the learning outcomes listed for both courses.

**BIOL 1407 Biology for Science Majors II (3-3-4)** This lecture and lab course should combine all of the elements of BIOL 1307 Biology for Science Majors II (lecture) and BIOL 1107 Biology for Science Majors II (lab), including the learning outcomes listed for both courses.

**BIOL 1408 Biology for Non-Science Majors I (3-3-4)** This lecture and lab course should combine all of the elements of BIOL 1308 Biology for Non-Science Majors I (lecture) and BIOL 1108 Biology for Non-Science Majors I (lab), including the learning outcomes listed for both courses.

**BIOL 1409 Biology for Non-Science Majors II (3-3-4)** This lecture and lab course should combine all of the elements of BIOL 1309 Biology for Non-Science Majors II (lecture) and BIOL 1109 Biology for Non-Science Majors II (lab), including the learning outcomes listed for both courses.

**BIOL 1411 General Botany (3-3-4)** This lecture and lab course should combine all of the elements of BIOL 1311 (lecture) and BIOL 1111 (lab), including the learning outcomes listed for both courses.

**BIOL 2101 Anatomy & Physiology I (lab) (0-3-1)** The lab provides a hands-on learning experience for exploration of human system components and basic physiology. Systems to be studied include integumentary, skeletal, muscular, nervous, and special senses. Prerequisite: BIOL 2301

**BIOL 2102 Anatomy & Physiology II (lab) (0-3-1)** The lab provides a hands-on learning experience for exploration of human system components and basic physiology. Systems to be studied include endocrine, cardiovascular, immune, lymphatic, respiratory, digestive (including nutrition), urinary (including fluid and electrolyte balance), and reproductive (including human development and genetics). Prerequisite: BIOL 2302

**BIOL 2120 Microbiology for Non-Science Majors Laboratory (lab) (0-3-1)** This course covers basics of culture and identification of bacteria and microbial ecology. This course is primarily directed at pre-nursing and other pre-allied health majors and covers basics of microbiology. Emphasis is on medical microbiology, infectious diseases and public health. Prerequisite: BIOL 2320

**BIOL 2121 Microbiology for Science Majors Lab (0-3-1)** This laboratory-based course accompanies Biology 2321, Microbiology for Science Majors. Laboratory activities will reinforce principles of microbiology, including metabolism, structure, function, genetics, and phylogeny of microbes. The course will also examine the interactions of microbes with each other, hosts and the environment. Prerequisite: BIOL 2321

**BIOL 2301 Anatomy & Physiology I (lecture) (3-0-3)** Anatomy and Physiology I is the first part of a two course sequence. It is a study of the structure and function of the human body including cells, tissues and organs of the following systems: integumentary, skeletal, muscular, nervous and special senses. Emphasis is on interrelationships among systems and regulation of physiological functions involved in maintaining homeostasis. Prerequisite: BIOL 2101

**BIOL 2302 Anatomy & Physiology II (lecture) (3-0-3)** Anatomy and Physiology II is the second part of a two-course sequence. It is a study of the structure and function of the human body including the following systems: endocrine, cardiovascular, immune, lymphatic, respiratory, digestive (including nutrition), urinary (including fluid and electrolyte balance) and reproductive (including human development and genetics). Emphasis is on interrelationships among systems and regulation of physiological functions involved in maintaining homeostasis. Prerequisite: BIOL 2102

**BIOL 2320 Microbiology for Non-Science Majors (lecture) (3-0-3)** This course covers basic microbiology and immunology and is primarily directed at pre-nursing, pre-allied health and non-science majors. It provides an introduction to historical concepts of the nature of microorganisms, microbial diversity, the importance of microorganisms and acellular agents in the biosphere, and their roles in human and animal diseases. Major topics include bacterial structure as well as growth, physiology, genetics, and biochemistry of microorganisms. Emphasis is on medical microbiology, infectious diseases and public health. Prerequisite: BIOL 2120

**BIOL 2321 Microbiology for Science Majors (3-0-3)** Principles of microbiology, including metabolism, structure, function, genetics, and phylogeny of microbes. The course will also examine the interactions of microbes with each other, hosts and the environment. Prerequisite: 12 credits (CHEM 1311 CHEM 1111) or CHEM 1411 or (BIOL 1306 BIOL 1106) or BIOL 1406 or (BIOL 1307 BIOL 1107) or BIOL 1407

**BIOL 2401 Anatomy & Physiology I (lecture + lab) (3-3-4)** This lecture and lab course should combine all of the elements of BIOL 2301 Anatomy and Physiology I (lecture) and BIOL 2101 Anatomy and Physiology I (lab), including the learning outcomes listed for both courses.

**BIOL 2402 Anatomy & Physiology II (lecture + lab) (3-3-4)** This lecture and lab course should combine all of the elements of BIOL 2302 Anatomy and Physiology II (lecture) and BIOL 2102 Anatomy and Physiology II (lab), including the learning outcomes listed for both courses.

**BIOL 2404 Anatomy & Physiology (lecture + lab) (3-3-4)** Study of the structure and function of human anatomy, including the neuroendocrine, integumentary, musculoskeletal, digestive, urinary, reproductive, respiratory and circulatory systems. Content may be either integrated or specialized.

**BIOL 2406 Environmental Biology (3-3-4)** Human interaction with and effect upon plant and animal communities. Conservation, pollution, energy and other contemporary ecological problems.

**BIOL 2416 Genetics (3-3-4)** Study of the principles of molecular and classical genetics and the function and transmission of hereditary material. May include population genetics and genetic engineering.

**BIOL 2420 Microbiology for Non-Science Majors (lecture + lab) (3-3-4)** This lecture and lab course should combine all of the elements of BIOL 2320 Microbiology for Non-Science Majors (lecture) and BIOL 2120 Microbiology for Non-Science Majors Laboratory (lab), including the learning outcomes listed for both courses.

## BUSI

**BUSI 1301 Business Principles (3-0-3)** This course provides a survey of economic systems, forms of business ownership and considerations for running a business. Students will learn various aspects of business, management and leadership functions; organizational considerations; and decision-making processes. Financial topics are introduced, including accounting, money and banking, and securities markets. Also included are discussions of business challenges in the legal and regulatory environment, business ethics, social responsibility and international business. Emphasized is the dynamic role of business in everyday life.

**BUSI 1307 Personal Money Management (3-0-3)** Personal and family accounts, budgets and budgetary control, bank accounts, charge accounts, borrowing, investing, insurance, standards of living, renting or home ownership, and wills and trust plans.

**BUSI 2301 Business Law (3-0-3)** The course provides the student with foundational information about the U.S. legal system and dispute resolution, and their impact on business. The major content

areas will include general principles of law, the relationship of business and the U.S. Constitution, state and federal legal systems, the relationship between law and ethics, contracts, sales, torts, agency law, intellectual property and business law in the global context.

## CHEM

**CHEM 1105 Introductory Chemistry Laboratory I (lab) (0-3-1)** Survey course introducing chemistry. Topics may include inorganic, organic, biochemistry, food/physiological chemistry and environmental/consumer chemistry. Designed for non-science and allied health students.

**CHEM 1107 Introductory Chemistry Laboratory II (0-3-1)** Survey course introducing chemistry. Topics may include inorganic, organic, biochemistry, food/physiological chemistry and environmental/consumer chemistry. Designed for allied health students and for students who are not science majors.

**CHEM 1111 General Chemistry I (lab) (0-3-1)** Basic laboratory experiments supporting theoretical principles presented in CHEM 1311; introduction of the scientific method, experimental design, data collection and analysis, and preparation of laboratory reports. Prerequisite: CHEM 1311

**CHEM 1112 General Chemistry II (lab) (0-3-1)** Basic laboratory experiments supporting theoretical principles presented in CHEM 1312; introduction of the scientific method, experimental design, chemical instrumentation, data collection and analysis, and preparation of laboratory reports.

**CHEM 1305 Introductory Chemistry I (lecture) (3-0-3)** Survey course introducing chemistry. Topics may include inorganic, organic, biochemistry, food/physiological chemistry and environmental/consumer chemistry. Designed for non-science and allied health students. Prerequisite: CHEM 1105

**CHEM 1307 Introductory Chemistry II (3-0-3)** A Continuation of Chem 1305 for Allied Health and Related Science Majors. Topics Include Ionization, Chemical Equilibrium, Oxidation-Reduction, Nuclear Chemistry, and an Introduction Into Organic and Biochemistry.

**CHEM 1311 General Chemistry I (lecture) (3-0-3)** Fundamental principles of chemistry for majors in the sciences, health sciences, and engineering; topics include measurements, fundamental properties of matter, states of matter, chemical reactions, chemical stoichiometry, periodicity of elemental properties, atomic structure, chemical bonding, molecular structure, solutions, properties of gases, and an introduction to thermodynamics and descriptive chemistry.

**CHEM 1312 General Chemistry II (lecture) (3-0-3)** Chemical equilibrium; phase diagrams and spectrometry; acid-base concepts; thermodynamics; kinetics; electrochemistry; nuclear chemistry; an introduction to organic chemistry and descriptive inorganic chemistry.

**CHEM 1405 Introductory Chemistry I (3-3-4)** Survey course introducing chemistry. Topics may include inorganic, organic, biochemistry, food/physiological chemistry and environmental/consumer chemistry. Designed for non-science and allied health students.

**CHEM 1406 Introductory Chemistry I (3-3-4)** Survey course introducing chemistry. Topics may include inorganic, organic, biochemistry, food/physiological chemistry and environmental/consumer chemistry. Designed for non-science and allied health students.

**CHEM 1411 General Chemistry I (3-3-4)** This lecture and lab course should combine all of the elements of 1314 General Chemistry I Lecture and 1111 General Chemistry I Lab, including the learning outcomes listed for both courses.

**CHEM 1412 General Chemistry II (3-3-4)** This lecture and lab course should combine all of the elements of 1312 General Chemistry II Lecture and 1112 General Chemistry II Lab, including the learning outcomes listed for both courses. Prerequisite: CHEM 1411 OR (CHEM 1311 AND CHEM 1111)

**CHEM 1414 General Chemistry II (3-3-4)** General principles, problems, fundamental laws and theories. Course content provides a foundation for work in advanced chemistry and related sciences.

**CHEM 2123 Organic Chemistry I Lab (0-3-1)** This laboratory-based course accompanies CHEM 2323, Organic Chemistry I. Laboratory activities will reinforce fundamental principles of organic chemistry, including the structure, bonding, properties, and reactivity of organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules. Methods for the purification and identification of organic compounds will be examined. Prerequisite: CHEM 2323

**CHEM 2125 Organic Chemistry II Lab (0-3-1)** This laboratory-based course accompanies CHEM 2325, Organic Chemistry II. Laboratory activities reinforce advanced principles of organic chemistry, including the structure, properties, and reactivity of aliphatic and aromatic organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules.

**CHEM 2323 Organic Chemistry I (3-0-3)** Fundamental principles of organic chemistry will be studied, including the structure, bonding, properties, and reactivity of organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules. THIS COURSE IS INTENDED FOR STUDENTS IN SCIENCE OR PREPROFESSIONAL PROGRAMS.

**CHEM 2325 Organic Chemistry II (3-0-3)** Advanced principles of organic chemistry will be studied, including the structure, properties, and reactivity of aliphatic and aromatic organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules. THIS COURSE IS INTENDED FOR STUDENTS IN SCIENCE OR PREPROFESSIONAL PROGRAMS.

## COMM

**COMM 2327 Introduction to Advertising (3-0-3)** Fundamentals of advertising including theory and strategy, copywriting, design, and selection of media.

## COSC

**COSC 1301 Introduction to Computing (3-0-3)** Overview of computer systems, hardware, operating systems and microcomputer application software, including the Internet, word processing, spreadsheets, presentation graphics, and databases. Current issues such as the effect of computers on society, and the history and use of computers in business, educational and other modern settings are also studied. This course is not intended to count toward a student's major field of study in business or computer science.

**COSC 1336 Programming Fundamentals I (3-1-3)** Introduces the fundamental concepts of structured programming. Topics include software development methodology, data types, control structures, functions, arrays, and the mechanics of running, testing and debugging. This course assumes computer literacy.

**COSC 1337 Programming Fundamentals II (3-1-3)** This course focuses on the object-oriented programming paradigm, emphasizing the definition and use of classes along with fundamentals of object-oriented design. The course includes basic analysis of algorithms, searching and sorting techniques, and an introduction to software engineering processes. Students will apply techniques for testing and debugging software. (This course is included in the Field of Study Curriculum for Computer Science.) Prerequisite: COSC 1336 OR COSC 1436

**COSC 1436 Programming Fundamentals I (3-2-4)** This course introduces the fundamental concepts of structured programming and provides a comprehensive introduction to programming for computer science and technology majors. Topics include software development methodology, data types, control structures, functions, arrays, and the mechanics of running, testing and debugging. This course assumes computer literacy. (This course is included in the Field of Study Curriculum for Computer Science.)

**COSC 1437 Programming Fundamentals II (3-2-4)** This course focuses on the object-oriented programming paradigm, emphasizing the definition and use of classes along with fundamentals of object-oriented design. The course includes basic analysis of algorithms, searching and sorting techniques, and an introduction to software engineering processes. Students will apply techniques for testing

and debugging software. (This course is included in the Field of Study Curriculum for Computer Science.)

**COSC 2325 Computer Organization (3-1-3)** The organization of computer systems is introduced using assembly language. Topics include basic concepts of computer architecture and organization, memory hierarchy, data types, computer arithmetic, control structures, interrupt handling, instruction sets, performance metrics, and the mechanics of testing and debugging computer systems. Embedded systems and device interfacing are introduced. Prerequisite: COSC 1336 OR COSC 1436

**COSC 2336 Programming Fundamentals III (3-1-3)** Further applications of programming techniques, introducing the fundamental concepts of data structures and algorithms. Topics include recursion, fundamental data structures (including stacks, queues, linked lists, hash tables, trees and graphs) and algorithmic analysis. Prerequisite: COSC 1337/1437. (This course is included in the Field of Study Curriculum for Computer Science.) Prerequisite: COSC 1337 OR COSC 1437

## ECON

**ECON 1301 Introduction to Economics (3-0-3)** A survey of microeconomic and macroeconomic principles for non-business majors. Microeconomic topics will include supply and demand, consumer behavior, price and output decisions by firms under various market structures, factor markets, market failures, international trade, and exchange rates. Macroeconomic topics will include national income, unemployment, inflation, business cycles, aggregate supply and demand, monetary and fiscal policy, and economic growth.

**ECON 2301 Principles of Macroeconomics (3-0-3)** An analysis of the economy as a whole, including measurement and determination of aggregate demand and aggregate supply, national income, inflation and unemployment. Other topics include international trade, economic growth, business cycles, and fiscal policy and monetary policy.

**ECON 2302 Principles of Microeconomics (3-0-3)** Analysis of the behavior of individual economic agents, including consumer behavior and demand, producer behavior and supply, price and output decisions by firms under various market structures, factor markets, market failures and international trade.

## ENGL

**ENGL 1301 Composition I (3-0-3)** Intensive study of and practice in writing processes, from invention and researching to drafting, revising and editing, both individually and collaboratively. Emphasis on effective rhetorical choices, including audience, purpose, arrangement and style. Focus on writing the academic essay as a vehicle for learning, communicating and critical analysis.

**ENGL 1302 Composition II (3-0-3)** Intensive study of and practice in the strategies and techniques for developing research-based expository and persuasive texts. Emphasis on effective and ethical rhetorical inquiry, including primary and secondary research methods; critical reading of verbal, visual and multimedia texts;

systematic evaluation, synthesis, and documentation of information sources; and critical thinking about evidence and conclusions. Prerequisite: ENGL 1301

**ENGL 2307 Creative Writing I (3-0-3)** Practical experience in the techniques of imaginative writing. May include fiction, nonfiction, poetry, or drama.

**ENGL 2311 Technical & Business Writing (3-0-3)** Intensive study of and practice in professional settings. Focus on the types of documents necessary to make decisions and take action on the job, such as proposals, reports, instructions, policies and procedures, e-mail messages, letters, and descriptions of products and services. Practice individual and collaborative processes involved in the creation of ethical and efficient documents.

**ENGL 2314 Technical & Business Writing I (3-0-3)** Intensive study of and practice in professional settings. Focus on the types of documents necessary to make decisions and take action on the job, such as proposals, reports, instructions, policies and procedures, e-mail messages, letters, and descriptions of products and services. Practice individual and collaborative processes involved in the creation of ethical and efficient documents.

**ENGL 2321 British Literature (3-0-3)** A survey of the development of British literature from the Anglo-Saxon period to the present. Students will study works of prose, poetry, drama and fiction in relation to their historical, linguistic and cultural contexts. Texts will be selected from a diverse group of authors and traditions.

**ENGL 2322 British Literature I (3-0-3)** A survey of the development of British literature from the Anglo-Saxon period to the Eighteenth Century. Students will study works of prose, poetry, drama and fiction in relation to their historical, linguistic and cultural contexts. Texts will be selected from a diverse group of authors and traditions. Prerequisite: ENGL 1301

**ENGL 2323 British Literature II (3-0-3)** A survey of the development of British literature from the Romantic period to the present. Students will study works of prose, poetry, drama and fiction in relation to their historical and cultural contexts. Texts will be selected from a diverse group of authors and traditions. Prerequisite: ENGL 1301

**ENGL 2326 American Literature (3-0-3)** A survey of American literature from the period of exploration and settlement to the present. Students will study works of prose, poetry, drama and fiction in relation to their historical and cultural contexts. Texts will be selected from among a diverse group of authors for what they reflect and reveal about the evolving American experience and character. Prerequisite: ENGL 1301

**ENGL 2331 World Literature (3-0-3)** A survey of world literature from the ancient world to the present. Students will study works of prose, poetry, drama and fiction in relation to their historical and cultural contexts. Texts will be selected from a diverse group of authors and traditions. Prerequisite: ENGL 1301

**ENGL 2341 Forms of Literature (3-0-3)** The study of one or more literary genres including, but not limited to, poetry, fiction, drama and film. Prerequisite: ENGL 1301

## ENGR

**ENGR 1201 Introduction to Engineering (2-0-2)** An introduction to the engineering profession with emphasis on technical communication and team-based engineering design. Prerequisite: MATH 1314

**ENGR 1204 Engineering Graphics I (1-3-2)** Introduction to computer-aided drafting using CAD software and sketching to generate two- and three-dimensional drawings based on the conventions of engineering graphical communication; topics include spatial relationships, multi-view projections and sectioning, dimensioning, graphical presentation of data, and fundamentals of computer graphics. Prerequisite: MATH 1314

**ENGR 2105 Electrical Circuits I Laboratory (0-3-1)** Laboratory experiments supporting theoretical principles presented in ENGR 2305 involving DC and AC circuit theory, network theorems, time, and frequency domain circuit analysis. Introduction to principles and operation of basic laboratory equipment; laboratory report preparation.

**ENGR 2301 Engineering Mechanics - Statics (3 SCH version) (3-0-3)** Basic theory of engineering mechanics, using calculus, involving the description of forces, moments, and couples acting on stationary engineering structures; equilibrium in two and three dimensions; free-body diagrams; friction; centroids; centers of gravity; and moments of inertia. Prerequisite: the first calculus-based physics course. Corequisite: a second course in calculus. Prerequisite: PHYS 2325

**ENGR 2302 Engineer Mechanics II-Dynamics (3-0-3)** Basic theory of engineering mechanics, using calculus, involving the motion of particles, rigid bodies, and systems of particles; Newton's Laws; work and energy relationships; principles of impulse and momentum; application of kinetics and kinematics to the solution of engineering problems.

**ENGR 2304 Programming for Engineers (3-0-3)** Programming principles and techniques for matrix and array operations, equation solving, and numeric simulations applied to engineering problems and visualization of engineering information; platforms include spreadsheets, symbolic algebra packages, engineering analysis software and laboratory control software.

**ENGR 2305 Electrical Circuits I (3-0-3)** Principles of electrical circuits and systems. Basic circuit elements (resistance, inductance, mutual inductance, capacitance, independent and dependent controlled voltage, and current sources). Topology of electrical networks; Kirchhoff's laws; node and mesh analysis; DC circuit analysis; operational amplifiers; transient and sinusoidal steady-state analysis; AC circuit analysis; first- and second-order circuits; Bode plots; and use of computer simulation software to solve circuit problems. Prerequisite: PHYS 2325 MATH 2414

**ENGR 2308 Engineering Economics (3-0-3)** Methods used for determining the comparative financial desirability of engineering alternatives. Provides the student with the basic tools required to analyze engineering alternatives in terms of their worth and cost, an essential element of engineering practice. The student is introduced to the concept of the time value of money and the methodology

of basic engineering economy techniques. The course will address some aspects of sustainability and will provide the student with the background to enable them to pass the Engineering Economy portion of the Fundamentals of Engineering exam.

## GEOG

**GEOG 1302 Human Geography (3-0-3)** This course introduces students to fundamental concepts, skills and practices of human geography. Place, space and scale serve as a framework for understanding patterns of human experience. Topics for discussion may include globalization, population and migration, culture, diffusion, political and economic systems, language, religion, gender and ethnicity.

**GEOG 1303 World Regional Geography (3-0-3)** This course is an introduction to the world's major regions seen through their defining physical, social, cultural, political and economic features. These regions are examined in terms of their physical and human characteristics and their interactions. The course emphasizes relations among regions on issues such as trade, economic development, conflict, and the role of regions in the globalization process.

## GEOL

**GEOL 1403 Physical Geology (3-3-4)** Introduction to the study of the materials and processes that have modified and shaped the surface and interior of Earth over time. These processes are described by theories based on experimental data and geologic data gathered from field observations. Laboratory activities will cover methods used to collect and analyze earth science data.

## GOVT

**GOVT 2301 American Government I (3-0-3)** Origin and development of the U.S. and Texas constitutions, structure and powers of national, state and local government including the legislative, executive and judicial branches, and federalism.

**GOVT 2302 American Government II (3-0-3)** Examination of political participation, the election process, public policy, civil liberties and civil rights in the US and Texas.

**GOVT 2305 Federal Government (Federal constitution & topics) (3-0-3)** Origin and development of the U.S. Constitution, structure and powers of the national government including the legislative, executive and judicial branches, federalism, political participation, the national election process, public policy, civil liberties and civil rights. Prerequisite: TSI Complete Reading

**GOVT 2306 Texas Government (Texas constitution & topics) (3-0-3)** Origin and development of the Texas constitution, structure and powers of state and local government, federalism and inter-governmental relations, political participation, the election process, public policy, and the political culture of Texas. Prerequisite: TSI Complete Reading

## HIST

**HIST 1301 United States History I (3-0-3)** A survey of the social, political, economic, cultural and intellectual history of the United States from the pre-Columbian era to the Civil War/Reconstruction period. United States History I includes the study of pre-Columbian, colonial, revolutionary, early national, slavery and sectionalism, and the Civil War/Reconstruction eras. Themes that may be addressed in United States History I include: American settlement and diversity, American culture, religion, civil and human rights, technological change, economic change, immigration and migration, and creation of the federal government. Prerequisite: TSI Complete Reading

**HIST 1302 United States History II (3-0-3)** A survey of the social, political, economic, cultural and intellectual history of the United States from the Civil War/Reconstruction era to the present. United States History II examines industrialization, immigration, world wars, the Great Depression, Cold War and post-Cold War eras. Themes that may be addressed in United States History II include: American culture, religion, civil and human rights, technological change, economic change, immigration and migration, urbanization and suburbanization, the expansion of the federal government, and the study of U.S. foreign policy. Prerequisite: TSI Complete Reading

**HIST 2312 Western Civilization II (3-0-3)** A survey of the social, political, economic, cultural, religious and intellectual history of Europe and the Mediterranean world from the 17th century to the modern era. Themes that should be addressed in Western Civilization II include absolutism and constitutionalism, growth of nation states, the Enlightenment, revolutions, classical liberalism, industrialization, imperialism, global conflict, the Cold War and globalism.

**HIST 2321 World Civilizations I (3-0-3)** A survey of the social, political, economic, cultural, religious and intellectual history of the world from the emergence of human cultures through the 15th century. The course examines major cultural regions of the world in Africa, the Americas, Asia, Europe and Oceania and their global interactions over time. Themes include the emergence of early societies, the rise of civilizations, the development of political and legal systems, religion and philosophy, economic systems and trans-regional networks of exchange. The course emphasizes the development, interaction and impact of global exchange.

## HORT

**HORT 1401 Horticulture (lecture + Lab) (3-2-4)** Structure, growth and development of horticultural plants. Examination of environmental effects, basic principles of reproduction, production methods ranging from outdoor to controlled climates, nutrition, and pest management. Laboratory activities will reinforce the structure, growth and development of horticultural plants.

## HUMA

**HUMA 1301 Introduction to Humanities I (3-0-3)** This stand-alone course is an interdisciplinary survey of cultures focusing on the philosophical and aesthetic factors in human values with an emphasis on the historical development of the individual and society and the need to create.

**HUMA 2323 World Cultures (3-0-3)** This course is a general study of diverse world cultures. Topics include cultural practices, social structures, religions, arts and languages.

## MATH

**MATH 1314 College Algebra (3-0-3)** In-depth study and applications of polynomial, rational, radical, exponential and logarithmic functions, and systems of equations using matrices. Additional topics such as sequences, series, probability and conics may be included.

**MATH 1316 Plane Trigonometry (3-0-3)** In-depth study and applications of trigonometry including definitions, identities, inverse functions, solutions of equations, graphing, and solving triangles. Additional topics such as vectors, polar coordinates and parametric equations may be included. Prerequisite: Must be TSI complete in Math.

**MATH 1325 Calculus for Business & Social Sciences (3-0-3)** This course is the basic study of limits and continuity, differentiation, optimization and graphing, and integration of elementary functions, with emphasis on applications in business, economics and social sciences. This course is not a substitute for MATH 2413, Calculus I. Prerequisite: MATH 1324

**MATH 1332 Contemporary Mathematics (Quantitative Reasoning) (3-0-3)** Intended for non-STEM (Science, Technology, Engineering and Mathematics) majors. Topics include introductory treatments of sets and logic, financial mathematics, probability and statistics with appropriate applications. Number sense, proportional reasoning, estimation, technology and communication should be embedded throughout the course. Additional topics may be covered.

**MATH 1342 Elementary Statistical Methods (3-0-3)** Collection, analysis, presentation and interpretation of data, and probability. Analysis includes descriptive statistics, correlation and regression, confidence intervals and hypothesis testing. Use of appropriate technology is recommended.

**MATH 1350 Fundamentals of Mathematics I (3-0-3)** Concepts of sets, functions, numeration systems, number theory, and properties of the natural numbers, integers, rational, and real number systems with an emphasis on problem-solving and critical thinking.

**MATH 1351 Fundamentals of Mathematics II (3-0-3)** Concepts of geometry, probability and statistics, as well as applications of the algebraic properties of real numbers to concepts of measurement with an emphasis on problem-solving and critical thinking. This course is designed specifically for students who seek middle grade (4 through 8) teacher certification. Prerequisite: MATH 1350

**MATH 2312 Pre-Calculus Math (3 SCH version) (3-1-3)** In-depth combined study of algebra, trigonometry and other topics for calculus readiness. Prerequisite: MATH 1314

**MATH 2313 Calculus I (3-0-3)** Limits, continuity, the derivative with applications and integration of polynomials.

**MATH 2318 Linear Algebra (3-0-3)** Introduces and provides models for application of the concepts of vector algebra. Topics include

finite dimensional vector spaces and their geometric significance; representing and solving systems of linear equations using multiple methods, including Gaussian elimination and matrix inversion; matrices; determinants; linear transformations; quadratic forms; eigenvalues and eigenvector; and applications in science and engineering. Prerequisite: MATH 2314 OR MATH 2414

**MATH 2320 Differential Equations (3-0-3)** Ordinary differential equations, including linear equations, systems of equations, equations with variable coefficients, existence and uniqueness of solutions, series solutions, singular points, transform methods, and boundary value problems; application of differential equations to real-world problems. Prerequisite: MATH 2414

**MATH 2342 Elementary Statistical Methods (3-0-3)** Collection, analysis, presentation and interpretation of data, and probability. Analysis includes descriptive statistics, correlation and regression, confidence intervals and hypothesis testing. Use of appropriate technology is recommended.

**MATH 2413 Calculus I (4 SCH version) (3-2-4)** Limits and continuity; the Fundamental Theorem of Calculus; definition of the derivative of a function and techniques of differentiation; applications of the derivative to maximizing or minimizing a function; the chain rule, mean value theorem, and rate-of-change problems; curve sketching; definite and indefinite integration of algebraic, trigonometric and transcendental functions, with an application to calculation of areas. Prerequisite: MATH 1316 MATH 2312 or MATH 2412

**MATH 2414 Calculus II (4 SCH version) (3-2-4)** Differentiation and integration of transcendental functions; parametric equations and polar coordinates; techniques of integration; sequences and series; improper integrals. Prerequisite: MATH 2413

**MATH 2415 Calculus III (4 SCH version) (3-2-4)** Advanced topics in calculus, including vectors and vector-valued functions, partial differentiation, Lagrange multipliers, multiple integrals, and Jacobians; application of the line integral, including Green's Theorem, the Divergence Theorem and Stokes' Theorem. Prerequisite: MATH 2414

## MUSI

**MUSI 1306 Music Appreciation (3-0-3)** Understanding music through the study of cultural periods, major composers and musical elements. Illustrated with audio recordings and live performances. (Does not apply to a music major degree.)

**MUSI 1310 American Music (3-0-3)** General survey of various styles of music in America. Topics may include jazz, ragtime, folk, rock and contemporary art music.

## PHIL

**PHIL 1301 Introduction to Philosophy (3-0-3)** A study of major issues in philosophy and/or the work of major philosophical figures in philosophy. Topics in philosophy may include theories of reality, theories of knowledge, theories of value, and their practical applications. Prerequisite: TSI Complete Reading

**PHIL 1304 Introduction to World Religions (3-0-3)** A comparative study of world religions, including but not limited to Hinduism, Buddhism, Judaism, Christianity and Islam.

**PHIL 2303 Introduction to Formal Logic (3-0-3)** The purpose of the course is to introduce the student to symbolic logic, including syllogisms, propositional and predicate logic, and logical proofs in a system of rules. Prerequisite: TSI Complete Reading

**PHIL 2306 Introduction to Ethics (3-0-3)** The systematic evaluation of classical and/or contemporary ethical theories concerning the good life, human conduct in society, morals and standards of value.

## PHYS

**PHYS 1101 College Physics Laboratory I (0-3-1)** This laboratory-based course accompanies PHYS 1301, College Physics I. Laboratory activities will reinforce fundamental principles of physics, using algebra and trigonometry; the principles and applications of classical mechanics and thermodynamics, including harmonic motion, mechanical waves and sound, physical systems, Newton's Laws of Motion, and gravitation and other fundamental forces; emphasis will be on problem-solving. Prerequisite: PHYS 1301

**PHYS 1102 College Physics Lab II (0-3-1)** This laboratory-based course accompanies PHYS 1302, College Physics II. Laboratory activities will reinforce fundamental principles of physics, using algebra and trigonometry; the principles and applications of electricity and magnetism, including circuits, electrostatics, electromagnetism, waves, sound, light, optics, and modern physics topics; with emphasis on problem-solving. Prerequisite: PHYS 1302

**PHYS 1110 Elementary Physics (0-3-1)** Conceptual level survey of topics in physics intended for liberal arts and other non-science majors. May or may not include a laboratory. Prerequisite: PHYS 1310

**PHYS 1115 Physical Science Lab I (0-2-1)** Course, designed for non-science majors, that surveys topics from physics, chemistry, geology, astronomy and meteorology. Prerequisite: PHYS 1315

**PHYS 1117 Physical Science Lab II (0-2-1)** Course, designed for non-science majors, that surveys topics from physics, chemistry, geology, astronomy and meteorology. Prerequisite: PHYS 1317

**PHYS 1301 College Physics I (3-0-3)** Fundamental principles of physics, using algebra and trigonometry; the principles and applications of classical mechanics and thermodynamics, including harmonic motion, mechanical waves and sound, physical systems, Newton's Laws of Motion, and gravitation and other fundamental forces; with emphasis on problem-solving.

**PHYS 1302 College Physics II (3-0-3)** Fundamental principles of physics, using algebra and trigonometry; the principles and applications of electricity and magnetism, including circuits, electrostatics, electromagnetism, waves, sound, light, optics, and modern physics topics; with emphasis on problem-solving.

**PHYS 1310 Elementary Physics (3-0-3)** Conceptual level survey of topics in physics intended for liberal arts and other non-science majors. May or may not include a laboratory.

**PHYS 1315 Physical Science I (lecture) (3-0-3)** Course, designed for non-science majors, that surveys topics from physics, chemistry, geology, astronomy and meteorology.

**PHYS 1317 Physical Science II (3-0-3)** Course, designed for non-science majors, that surveys topics from physics, chemistry, geology, astronomy and meteorology. Prerequisite: PHYS 1117

**PHYS 1401 College Physics I (3-3-4)** This lecture and lab course should combine all of the elements of PHYS 1301 (lecture) and PHYS 1101 (lab), including the learning outcomes listed for both courses. Prerequisite: MATH 1314

**PHYS 1402 College Physics II (3-3-4)** This lecture and lab course should combine all of the elements of PHYS 1302 (lecture) and PHYS 1102 (lab), including the learning outcomes listed for both courses. Prerequisite: PHYS 1401

**PHYS 1410 Elementary Physics (3-3-4)** Conceptual topics and algebra-level problem-solving in a survey course of basic physics principles intended for non-science majors. This course includes a laboratory.

**PHYS 1415 Physical Science I (3-3-4)** Course, designed for non-science majors, that surveys topics from physics, chemistry, geology, astronomy and meteorology.

**PHYS 1417 Physical Science II Physical Science II (3-3-4)** Course, designed for non-science majors, that surveys topics from physics, chemistry, geology, astronomy and meteorology.

**PHYS 2125 University Physics Laboratory I (lab) (0-3-1)** Basic laboratory experiments supporting theoretical principles presented in PHYS 2325 involving the principles and applications of classical mechanics, including harmonic motion and physical systems; experimental design, data collection and analysis, and preparation of laboratory reports. Prerequisite: PHYS 2325

**PHYS 2126 University Physics Laboratory II (lab) (0-3-1)** Laboratory experiments supporting theoretical principles presented in PHYS 2326 involving the principles of electricity and magnetism, including circuits, electromagnetism, waves, sound, light and optics; experimental design, data collection and analysis, and preparation of laboratory reports. Prerequisite: PHYS 2326

**PHYS 2325 University Physics I (lecture) (3-0-3)** Fundamental principles of physics, using calculus, for science, computer science and engineering majors; the principles and applications of classical mechanics, including harmonic motion, physical systems and thermodynamics; and emphasis on problem-solving.

**PHYS 2326 University Physics II (lecture) (3-0-3)** Principles of physics for science, computer science and engineering majors, using calculus, involving the principles of electricity and magnetism, including circuits, electromagnetism, waves, sound, light and optics.

**PHYS 2425 University Physics I (3-3-4)** This lecture and lab course should combine all of the elements of PHYS 2325 University Physics I Lecture and PHYS 2125 University Physics I Lab, including the learning outcomes listed for both courses. Prerequisite: MATH 2413

**PHYS 2426 University Physics II (3-3-4)** This lecture and lab course should combine all of the elements of 2326 University Physics II Lecture and 2126 University Physics II Lab, including the learning outcomes listed for both courses. Prerequisite: PHYS 2425

## PSYC

**PSYC 1100 Learning Framework (1-2-1)** A study of the 1) research and theory in the psychology of learning, cognition and motivation, 2) factors that impact learning, and 3) application of learning strategies. Theoretical models of strategic learning, cognition and motivation serve as the conceptual basis for the introduction of college-level student academic strategies. Students use assessment instruments (e.g., learning inventories) to help them identify their own strengths and weaknesses as strategic learners. Students are ultimately expected to integrate and apply the learning skills discussed across their own academic programs and become effective and efficient learners. Students developing these skills should be able to continually draw from the theoretical models they have learned. (Cross-listed as EDUC 1300)

**PSYC 2301 General Psychology (3-0-3)** General Psychology is a survey of the major psychological topics, theories and approaches to the scientific study of behavior and mental processes. Prerequisite: TSI Complete Reading

**PSYC 2314 Lifespan Growth & Development (3-0-3)** Life-Span Growth and Development is a study of social, emotional, cognitive and physical factors and influences of a developing human from conception to death. Prerequisite: TSI Complete Reading

## SOCI

**SOCI 1301 Introduction to Sociology (3-0-3)** The scientific study of human society, including ways in which groups, social institutions and individuals affect each other. Causes of social stability and social change are explored through the application of various theoretical perspectives, key concepts and related research methods of sociology. Analysis of social issues in their institutional context may include topics such as social stratification, gender, race/ethnicity and deviance. Prerequisite: TSI Complete Reading

**SOCI 1306 Social Problems (3-0-3)** Application of sociological principles and theoretical perspectives to major social problems in contemporary society such as inequality, crime and violence, substance abuse, environmental issues, deviance, or family problems. Prerequisite: TSI Complete Reading

**SOCI 2319 Minority Studies I (3-0-3)** This course studies minority-majority group relations, addressing their historical, cultural, social, economic and institutional development in the United States. Both sociological and social psychological levels of analysis will be employed to discuss issues including experiences of minority groups within the context of their cultural heritage and tradition, as well as that of the dominant culture. Core concepts to be examined include (but are not limited to) social inequality, dominance/subordination, prejudice and discrimination. Particular minority groups discussed may include those based on poverty, race/ethnicity, gender, sexual orientation, age, disability or religion.

## SPAN

**SPAN 1311 Beginning Spanish I (3-0-3)** Basic Spanish language skills in listening, speaking, reading and writing within a cultural framework. Students will acquire the vocabulary and grammatical structures necessary to communicate and comprehend at the beginner level.

**SPAN 1312 Beginning Spanish II (3-0-3)** Continued development of basic Spanish language skills in listening, speaking, reading and writing within a cultural framework. Students acquire the vocabulary and grammatical structures necessary to communicate and comprehend at the high beginner to low intermediate level. Prerequisite: SPAN 1311 OR SPAN 1411

**SPAN 1411 Beginning Spanish I (4-0-4)** Basic Spanish language skills in listening, speaking, reading and writing within a cultural framework. Students will acquire the vocabulary and grammatical structures necessary to communicate and comprehend at the beginner level.

**SPAN 1412 Beginning Spanish II (4-0-4)** Continued development of basic Spanish language skills in listening, speaking, reading and writing within a cultural framework. Students acquire the vocabulary and grammatical structures necessary to communicate and comprehend at the high beginner to low intermediate level. Prerequisite: SPAN 1411 or SPAN 1311

## SPCH

**SPCH 1311 Introduction to Speech Communication (3-0-3)** Introduces basic human communication principles and theories embedded in a variety of contexts including interpersonal, small group, and public speaking.

**SPCH 1315 Public Speaking (3-0-3)** Application of communication theory and practice to the public speaking context, with emphasis on audience analysis, speaker delivery, ethics of communication, cultural diversity, and speech organizational techniques to develop students' speaking abilities, as well as ability to effectively evaluate oral presentations.

**SPCH 1318 Interpersonal Communication (3-0-3)** Application of communication theory to interpersonal relationship development, maintenance, and termination in relationship contexts including friendships, romantic partners, families, and relationships with co-workers and supervisors.

**SPCH 1321 Business & Professional Communication (3-0-3)** Study and application of communication within the business and professional context. Special emphasis will be given to communication competencies in presentations, dyads, teams and technologically mediated formats.

## TECA

**TECA 1318 Wellness of the Young Child (3-2-3)** A study of the factors that impact the well-being of the young child including healthy behavior, food, nutrition, fitness, and safety practices. Focuses on local and national standards and legal implications of

relevant policies and regulations. Course content must be aligned as applicable with State Board for Educator Certification Pedagogy and Professional Responsibilities standards and coincide with the National Assessment of Educational Progress position statement related to developmentally appropriate practices for children from birth to age eight. Requires students to participate in field experiences with children from infancy through age 12 in a variety of settings with varied and diverse populations. Course includes a minimum of 16 hours of field experiences.

**TECA 1354 Child Growth & Development (3-0-3)** A study of the physical, emotional, social, language and cognitive factors impacting growth and development of children through adolescence.

## TSTC

**TSTC 1101 College Success (1-1-1)** Essential elements of student learning success at TSTC.

## Developmental

For contact hour information developmental courses, please consult your adviser.

## DMTH

**DMTH 0009 Supplemental Math Lab I (0-2-0)** This is a lab for students in NCBM 0009. Prerequisite: NCBM 0009 (Co Req)

**DMTH 0010 Supplemental Math Lab II (0-2-0)** This is a lab for students in NCBM 0010. Students completing this lab with a C or better have completed their TSI requirements for math. Prerequisite: NCBM 0010 (Co Req)

**DMTH 0100 Introductory Algebra (3-1-3)** This course covers introductory algebra topics.

**DMTH 0200 Intermediate Algebra (3-1-3)** A study of relations and functions, inequalities, algebraic expressions and equations (absolute value, polynomial, radical, rational), with a special emphasis on linear and quadratic expressions and equations. Students completing this course with a C or better have completed their TSI requirements for math. Prerequisite: DMTH 0100

**DMTH 0800 Mathematics Lab (0-0-0)** This course is designed for students to participate in remedial studies on an individual basis. Course content is customized to each student's specific deficiencies. Semester credit hours vary depending on students' specific needs. Course may be repeated for credit

**DMTH 0801 Mathematics Lab (0-1-1)** This course is designed for students to participate in remedial studies on an individual basis. Course content is customized to each student's specific deficiencies. Semester credit hours vary depending on students' specific needs. Course may be repeated for credit. The last digit of the course number indicates the semester credit hours.

**DMTH 0802 Mathematics Lab (0-2-2)** This course is designed for students to participate in remedial studies on an individual basis. Course content is customized to each student's specific deficiencies. Semester credit hours vary depending on students' specific needs. Course may be repeated for credit. The last digit of the course number indicates the semester credit hours. Prerequisite: DMTH 0803 DMTH 0100 QTEST M100 or QTEST STM1

**DMTH 0803 Mathematics Lab (0-3-3)** This course is designed for students to participate in remedial studies on an individual basis. Course content is customized to each student's specific deficiencies. Semester credit hours vary depending on students' specific needs. Course may be repeated for credit. The last digit of the course number indicates the semester credit hours.

**DMTH 0804 Mathematics Lab (0-4-4)** This course is designed for students to participate in remedial studies on an individual basis. Course content is customized to each student's specific deficiencies. Semester credit hours vary depending on students' specific needs. Course may be repeated for credit. The last digit of the course number indicates the semester credit hours.

## INRW

**INRW 0009 Supplemental Reading/Writing Lab I (0-2-0)** This is a lab for students in NCBI 0009. Prerequisite: NCBI 0009 (Co Req)

**INRW 0010 Supplemental Reading/Writing Lab II (0-2-0)** This is a lab for students in NCBI 0010. Students completing this lab with a C or better have completed their TSI requirements for reading and writing. Prerequisite: NCBI 0010 (Co Req)

**INRW 0100 Integrated Reading/Writing I (3-1-3)** This course covers introductory integrated reading and writing topics.

**INRW 0200 Integrated Reading/Writing II (3-1-3)** Integration of critical reading and academic writing skills. Students completing this course with a C or better have completed their TSI requirements for reading and writing. Prerequisite: INRW 0100

**INRW 0307 Integrated Reading and Writing II (0-3-3)** Integration of critical reading and academic writing skills. The course fulfills TSI requirements for reading and/or writing. The foundation of this course is a performance-based curriculum with a combined lecture/lab designed to develop students' critical reading and academic writing skills. The course integrates preparation in basic academic reading skills with basic skills in writing a variety of essays.

## MIRW

**MIRW 0150 Modular Integrated Reading/Writing (3-0-3)** Integration of critical reading and academic writing skills. The course fulfills TSI requirements for reading and/or writing.

## NCBI

**NCBI 0001 ACGM (0-0-0)** Reading/Writing Refresher Prerequisite: Developmental reading and writing skills necessary for college readiness. This NCBO is the L-Series 4-hour co-taught model.

**NCBI 0009 Embedded Reading/Writing I (0-2-0)** Embedded reading and writing skills in technical course(s).

**NCBI 0010 Base Reading& Writing Lab (0-2-0)** Embedded reading and writing skills in technical course(s).

**NCBI 0040 Communication Blast Off (0-0-0)** A refresher designed to help students improve their score on the reading and writing portions of the TSI Assessment.

**NCBI 0050 Reading/Writing Quick Review (2-0-0)** This is a bootcamp review of reading/writing concepts.

**NCBI 0100 BASE Reading/Writing Lab (0-2-0)** This course supports students in INRW 0100 if they score from 310-341 in reading or 310-349 on writing on the TSIA. Prerequisite: INRW 0100

**NCBI 0301 Reading and Writing Basics for Composition I (0-2-0)** Developmental reading and writing skills necessary for college readiness. This NCBO is the 5-hour (3 hour academics, 2 hour DevEd) model. Prerequisite: ENGL 1301 (Co Requisite)

**NCBI 0306 Reading and Writing I (0-0-0)** Integration of critical reading and academic writing skills. This intervention is designed specifically for students assessed at ABE BASE levels 3-4 and must be part of a student's co-enrollment (co-requisite) enrollment: 1) as a mainstreamed intensifier providing contact hours for additional, just-in-time instructional support for the student's success in the developmental IRW course, or 2) as a contextualized and/or integrated basic skills instructional support for a Career/Technical Education course. Students must be co-enrolled in INRW 0306. Prerequisite: INRW 0306

## NCBM

**NCBM 0009 Embedded Math I (0-2-0)** Embedded math skills in technical course(s).

**NCBM 0010 Embedded Math II (0-2-0)** Embedded math skills in technical course(s).

**NCBM 0014 Math Fundamentals for College Algebra (0-0-0)** Development of math and higher order thinking skills necessary for college readiness. This intervention is designed specifically for students who have a TSIA score greater than 335. (0-4-0)

**NCBM 0016 Math Fundamentals for Trigonometry (0-0-0)** Development of math and higher order thinking skills necessary for college readiness. This intervention is designed specifically for students who have a TSIA score greater than 335. (0-4-0)

**NCBM 0032 Math Fundamentals - Quantitative Reasoning (0-0-0)**

Development of math and higher order thinking skills necessary for college readiness. This intervention is designed specifically for students who have a TSIA score greater than 335.

**NCBM 0040 Pedal to the Metal (0-0-0)** A refresher designed to help students improve their score on the math portion of the TSI Assessment.

**NCBM 0050 Math Quick Review (2-0-0)** This is a bootcamp review of math concepts.

**NCBM 0100 BASE Math Lab (0-2-0)** This course supports students in DMTH 0100 if they score from 310-335 in math on the TSIA. Prerequisite: DMTH 0100

## READ

**READ 0050 Basic Reading Skills (3-1-0)** This is a fundamental reading course designed for students who need intensive, diagnostic-based instruction in basic word-attack skills, vocabulary development and basic comprehension strands.

**READ 0800 Reading Lab (0-0-0)** This course is designed for students to participate in remedial studies on an individual basis. Course content is customized to each student's specific deficiencies. Semester credit hours vary depending on students' specific needs. Course may be repeated for credit.

**READ 0801 Reading Lab (0-1-1)** This course is designed for students to participate in remedial studies on an individual basis. Course content is customized to each student's specific deficiencies. Semester credit hours vary depending on students' specific needs. Course may be repeated for credit. The last digit of the course number indicates the semester credit hours.

**READ 0802 Reading Lab (0-2-2)** This course is designed for students to participate in remedial studies on an individual basis. Course content is customized to each student's specific deficiencies. Semester credit hours vary depending on students' specific needs. Course may be repeated for credit. The last digit of the course number indicates the semester credit hours.

**READ 0803 Reading Lab (3-0-3)** This course is designed for students to participate in remedial studies on an individual basis. Course content is customized to each student's specific deficiencies. Semester credit hours vary depending on students' specific needs. Course may be repeated for credit. The last digit of the course number indicates the semester credit hours.

**READ 0804 Read Lab (0-4-4)** This course is designed for students to participate in remedial studies on an individual basis. Course content is customized to each student's specific deficiencies. Semester credit hours vary depending on students' specific needs. Course may be repeated for credit. The last digit of the course number indicates the semester credit hours.

## TECH

**TECH 1100 Foundations of Technical Career Success (0-2-1)**

Examines factors that underlie success in learning and work environments for the students chosen career field. Topics covered include strategic learning, self-management, personal motivation, workplace diversity and educational/career planning. Techniques such as time management, goal setting, communication strategies, research skills, report writing and workplace safety practices are covered.

## WRIT

**WRIT 0050 Basic Writing Skills (3-0-3)** Development of college-level writing focusing on idea generation, drafting, organization, revision, and utilization of standard English.

**WRIT 0800 Writing Lab (0-0-0)** This course is designed for students to participate in remedial studies on an individual basis. Course content is customized to each student's specific deficiencies. Semester credit hours vary depending on students' specific needs. Course may be repeated for credit.

**WRIT 0801 Writing Lab (0-1-1)** This course is designed for students to participate in remedial studies on an individual basis. Course content is customized to each student's specific deficiencies. Semester credit hours vary depending on students' specific needs. Course may be repeated for credit. The last digit of the course number indicates the semester credit hours.

**WRIT 0802 Writing Lab (0-2-2)** This course is designed for students to participate in remedial studies on an individual basis. Course content is customized to each student's specific deficiencies. Semester credit hours vary depending on students' specific needs. Course may be repeated for credit. The last digit of the course number indicates the semester credit hours.

**WRIT 0803 Writing Lab (3-0-3)** This course is designed for students to participate in remedial studies on an individual basis. Course content is customized to each student's specific deficiencies. Semester credit hours vary depending on students' specific needs. Course may be repeated for credit. The last digit of the course number indicates the semester credit hours.

**WRIT 0804 Writing Lab (4-0-4)** Students participate in remedial studies on an individual basis. Customized to each student's specific needs. Semester credit hours vary depending on students' specific needs. Course may be repeated for credit.

## Online Orientation Course

## SOLO

**SOLO 100 Student Online Learning Orientation (0-0-0)** The goal of the TSTC Student Online Learning Orientation is to increase your awareness, readiness and self-confidence in taking online learning courses.

# Technical Courses

## ABDR

**ABDR 1203 Vehicle Design and Structural Analysis (1-2-2)** An introduction to the collision repair industry with emphasis on safety, professionalism, and vehicle structural design.

**ABDR 1215 Vehicle Trim and Hardware (1-2-2)** A study of vehicle trim and glass service.

**ABDR 1307 Collision Repair Welding (2-4-3)** A study of industry and standard welding and cutting procedures.

**ABDR 1323 Front and Rear Wheel Alignment (2-4-3)** Study of vehicle steering components including alignment, tire rotation and balancing.

**ABDR 1349 Automotive Plastic and Sheet Molded Compound Repair (2-3-3)** A comprehensive course in repair of interior and exterior plastics including the use of various types of adhesives.

**ABDR 1359 Sheet Metal Fabrication I (2-3-3)** A study of the basic shaping techniques required for fabricating sheet metal parts and pieces. Discussion will include custom cars and street rods.

**ABDR 1371 Basic Paint Techniques, Equipment & Environmental Practices (1-6-3)** An introduction to current refinishing products, equipment and procedures used in the automotive refinishing industry on damaged panels. Emphasis on surface preparation, corrosion protection, masking techniques, masking techniques, block sanding techniques and refinishing repaired panels.

**ABDR 1419 Basic Metal Repair (2-6-4)** Covers basic metal principles and working techniques including proper tool usage and product application.

**ABDR 1431 Basic Refinishing (2-6-4)** An introduction to current refinishing products, shop safety, and equipment used in the automotive refinishing industry. Emphasis on surface preparation, masking techniques, and refinishing of trim and replacement parts. Prerequisite: ABDR 1371

**ABDR 1442 Structural Analysis and Damage Repair II (2-6-4)** Continuation of general repair and replacement procedures for damaged structural parts and collision damage. Prerequisite: ABDR 1323 ABDR 1419 or ABDR 2435

**ABDR 1458 Intermediate Refinishing (2-4-4)** Training in mixing and spraying of automotive topcoats. Emphasis on formula ingredient, reducing, thinning, and special spraying techniques. Introduction to partial panel refinishing techniques and current industry paint removal techniques. Prerequisite: ABDR 1371

**ABDR 1481 Cooperative Education - Auto Body/Collision and Repair Technology/Technician (1-0-4)** Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

**ABDR 2255 Collision Repair Estimating (1-2-2)** An advanced course in collision estimating and development of a damage report utilizing estimating software.

**ABDR 2270 Advanced Application Processes of Refinishing (0-8-2)** An advanced course in the practical application of acquired refinishing skills. Use industry relevant estimating programs and interpret work orders to create and implement a repair plan on live projects. Repairs will be completed by application of theory, concepts and skills involving specialized materials, tools, equipment, procedures, regulations, laws and interactions with the instructor/customer; and will demonstrate ethical behavior, safety practices, interpersonal and teamwork skills and appropriate written and verbal communication skills using the terminology of collision repair industry and the instructor/customer.

**ABDR 2281 Cooperative Education - Auto Body/Collision and Repair Technology/Technician (1-0-2)** Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

**ABDR 2357 Collision Repair Shop Management (2-3-3)** Examination of shop management functions and decision-making processes including planning, organizing, leading and staffing used in collision repair shops to ensure operational profitability.

**ABDR 2359 Structural Sectioning (2-4-3)** Skill development in the practical application of welded panel replacement and structural sectioning procedures as well as practical equipment applications in structural vehicle straightening, alignment, welding, and corrosion protection. Prerequisite: ABDR 1307 ABDR 1419 ABDR 2435

**ABDR 2371 Refinishing Process I (2-4-3)** The theory and practical application of spray booth and vehicle pre-spray preparation. Remove and perform final finishing. Apply decals and stripes with emphasis on paint problems and remedies. Prerequisite: ABDR 1458 ABDR 1431

**ABDR 2435 Structural Analysis and Damage Repair IV (2-6-4)** Continuation of skills development in the repair and replacement of major body units.

**ABDR 2447 Advanced Collision Repair Welding (2-4-4)** Skill development in the use of advanced welding and cutting processes. Emphasizes current welding procedures and specific repair requirements for specialized metals.

**ABDR 2449 Advanced Refinishing (2-6-4)** Application of multi-stage refinishing techniques. Advanced skill development solving refinishing problems. Application of multi-stage refinishing techniques with emphasis on formula mixing and special spraying techniques. Prerequisite: ABDR 1458 ABDR 1431

**ABDR 2453 Color Analysis and Paint Matching (2-6-4)** Advanced course in color theory, analysis, tinting, and blending techniques for acceptable paint matching.

**ABDR 2502 Auto Body Mechanical and Electrical Service (3-6-5)**

A course in the repair, replacement, and/or service of collision damaged mechanical or electrical systems. Topics include drive train removal, reinstallation and service; cooling system service and repair; exhaust system service; and emission control systems. Additional topics include wire and connector repair, reading wiring diagrams, and troubleshooting.

**ABDR 2551 Specialized Refinishing Techniques (3-6-5)**

Advanced topics in specialty automotive refinishing. Emphasis on refinishing plastics, fiberglass, aluminum, and galvanized panels as well as custom graphics and current industry innovations.

## ACNT

**ACNT 1311 Introduction to Computerized Accounting (2-4-3)**

Introduction to utilizing the computer in maintaining accounting records with primary emphasis on a general ledger package.

**ACNT 1325 Principles of Accounting I (2-4-3)**

A study of accounting concepts and their application in transaction analysis and financial statement preparation. Emphasis on the accounting cycle for service and merchandising enterprises.

**ACNT 1329 Payroll & Business Tax Accounting (2-2-3)**

A study of payroll procedures, taxing entities, and reporting requirements of local, state, and federal taxing authorities in a manual and computerized environment.

## AERM

**AERM 1107 Aviation Mathematics (0-3-1)**

Fundamentals of mathematics applied to aircraft principles and operations as required by the Federal Aviation Administration for airframe and powerplant mechanics.

**AERM 1109 Aviation Physics (0-2-1)**

Fundamentals of physics applied to aircraft principles and operations as required by the Federal Aviation Administration for airframe and powerplant mechanics.

**AERM 1112 Aviation Drawings (0-2-1)**

Fundamentals of aviation drawings applied to aircraft principles and operations as required by the Federal Aviation Administration for airframe and powerplant mechanics.

**AERM 1203 Shop Practices (1-4-2)**

An introduction to shop safety, the correct use of hand tools, equipment and precision measurement, identification of aircraft hardware, and the fabrication of fluid lines and tubing. Emphasis on procedures for testing, heat treating, and inspection of aircraft structures.

**AERM 1205 Weight and Balance (1-2-2)**

An introduction to Federal Aviation Administration (FAA) required subjects relating to the weighing of aircraft, the performance of weight and balance calculations, and appropriate maintenance record entries.

**AERM 1208 Federal Aviation Regulations (1-4-2)**

A course in the use and understanding of Federal Aviation Administration (FAA) and aircraft manufacturers' publications, forms, and records; and the exercise of mechanic privileges within prescribed limitations.

**AERM 1210 Ground Operations (1-3-2)**

An introductory course in fuels, servicing methods, safety procedures, aircraft movement, securing and operations of aircraft, external power equipment, aircraft cleaning, and corrosion control.

**AERM 1240 Aircraft Propellers (1-4-2)**

Fundamentals of propeller design, function, and construction. Skill development in inspection, servicing, and repair of fixed-pitch, constant-speed, and feathering propellers and governing systems. Instruction in removal, balancing, and installation of propellers and fundamentals of safety are also addressed. Prerequisite: AERM 1109 or AERM 1315

**AERM 1241 Wood, Fabric, and Finishes (1-3-2)**

A course in the use and care of various covering materials, finishes, and wood structures including approved methods and procedures. Safety also addressed.

**AERM 1243 Instruments and Navigation/Communication (1-2-2)**

A study of aircraft instruments and electronic flight instrument systems including testing and installing instruments; inspecting, checking, and troubleshooting navigation and communication systems; and inspecting and repairing antennas and electronic equipment installations. Prerequisite: AERM 1314

**AERM 1247 Airframe Auxiliary Systems (1-4-2)**

A comprehensive study of airframe auxiliary systems including cabin atmospheric control systems, ice and rain control systems for aircraft and engines, and fire detection and protection systems. Fundamentals of safety procedures also addressed. Prerequisite: AERM 1109 or AERM 1315

**AERM 1253 Aircraft Welding (1-2-2)**

Skill development in repair procedures for steel, magnesium, brass, and aluminum materials. Includes the selection and application of appropriate methods of welding, brazing, and soldering. Fundamentals of safety procedures also addressed. Prerequisite: AERM 1203

**AERM 1254 Aircraft Composites (1-4-2)**

Comprehensive concepts of the inspection and repair of composite, fabric, core, and laminated structural materials including doors, windows, bonded structures, and interior furnishings. Safety procedures to include the handling and storage of composite materials will also be addressed.

**AERM 1314 Basic Electricity (2-4-3)**

A study of aircraft electrical systems and their requirements including the use of ammeter, voltmeter, and ohmmeter; series and parallel circuits; inductance and capacitance; magnetism; converting alternating current (AC) to direct current (DC); controlling devices; maintenance and servicing of aircraft batteries; and reading and interpreting aircraft electrical diagrams to include solid state devices and logic functions. Fundamentals of electrical safety also addressed.

**AERM 1315 Aviation Science (2-4-3)**

Fundamentals of mathematics, physics, and drawings as they apply to aircraft principles and operations as required by the Federal Aviation Administration (FAA) for airframe and powerplant mechanics.

**AERM 1345 Airframe Electrical Systems (2-4-3)**

A study of airframe electrical systems including installation, removal, disassembly, and repair of electrical components and related wiring. Fundamentals of electrical safety also addressed. Prerequisite: AERM 1314

**AERM 1350 Landing Gear Systems (2-3-3)** General principles of inspection, servicing, overhaul, and repair of fixed and retractable landing gear systems and the operation and repair of position and warning systems. Includes coverage of systems, components, operation, and fundamentals of safety procedures.

**AERM 1351 Aircraft Turbine Engine Theory (2-4-3)** General principles of theory, history, and servicing of turbine engines to include lubrication, instrumentation, auxiliary power units, and exhaust systems. Fundamentals of safety procedures are also addressed. Prerequisite: AERM 1109 or AERM 1315

**AERM 1357 Fuel Metering and Induction Systems (2-4-3)** Skill development in fuel metering and induction systems used on reciprocating and turbine engines including fuel metering systems, carburetors, induction systems, heat exchangers, and cooling systems. Fundamentals of safety procedures will also be addressed.

**AERM 1444 Aircraft Reciprocating Engines (3-4-4)** Reciprocating engines, their development, operating principles, and theory. Includes engine instruments, lubrication, and exhaust systems. Also addresses fundamentals of safety. Prerequisite: AERM 1109 or AERM 1315

**AERM 1449 Hydraulic, Pneumatic, and Fuel Systems (3-4-4)** Skill development in inspecting, servicing, and maintaining aircraft fluid systems including hydraulics, pneumatics, and fuel. Application of concepts through detailed maintenance procedures. Fundamentals of safety procedures also addressed. Prerequisite: AERM 1109 or AERM 1315

**AERM 1452 Aircraft Sheet Metal (2-6-4)** Skill development in inspection and repair of sheet metal structures including forming, lay out, and bending of sheet metal and identification, selection, and installation of rivets and fasteners. Fundamentals of safety procedures also addressed. Prerequisite: (AERM 1107 AERM 1112 AERM 1203) or (AERM 1315 AERM 1203)

**AERM 1456 Aircraft Powerplant Electrical (2-6-4)** General principles of theory, operation, and maintenance of powerplant electrical systems including ignition, starting, and fire protection systems. Fundamentals of safety procedures will also be addressed. Prerequisite: AERM 1314

**AERM 2230 FAA Review - Airframe (1-3-2)** Review of Federal Aviation Administration subject matter in the General and Airframe curricula with an emphasis on enhancing knowledge and physical skills in preparing for the FAA-required computer, oral and practical examinations.

**AERM 2231 Airframe Inspection (1-4-2)** In-depth coverage of methods and procedures to perform airframe conformity and air worthiness inspections (including One Hundred Hour Inspections) in accordance with Federal Aviation Regulations and manufacturer's service information. Safety procedures will also be addressed.

**AERM 2234 FAA Review - Powerplant (1-3-2)** Federal Aviation Administration subject matter in the General and Powerplant curricula with an emphasis on enhancing knowledge and physical skills in preparing for the FAA-required computer, oral, and powerplant examinations.

**AERM 2333 Assembly and Rigging (2-3-3)** A comprehensive study of the assembly and rigging of fixed and rotary-wing aircraft including structural alignment, balancing and rigging of control systems, and assembly of aircraft components. Fundamentals of safety procedures are also addressed.

**AERM 2341 Powerplant and Auxiliary Power Units (2-2-3)** Advanced concepts of auxiliary power unit (APU) and powerplant systems and components. Safety procedures will also be addressed.

**AERM 2351 Aircraft Turbine Engine Overhaul (2-4-3)** Comprehensive study in inspection, disassembly, reassembly, and replacement of gas turbine engines, sections, and components including operational troubleshooting, analysis, and safety. Prerequisite: AERM 1351

**AERM 2352 Aircraft Powerplant Inspection (2-3-3)** In depth coverage of methods and procedures to perform powerplant conformity and airworthiness inspections (including one hundred hour inspections) in accordance with Federal Aviation Regulations and manufacturer's information. Safety procedures will also be addressed.

**AERM 2447 Aircraft Reciprocating Engine Overhaul (2-6-4)** A comprehensive study of reciprocating engine overhaul including measurement and inspection procedures. Instruction in removal and installation, inspections, checks, servicing, repair of engines, and safety procedures will also be addressed. Prerequisite: AERM 1444.

## AGAH

**AGAH 1401 Animal Science (3-4-4)** An introductory survey of the scientific principles and applied practices related to livestock production. Topics include genetics, animal breeding and selection, anatomy and physiology, nutrition, reproduction, health, and marketing of livestock and livestock products.

**AGAH 2413 Principles of Feeds and Feeding (3-4-4)** Study of the role and application of feed nutrients and additives. Topics include comparative aspects of digestion, absorption, and metabolism of nutrients. Emphasis on identification of nutrient requirements and formulation of dietary feeding regimens.

## AGCR

**AGCR 1341 Forage and Pasture Management (2-4-3)** Study of the production and management of forage crops and pastures including establishment, fertilization, weed control, grazing systems, hay, seed production, and harvesting. Prerequisite: AGMG 1400

**AGCR 1403 Crop Science (2-4-4)** Fundamentals of the development, production, and management of field crops. Topics include the classification and distribution of field crops, botany, soils, plant breeding, pest management, and harvesting. Prerequisite: AGMG 1400

**AGCR 2305 Entomology (2-4-3)** Study of the morphology, physiology, and classification of the common insect orders and related arthropods with emphasis on species of economic or biological importance. Emphasis on integrated pest management concepts and proper use of pesticides.

**AGCR 2313 Soil and Water Conservation Management (2-4-3)** Study of physical and chemical soil deterioration and loss, water conservation, and principles for protection and maintenance of these resources. Topics include plant/water relationships, water conservation methods, basic terrace engineering principles, sediment loss, and land use plans.

## AGME

**AGME 1353 Harvesting Equipment (2-4-3)** Operation and maintenance including adjustment techniques of harvesting equipment.

**AGME 1415 Farm and Ranch Shop Skills I (3-3-4)** Study and application of shop skills used in agricultural processes including arc welding, oxyacetylene cutting and welding, drawing and planning projects, tool maintenance, metal working, woodworking, plumbing, and concrete. Prerequisite: AGMG 1400

## AGMG

**AGMG 1311 Introduction to Agribusiness (3-0-3)** Introduction to agribusiness management, marketing, and sales in the free enterprise system. Topics include economic principles, finance, risk management, record keeping, budgeting, employee/employer responsibilities, communications, human relation skills, and agricultural career opportunities.

**AGMG 1344 Agricultural Records Management (2-4-3)** Examination of the principles of agricultural records and bookkeeping with emphasis on utilization and interpretation of farm and ranch accounts.

**AGMG 1400 Agricultural Policies, Safety and Codes (2-4-4)** Study of safety standards, government regulations, and codes as they apply to agriculture. Emphasis on the application of current safety and health standards, and compliance with state and federal regulations.

## AIRP

**AIRP 1175 Intermediate Flight (0-3-1)** Provides students with flight hours and skills necessary to fulfill solo cross-country hours required for the Federal Aviation Administration Commercial Pilot, single engine land, airplane certificate. Prerequisite: AIRP 1215

**AIRP 1215 Private Flight (0-5-2)** Flight and ground training to prepare the student for the completion of the Federal Aviation Administration private pilot certificate.

**AIRP 1255 Intermediate Flight (0-5-2)** Provides students with flight hours and skills necessary to fulfill solo cross-country hours required for the Federal Aviation Administration Commercial Pilot, single engine land, airplane certificate. Prerequisite: AIRP 1215

**AIRP 1301 Air Navigation (2-2-3)** Instruction in Visual Flight rules navigation in the National Airspace System. Topics include, flight computers, plotters, and navigation logs and publications. Qualifies as part of a program leading to Federal Aviation Administration Private Pilot certification.

**AIRP 1307 Aviation Meteorology (3-0-3)** In-depth coverage of meteorological phenomena affecting aircraft flight. Topics include basic concepts of aviation meteorology in the study of temperature, pressure, moisture, stability, clouds, air masses, fronts, thunderstorms, icing, and fog. Also includes analysis and use of weather data for flight planning.

**AIRP 1343 Aerodynamics (2-2-3)** Study of the general principles of the physical laws of flight. Topics include physical terms and the four forces of flight: lift, weight, thrust, and drag. Aircraft design, stability control, and high-speed flight characteristics are also included.

**AIRP 1345 Aviation Safety (3-0-3)** A study of the fundamentals essential to the safety of flight. A survey of the aviation industry including decision-making factors, accident reporting, accident investigation, air traffic systems, and aircraft technologies.

**AIRP 1372 Dispatch Resource Management (3-0-3)** Study of Human Factors in aviation and of the challenges of optimizing communication between diverse workgroups within an airline and the related interpersonal issues; while using available resources viewed from the Aircraft Dispatcher vantage point. Course will also look at operational control, decision-making, communication, and workload management related issues associated with the Aircraft Dispatcher profession. Lastly, Aircraft Dispatcher related aviation incidents and accidents will be explored.

**AIRP 1373 Helicopter Aerodynamics (2-2-3)** Study of the General Principles of the Physical Laws of Flight. Topics Include Physical Terms and the Four Forces of Flight, Lift, Weight, Thrust, and Drag, Helicopter Design, Aerodynamic forces on rotor airfoils, Stability Control and stability/controllability characteristics, hazardous flight conditions, and overlapping fixed-wing aerodynamics similarities.

**AIRP 1417 Private Pilot Ground School (3-2-4)** Basic ground school for the Federal Aviation Administration Private Pilot Certificate, providing the student with the necessary aeronautical knowledge that can be used for private pilot certification. Topics include principles of flight, radio procedures, weather, navigation, aerodynamics, and Federal Aviation Administration regulations.

**AIRP 1451 Instrument Ground School (3-2-4)** A study of basic instrument radio and navigation fundamentals used in instrument flight. Topics include a description and practical use of navigation systems and instruments, charts used for instrument flight, and Federal Aviation Administration regulations. Qualifies as part of a program leading to Federal Aviation Administration certification.

**AIRP 1471 Helicopter Instrument Ground School (3-2-4)** A study of basic instrument radio and navigation fundamentals used in instrument helicopter flight. Topics include a description and practical use of navigation systems and instruments, charts used for instrument flight, and Federal Aviation Administration regulations. Qualifies as part of a program leading to Federal Aviation Administration certification.

**AIRP 2172 Flight Instructor-Instrument Helicopter (0-3-1)** Skill development in the fundamentals of teaching and learning in a helicopter oriented environment. Introduction to the techniques of instruction and analysis of helicopter flight maneuvers. Topics include helicopter flight instructor responsibilities and Federal Aviation Regulations relating to the instructor rating.

**AIRP 2175 Human Factors in Aviation (1-0-1)** Instruction in flight physiology, the decision-making process, pilot health maintenance, psychological aspects of flight, human behavior as related to the aircraft flight deck, and aeromedical information of significance to flight crews.

**AIRP 2236 Certified Flight Instructor - Flight (0-5-2)** Flight and ground instruction required to qualify for the Federal Aviation Administration Certified Flight Instructor - Airplane certificate. Prerequisite: AIRP 2239

**AIRP 2239 Commercial Flight (0-5-2)** Flight instruction necessary to qualify for the Federal Aviation Administration Commercial Pilot Certificate. Instruction includes both dual and solo flight training to prepare the student to perform commercial pilot maneuvers. Prerequisite: AIRP 2250

**AIRP 2250 Instrument Flight (0-5-2)** Preparation for completion of the Federal Aviation Administration Instrument Pilot Rating with mastery of all instrument flight procedures. Prerequisite: AIRP 1215

**AIRP 2251 Multiengine Flight (0-5-2)** Preparation for the multiengine class rating which will be added to a current pilot certificate. Includes explanation and demonstration of all required Federal Aviation Administration normal and emergency operations and procedures. Prerequisite: AIRP 1215

**AIRP 2274 Helicopter Certified Flight Instructor (0-5-2)** Helicopter flight and ground school instruction required to qualify for the Federal Aviation Administration Certified Flight Instructor-Helicopter certificate. Prerequisite: AIRP 2273

**AIRP 2275 Agricultural Aircraft Operations Flight (0-5-2)** Flight and ground training to prepare the student for safe agricultural aerial application operations. The student will meet requirements for 14 CFR 137.19(e) upon completion of the course.

**AIRP 2331 Advanced Meteorology (3-0-3)** Preparation for advanced aviation students to apply knowledge of varying meteorological factors including weather hazards to flight, techniques for minimizing weather hazards, and aviation weather services.

**AIRP 2337 Commercial Ground School (3-0-3)** A study of advanced aviation topics used for Federal Aviation Administration certification at the commercial pilot level. Includes preparation for the Federal Aviation Administration Commercial Airplane Practical test.

**AIRP 2349 Instructor Ground School (2-2-3)** Skill development in the fundamentals of teaching and learning in an aviation- oriented environment. Introduction to the techniques of instruction and analysis of flight maneuvers. Topics include flight instructor responsibilities and Federal Aviation Regulations relating to the instructor rating.

**AIRP 2355 Propulsion Systems (3-1-3)** In-depth coverage of aircraft engine theory and principles of operation of various types of aircraft engines. Topics include propellers, superchargers, engine accessories, controls, and instrumentation.

**AIRP 2370 Helicopter Systems (2-2-3)** Study of helicopter general principles, operation, and application of pneumatic, hydraulic, electrical, fuel, environmental, protection, and warning systems found in helicopters. Emphasis on subsystems, control, and rotor systems.

**AIRP 2371 Helicopter Instructor Ground School (2-2-3)** Skill development in the fundamentals of teaching and learning in a helicopter oriented environment. Introduction to the techniques of instruction and analysis of helicopter flight maneuvers. Topics include helicopter flight instructor responsibilities and Federal Aviation Regulations relating to the instructor rating.

**AIRP 2375 Agricultural Aircraft Operations Ground School (3-1-3)** A study of aerial application techniques as it applies to aiding the agricultural industry. Topics include aerial application maneuvers, agricultural aviation GPS systems, regulations applicable to aerial application, and aerial application dispersal equipment. Includes preparation for the Texas Department of Agriculture Commercial Pesticide Applicator License exams.

**AIRP 2376 Helicopter Propulsion Systems (3-1-3)** In-depth coverage of aircraft engine theory and principles of operation of various types of helicopter engines. Topics include engine components, rotors, engine accessories, engine controls, and helicopter engine instrumentation to include glass cockpit instrumentation.

**AIRP 2452 Practical Dispatching I (3-2-4)** Study of advanced concepts in weight and balance, performance calculations, avionics, and engine and airplane specifications including Federal Aviation regulations. Preparation for the Federal Aviation Administration Aircraft Dispatcher written examination.

**AIRP 2453 Practical Dispatching II (3-2-4)** A study of the duties and responsibilities required of an aircraft dispatcher. Topics include instruction in Federal Aviation Administration regulations, flight planning, and company operations for both domestic and international operations. Preparation for the Federal Aviation Administration Practical Test.

## ARCE

**ARCE 1303 Architectural Materials and Methods of Construction (2-2-3)** Properties, specifications, vendor references, and uses of materials as related to architectural systems of structures.

**ARCE 1321 Architectural Illustration (2-4-3)** Architectural drawing and sketching. Emphasizes architectural structures in 3-D or pictorially either by hand or computer software. Prerequisite: DFTG 1317

**ARCE 1342 Codes, Specifications, and Contract Documents (2-3-3)** Study of ordinances, codes, and legal documents as they relate to specifications and drawing. Discussion of owner-architect-contractor responsibilities, duties, and legal relationships.

**ARCE 1352 Structural Drafting (2-4-3)** A study of structural systems including concrete foundations and frames, wood framing and trusses, and structural steel framing systems. Includes detailing of concrete, wood, and steel to meet industry standards including the American Institute of Steel Construction and The American Concrete Institute.

**ARCE 2352 Mechanical and Electrical Systems (2-4-3)** The properties of building materials (assemblies), specifications, codes, vendor references, and uses of mechanical, plumbing, conveying, and electrical systems as they relate to architecture for residential and commercial construction. Prerequisite: DFTG 2328 DFTG 2331

## ARTC

**ARTC 1302 Digital Imaging I (2-4-3)** Digital imaging using raster image editing and/or image creation software: scanning, resolution, file formats, output devices, color systems, and image-acquisitions.

**ARTC 1305 Basic Graphic Design (2-4-3)** Graphic design with emphasis on the visual communication process. Topics include basic terminology and graphic design principles.

**ARTC 1310 Design Concepts (2-4-3)** Fundamental techniques in conceptualizing. Includes all procedures from initial research to creating strategies to finalize a solution.

**ARTC 1313 Digital Publishing I (2-4-3)** The fundamentals of using digital layout as a primary publishing tool and the basic concepts and terminology associated with typography and page layout. Prerequisite: ARTC 1305 or ARTC 1302

**ARTC 1317 Design Communication I (2-4-3)** Study of design development relating to graphic design terminology, tools and media, and layout and design concepts. Topics include integration of type, images and other design elements, and developing computer skills in industry standard computer programs.

**ARTC 1349 Art Direction I (2-4-3)** Creation of projects in art direction for advertising graphic campaigns for products, services, or ideas. Topics include all campaign procedures from initial research and creative strategy to final execution and presentation of a comprehensive project. Prerequisite: GRPH 1359 ARTC 1313

**ARTC 1359 Visual Design for New Media (2-4-3)** Visual design elements as they relate to new media. Emphasizes aesthetics and visual problem-solving such as typographic issues, color management, hierarchy of information, image optimization, and effective layout. Prerequisite: ARTC 2313

**ARTC 2305 Digital Imaging II (2-4-3)** Principles of digital image processing and digital painting. Emphasis on raster-based imaging and the creative aspects of electronic illustration for commercial or fine art applications. Prerequisite: ARTC 1302

**ARTC 2313 Digital Publishing II (2-4-3)** Includes layout procedures from thumbnails and roughs to final comprehensive and print output. Emphasis on design principles for the creation of advertising and publishing materials, and techniques for efficient planning and documenting projects. Prerequisite: ARTC 1313

**ARTC 2317 Typographic Design (2-4-3)** Exploration of typographic design including computer generated letterforms as elements of design. Includes theory and techniques of traditional, contemporary, and experimental typography. Prerequisite: ARTC 1302 ARTC 1305

**ARTC 2333 Publication Design (2-4-3)** Development of skills and advanced knowledge of publishing software, with emphasis on the maintenance of visual continuity in documents for publication.

**ARTC 2335 Portfolio Development for Graphic Design (2-4-3)** Preparation of a portfolio comprised of completed graphic design projects. Evaluation and demonstration of portfolio presentation methods based on the student's specific area of study.

**ARTC 2347 Design Communication II (2-4-3)** An advanced study of the design process and art direction. Emphasis on form and content through the selection, creation, and integration of typographic, photographic, illustrative, and design elements. Prerequisite: ARTC 1317 or ARTC 1302

**ARTC 2349 Art Direction II (2-4-3)** Mastery of advanced art direction projects with emphasis on selected topics in advertising campaigns. Includes written, oral, and visual skills. Prerequisite: ARTC 1349 ARTC 2313

**ARTC 2388 Internship - Commercial and Advertising Art (0-0-3)** A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer.

## ARTV

**ARTV 1345 3-D Modeling and Rendering I (2-4-3)** Techniques of three-dimensional (3-D) modeling utilizing industry standard software. Includes the creation and modification of 3-D geometric shapes, use of a variety of rendering techniques, camera, light sources, texture, and surface mapping.

**ARTV 1351 Digital Video (2-4-3)** Producing and editing video and sound for multimedia or web productions. Emphasizes capture, editing, and outputting of video using a digital video workstation.

**ARTV 2341 Advanced Digital Video (2-4-3)** Advanced digital video techniques for post-production. Emphasizes integration of special effects and animation for film, video, and the Internet. Exploration of new and emerging compression and video streaming technologies. Prerequisite: ARTV 1351

**ARTV 2345 3-D Modeling and Rendering II (2-4-3)** A studio course focused on advanced 3-D modeling and rendering techniques using industry standard software, modeling techniques, camera settings, lighting, and surfacing to develop detailed environments. Prerequisite: ARTV 1351

## AUMT

**AUMT 1166 Practicum (or Field Experience) - Automobile/Automotive Mechanics Technology/Technician (0-0-1)** Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

**AUMT 1201 Introduction and Theory of Automotive Technology (1-3-2)** An introductory overview of the automotive service industry including history, safety practices, shop equipment and tools, vehicle subsystems, service publications, professional responsibilities, and automobile maintenance.

**AUMT 1305 Introduction to Automotive Technology (2-4-3)** An introduction to the automotive industry including automotive history, safety practices, shop equipment and tools, vehicle subsystems, service publications, professional responsibilities, and basic automotive maintenance. May be taught manufacturer specific.

**AUMT 1307 Automotive Electrical Systems (2-4-3)** An overview of automotive electrical systems including topics in operational theory, testing, diagnosis, and repair of, charging and starting systems, and electrical accessories. Emphasis on electrical principles schematic diagrams, and service manuals. May be taught manufacturer specific.

**AUMT 1310 Automotive Brake Systems (2-4-3)** Operation and repair of drum/disc type brake systems. Topics include brake theory, diagnosis, and repair of power, manual, anti-lock brake systems, and parking brakes. May be taught with manufacturer specific instructions.

**AUMT 1312 Basic Automotive Service (2-4-3)** Basic automotive service. Includes compliance with safety and hazardous material handling procedures and maintenance of shop equipment.

**AUMT 1345 Automotive Climate Control Systems (2-4-3)** Diagnosis and repair of manual/electronic climate control systems. Includes the refrigeration cycle and EPA guidelines for refrigerant handling. May be taught manufacturer specific.

**AUMT 1416 Automotive Suspension and Steering Systems (2-6-4)** Diagnosis and repair of automotive suspension and steering systems including electronically controlled systems. Includes component repair, alignment procedures and tire and wheel service. May be taught manufacturer specific.

**AUMT 1419 Automotive Engine Repair (2-6-4)** Fundamentals of engine operation, diagnosis and repair. Emphasis on identification, inspection, measurements, and disassembly, repair, and reassembly of the engine. May be taught manufacturer specific. Prerequisite: AUMT 1305

**AUMT 2188 Internship (or Field Experience) - Automobile/Automotive Mechanics Technology/Technician (0-0-1)** A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer.

**AUMT 2289 Internship (or Field Experience) - Automobile/Automotive Mechanics Technology/Technician (0-0-2)** A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Prerequisite: AUMT 2313, AUMT 2417, AUMT 2321

**AUMT 2302 Automotive Compression Ignition Engines & Fuel Systems (2-4-3)** Diagnosis and repair of modern light-duty automotive compression ignition engines and related systems. Includes the use of advanced engine performance diagnostic equipment. Prerequisite: AUMT 2417

**AUMT 2321 Automotive Electrical Diagnosis and Repair (2-4-3)** Repair of automotive electrical subsystems, lighting, instrumentation, and accessories. Emphasis on accurate diagnosis and proper repair methods using various troubleshooting skills and techniques. May be taught manufacturer specific.

**AUMT 2328 Automotive Service (2-4-3)** Mastery of automotive service including competencies covered in related courses. May be taught manufacturer specific. Prerequisite: AUMT 2413 AUMT 2417 AUMT 2321

**AUMT 2337 Automotive Electronics (2-4-3)** Study of electronic principles applied to microcomputers and communication systems. Includes digital fundamentals, and use of electronic test equipment. May be taught manufacturer specific. Prerequisite: AUMT 2413 AUMT 2417 AUMT 2321

**AUMT 2357 Automotive Alternative Fuels (2-4-3)** A study of the composition and use of various alternative automobile fuels including retrofit procedures and applications, emission standards, availability, and cost effectiveness. Overview of federal and state regulations concerning fuels.

**AUMT 2407 Hybrid Systems Diagnostics (2-6-4)** An advanced study of hybrid vehicles and the unique characteristics of hybrid systems. Includes hybrid safety procedures and diagnosis and repair of hybrid systems.

**AUMT 2413 Automotive Drive Train and Axles (2-6-4)** A study of automotive clutches, clutch operation devices, manual transmissions/ transaxles, and differentials with emphasis on diagnosis and repair. May be taught with manufacturer specific instructions. Prerequisite: AUMT 1310

**AUMT 2417 Automotive Engine Performance Analysis I (2-6-4)** Theory, operation, diagnosis of drivability concerns, and repair of ignition and fuel delivery systems. Use of current engine performance diagnostic equipment. May be taught with manufacturer specific instructions.

**AUMT 2425 Automotive Automatic Transmission and Transaxle (2-6-4)** A study of the operation, hydraulic circuits and electronic controls of modern automatic transmissions and automatic transaxles. Diagnosis, disassembly, and assembly procedures with emphasis on the use of special tools and repair techniques. May be taught manufacturer specific. Prerequisite: AUMT 2413 AUMT 2417 AUMT 2321

**AUMT 2434 Automotive Engine Performance Analysis II (2-6-4)** Diagnosis and repair of emission systems, computerized engine performance systems, and advanced ignition and fuel systems. Includes use of advanced engine performance diagnostic equipment. May be taught manufacturer specific. Prerequisite: AUMT 2413 AUMT 2417 AUMT 2321

**AUMT 2470 Automotive Compression Ignition Engines & Fuel Systems (2-6-4)** Diagnosis and repair of modern light-duty automotive compression ignition engines, air induction systems, fuel systems, and exhaust after treatment systems. Emphasis is placed on the differences between diagnosis and repair of spark-ignition engine systems and compression ignition engine systems.

## AVIM

**AVIM 1371 Control Tower I (2-3-3)** The course will introduce the student to terminal air traffic control (ATC) ground control and limited local control. Students will receive further instruction on flight data processing, information handling, Federal Aviation Administration separation standards, controller techniques, controller to pilot and controller to controller communications. The course will include tabletop and high definition ATC simulation and remote pilot operator training. Prerequisite: AVIM 1470

**AVIM 1375 Introduction to Terminal Operations (2-2-3)** This course will provide students with fundamentals of radar operations in a terminal environment. Students will learn terminal radar team position responsibilities. They will learn and be required to demonstrate the application of various separation minima, altitude assignments, clearances, strip marking and phraseology, providing for positive control. Instruction and lab exercises will include, but not be limited to, radar identification, vectoring techniques, merging target procedures, radar separation as well as speed control and beacon code assignment. Prerequisite: AVIM 1470 or AVIM 1270

**AVIM 1376 Enroute Operations II (2-2-3)** This course will provide students with fundamentals of radar operations in the enroute environment. Students will learn enroute team position responsibilities and be required to demonstrate the application of various separation minima, altitude assignments, clearances, strip marking and phraseology, providing for positive control. This will include, but not be limited to, radar identification, vectoring techniques, merging target procedures, radar separation as well as speed control and beacon code assignment. The course will also introduce the student to Traffic Management and its purpose in the National Airspace System. Prerequisite: AVIM 1377

**AVIM 1377 Enroute Operations I (2-2-3)** This course introduces students to air traffic control non-radar procedures, techniques, and rules. Included are aircraft communication, airspace management, non-radar separation standards for arrivals, departures and over flight traffic. Prerequisite: AVIM 1470 or AVIM 1270

**AVIM 1470 Fundamentals of Air Traffic Control (4-0-4)** This course introduces the student to transportation management through a time based separation of vehicles. An overview of the organization of the Federal Aviation Administration, an introduction to the FAAO JO 7110.65, terms of reference, general control, flight data management, radio and interphone communications, the air traffic service route and NAVAID's used to manage the air traffic system. The course also includes the application of weather information in the air traffic system, altimeter settings, and automatic terminal information service procedures. The course will conclude with an introduction to clearance delivery procedures.

**AVIM 2270 Control Tower Operations (2-0-2)** This course will provide students with a comprehensive review of airport traffic control procedures, flight rules, communications procedures, flight assistance service, aviation weather, air navigation, aids to air navigation, and enroute procedures that students are required to know to pass the written portion of the FAA control tower operator exam. Prerequisite: AVIM 2372 AVIM 1375

**AVIM 2337 Aviation Law (3-0-3)** A study of domestic and international aviation law.

**AVIM 2372 Control Tower II (2-3-3)** Build on student understanding of terminal air traffic control through lecture and lab simulation of Air Traffic Control problems. Emphasize Air Traffic Control operations in and around a simulated Class D airport. Develop controller-controller coordination and communications with emphasis on accurate situation assessment, and specific Air Traffic Control methodology and problem-solving techniques. Prerequisite: AVIM 1371

**AVIM 2373 Advanced Terminal Operations (2-3-3)** Provide a thorough review of all course objectives to verify student knowledge and student readiness to continue training at the Federal Aviation Administration Air Traffic Control Academy. Reviews will include clearance procedures, pilot to controller communications and coordination, phraseology, data handling, strip marking, aircraft recognition and advanced air traffic control simulation. Prerequisite: AVIM 2372 AVIM 1375.

## AVNC

**AVNC 1303 Introduction to Aviation Electronic Systems (3-0-3)** An introduction to the relationship between aviation electronic systems and aircraft flight and navigational systems with emphasis on the operation and function of the systems.

**AVNC 1306 FAA Regulations for Avionics Certified Repair Station (3-0-3)** This course provides practical experience in the day-to-day operations of a Federal Aviation Administration Certified Repair Station. Students will perform tasks which will include completion of repair station and FAA forms and records, maintenance of technical data and servicing equipment.

**AVNC 1343 Aviation Electrical and Electronic Systems Installation (2-4-3)** A comprehensive study of and practical experience in the installation of avionic systems in aircraft, mounting electronic equipment, construction and installation of electrical wiring and cables, proper use of tools, selection of materials, and safety.

**AVNC 1353 Operational Testing of Aviation Electronic Systems (2-4-3)** Operation of ramp test equipment in common usage to test avionic systems. Emphasis on performance of functional checks of aviation electronic systems and any safety concerns.

**AVNC 1391 Installation & Operational Testing of Avionics & Pitot-Static Systems (2-4-3)** A practical experience in the planning and execution, and testing of avionics and pitot-static installations. Advanced test equipment will be used where required.

**AVNC 2304 Foundations in Avionics Equipment Component Level Repairs (2-4-3)** In-depth study of common circuit designs found in modern avionics equipment as well as a study of the electronics theory needed to troubleshoot these circuits.

**AVNC 2308 Aviation Electrical and Electronics Systems Installation II (2-4-3)** A continuation of AVNC 1343. This course is designed as a study of practical experience in the installation of avionics systems in aircraft, mounting electronic equipment, construction and installation of electrical wiring and cables, proper use of tools, and selection of materials.

**AVNC 2345 Aviation Navigational Equipment Component Level Repair (2-4-3)** Skills development in component level repair of modern aviation navigational systems including Very High Frequency Omni Range (VOR) and Instrument Landing Systems (ILS). Emphasis on equipment block diagram and specialized test equipment will be covered in detail.

**AVNC 2350 Aviation Pulsed RF Equipment Component Level Repair (2-4-3)** Skills development in component level repair of modern aviation pulsed Radio Frequency (RF) systems. Emphasis on equipment block diagram and specialized test equipment will be covered.

**AVNC 2355 Advanced Aviation Electronics Troubleshooting (2-4-3)** A capstone course designed for students to demonstrate acquired knowledge of avionics systems as well as display techniques required to troubleshoot those systems. The student will face component level repair scenarios.

**AVNC 2357 Aviation Communication Component Level Repair (2-4-3)** Skills development in component level repair of modern aviation communications and audio equipment. Emphasis on equipment block diagram and specialized test equipment will be covered.

## BIOM

**BIOM 1101 Biomedical Equipment Technology (1-0-1)** Introduction to current biomedical job responsibilities, salaries, and classifications in the health care industry.

**BIOM 1270 Shop Skills for Biomedical Equipment Technicians (1-4-2)** Skill development in the common repair tools and repair techniques used by the Biomedical Equipment Technician in the healthcare.

**BIOM 1291 Special Topics in Biomedical Engineering-Related Technology/Technician (1-4-2)** A study of the theory, principles and application of the effective administration of technology in the Health care environment with emphasis on the practical understanding of current technology trends and their implications on health care. Topics include codes/standards, computer networks, technology administration/integration and the effective servicing of technology.

**BIOM 1309 Applied Biomedical Equipment Technology (2-4-3)** Introduction to biomedical instrumentation as related to anatomy and physiology. Includes medical devices for monitoring, diagnosis, and treatment of anatomical systems.

**BIOM 1315 Medical Equipment Networks (2-4-3)** Identification of basic principles of medical equipment networking. Hardware, software, and connectivity issues of medical equipment in healthcare facilities will be covered.

**BIOM 1341 Medical Circuits/Troubleshooting (2-4-3)** Development of skills in troubleshooting of medical electronic circuits and utilization of test equipment. Prerequisite: CETT 1303 CETT 1305

**BIOM 1350 Diagnostic Ultrasound Imaging System (2-4-3)** Diagnostic ultrasound imaging systems. Covers basic systems troubleshooting and problem-solving. Prerequisite: CETT 1303 CETT 1305

**BIOM 1355 Medical Electronic Applications (2-4-3)** Presentation of sensors, transducers, and supporting circuits used in medical instrumentation devices. Prerequisite: BIOM 2301

**BIOM 2215 Physiological Instruments I (1-4-2)** Theory of operation, circuit analysis, and troubleshooting physiological instruments. Prerequisite: BIOM 2301

**BIOM 2231 Biomedical Clinical Instrumentation (1-4-2)** A study of theory, application, and principles of operation of instruments commonly used in a medical laboratory.

**BIOM 2239 Physiological Instruments II (1-4-2)** Graphic display recording devices. Includes defibrillators and multi-purpose diagnostic equipment. Prerequisite: BIOM 2301

**BIOM 2301 Safety in Health Care Facilities (2-4-3)** Study of codes, standards and management principles related to biomedical instrumentation. Emphasizes application of safety test equipment, preventive maintenance procedures, and documentation of work performed. Prerequisite: CETT 1303 CETT 1305

**BIOM 2311 General Medical Equipment I (2-4-3)** Analysis of selected current paths from a larger schematic. Discussion of equipment and disassembly and reassembly of equipment. Prerequisite: CETT 1303 CETT 1305

**BIOM 2319 Fundamentals of X-Ray and Medical Imaging Systems (2-4-3)** Radiation theory and safety hazards, fundamental circuits, and application of X-ray systems including circuit analysis and troubleshooting. Prerequisite: CETT 1303 CETT 1305

**BIOM 2333 Digital Radiography (2-4-3)** General principles of digital radiography systems. Fundamentals of problem-solving, troubleshooting, and analysis of image quality are emphasized. Prerequisite: BIOM 2319

**BIOM 2343 General Medical Equipment II (2-4-3)** Theory and principles of operation of a variety of basic electro-mechanical equipment with emphasis on repair and service of actual medical equipment. Prerequisite: BIOM 2301

**BIOM 2345 Advanced Imaging Systems (2-4-3)** Principles of operation and repair of computerized tomography (CT), magnetic resonance imaging (MRI), single photon emission computerized tomography, and other advanced imaging modalities. Prerequisite: BIOM 2319

**BIOM 2347 RF/X-Ray System (2-4-3)** Principles of radiographic and fluoroscopic systems. Prerequisite: BIOM 2319

**BIOM 2388 Internship - Biomedical Technology/Technician (0-0-3)** A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer.

## BMGT

**BMGT 1305 Communications in Management (2-2-3)** Basic theory and processes of communication skills necessary for the management of an organization's workforce.

**BMGT 1309 Information and Project Management (2-4-3)** Critical path methods for planning and controlling projects. Includes time/cost tradeoffs, resource utilization, stochastic considerations, task determination, time management, scheduling management, status reports, budget management, customer service, professional attitude, and project supervision.

**BMGT 1313 Principles of Purchasing (2-2-3)** The purchasing process as it relates to such topics as inventory control, price determination, vendor selection, supply chain management, negotiation techniques, and ethical issues in purchasing.

**BMGT 1327 Principles of Management (2-2-3)** Concepts, terminology, principles, theories, and issues in the field of management.

**BMGT 2303 problem-solving and Decision-Making (2-2-3)** Decision-making and problem-solving processes in organizations utilizing logical and creative problem-solving techniques. Application of theory is provided by experiential activities using managerial decision tools.

**BMGT 2347 Critical Thinking and problem-solving (2-2-3)** Interpreting data for problem-solving and recommending corrective action. Emphasis on a structured approach to critical thinking and problem-solving in a team environment.

## BUSG

**BUSG 1302 E-Business Management (2-4-3)** Introduction to business. Includes the internet, infrastructure for electronic commerce, markup languages, web-based tools and software, security issues, and electronic payment systems. Also covers strategies for marketing, sales, and purchasing; legal, ethical, and tax issues; and management functions.

**BUSG 1315 Small Business Operations (2-2-3)** Operating a small business. Emphasizes management functions including planning, leading, organizing, staffing, and controlling operations.

## CBFM

**CBFM 1303 Boiler Maintenance (2-2-3)** Boiler maintenance procedures with emphasis on the various components associated with boilers.

## CDEC

**CDEC 1318 Wellness of the Young Child (2-3-3)** Factors impacting the well-being of young children. Includes healthy behavior, food, nutrition, fitness, and safety practices. Focuses on local and national standards and legal implications of relevant policies and regulations. Course content is aligned with State Board of Educator Certification Pedagogy and Professional Responsibilities standards. Requires students to participate in a minimum of 16 hours field experience with children from infancy through age 12 in a variety of settings with varied and diverse populations.

**CDEC 1321 The Infant and Toddler (3-0-3)** A study of appropriate infant and toddler programs (birth to age 3), including an overview of development, quality routines, learning environments, materials and activities, and teaching/guidance techniques.

**CDEC 1356 Emergent Literacy for Early Childhood (2-4-3)** An exploration of principles, methods, and materials for teaching language and literacy through a play-based integrated curriculum to children from birth through age eight.

**CDEC 1359 Children with Special Needs (2-4-3)** A survey of information regarding children with special needs including possible causes and characteristics of exceptionalities, intervention strategies, available resources, referral processes, the advocacy role, and legislative issues.

**CDEC 2340 Instructional Techniques for Children with Special Needs (2-4-3)** Exploration of development and implementation of curriculum for children with special needs.

## CETT

**CETT 1303 DC Circuits (2-4-3)** A study of the fundamentals of direct current including Ohm's law, Kirchhoff's laws and circuit analysis techniques.

**CETT 1305 AC Circuits (2-4-3)** A study of the fundamentals of alternating current including series and parallel AC circuits, phasors, capacitive and inductive networks, transformers, and resonance. Prerequisite: CETT 1303 or IEIR 1302

**CETT 1307 Fundamentals of Electronics (2-4-3)** Applies concepts of electricity, electronics, and digital fundamentals; supports programs requiring a general knowledge of electronics.

**CETT 1321 Electronic Fabrication (2-4-3)** A study of electronic circuit fabrication techniques including printed circuit boards, wire wrapping, bread boarding, and various soldering techniques.

**CETT 1325 Digital Fundamentals (2-4-3)** An entry level course in digital electronics to include numbering systems, logic gates, Boolean algebra, and combinational logic.

**CETT 1329 Solid State Devices (2-4-3)** A study of diodes, transistor characteristics and other semiconductor devices, including analysis of static and dynamic characteristics, biasing techniques, and thermal considerations. Prerequisite: CETT 1305 IEIR 1371 or IEIR 1304

**CETT 1331 Programming for Discrete Electronic Devices (2-4-3)** Introduction to a high level programming language. Includes structured programming and problem-solving applicable to discrete electronic devices.

**CETT 1341 Solid State Circuits (2-4-3)** A study of various semiconductor devices incorporated in circuits and their applications. Emphasis on circuit construction, measurements, and analysis. Prerequisite: CETT 1305

**CETT 1349 Digital Systems (2-4-3)** A course in electronics covering digital systems. Emphasis on application and troubleshooting digital systems. Prerequisite: IEIR 1371 or CETT 1302

**CETT 1357 Linear Integrated Circuits (2-4-3)** A study of the characteristics, operations, and testing of linear integrated circuits. Applications include instrumentation and active filtering. Prerequisite: CSIR 2301

**CETT 2339 Amplifier Analysis (2-4-3)** Advanced study of electronic amplifier applications. Prerequisite: CSIR 2301

**CETT 2449 Research and Project Design (2-6-4)** Principles of electrical/electronic design, encompassing schematics wiring diagrams, materials lists, operating characteristics, completion schedules, and cost estimates.

## CHEF

**CHEF 1205 Sanitation and Safety (1-2-2)** A study of personal cleanliness; sanitary practices in food preparation; causes, investigation, control of illness caused by food contamination (Hazard Analysis Critical Control Points); and work place safety standards.

**CHEF 1314 A La Carte Cooking (2-4-3)** A course in a la carte or "cooking to order" concepts. Topics include menu and recipe interpretation and conversion, organization of work station, employment of appropriate cooking methods, plating, and saucing principles.

**CHEF 1340 Meat Preparation and Cooking (2-4-3)** Study of the preparation, storage, and cooking techniques for beef, pork, lamb, poultry, seafood, and game. Includes moist, dry, and combination heat preparation methods as related to both classical and modern methods of preparation of dishes. Prerequisite: IFWA 1401

**CHEF 1391 Special Topics in Culinary Arts/Chef Training (2-4-3)**  
An introduction to nutrition including nutrients, digestion and metabolism, menu planning, recipe modification, dietary guidelines and restrictions, diet and disease, and healthy cooking techniques.

**CHEF 1401 Basic Food Preparation (2-6-4)** A study of the fundamental principles of food preparation and cookery to include Brigade System, cooking techniques, material handling, heat transfer, sanitation, safety, nutrition, and professionalism.

**CHEF 1441 American Regional Cuisine (2-6-4)** A study of the development of regional cuisine's in the United States with emphasis on the similarities in production and service systems. Application of skills to develop, organize, and build a portfolio of recipe strategies and production systems. Prerequisite: IFWA 1427 PSTR 2431

**CHEF 1445 International Cuisine (2-6-4)** The study of classical cooking skills associated with the preparation and service of international and ethnic cuisines. Topics include similarities between food production systems used in the United States and other regions of the world. Prerequisite: IFWA 1427 PSTR 2431

## CJSA

**CJSA 1325 Criminology (3-0-3)** Current theories and empirical research pertaining to crime and criminal behavior and its causes, methods of prevention, systems of punishment, and rehabilitation.

**CJSA 1393 Special Topics in Criminal Justice Studies (2-4-3)** Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency.

## CNBT

**CNBT 1300 Residential and Light Commercial Blueprint Reading (2-4-3)** Introductory blueprint reading for residential and light commercial construction.

**CNBT 1302 Mechanical, Plumbing & Electrical Systems in Construction I (2-4-3)** A presentation of the basic mechanical, plumbing, and electrical components in construction and their relationship to residential and light commercial buildings.

**CNBT 1313 Concrete I (2-4-3)** Various techniques for concrete utilization in residential and light commercial construction.

**CNBT 1315 Field Engineering I (2-4-3)** Surveying equipment, sketches, proper field note taking, methods of staking, layout of building site, and horizontal and vertical controls.

**CNBT 1316 Construction Technology I (2-4-3)** Introduction to site preparation, foundations, form work, safety, tools, and equipment.

**CNBT 1342 Building Codes and Inspections (2-4-3)** Building codes and standards applicable to building construction and inspection processes.

**CNBT 1346 Construction Estimating I (2-4-3)** Building codes and standards applicable to building construction and inspection processes.

**CNBT 1350 Construction Technology II (2-4-3)** Framing in residential and light commercial construction. Includes safety, tools, and equipment used in floor, wall, ceiling, and roof framing methods and systems.

**CNBT 1359 Project Scheduling (2-4-3)** A study of conventional scheduling using critical-path-method; precedence and arrow networks; bar charts; monthly reports; and fast track scheduling.

**CNBT 1680 Cooperative Education - Construction Engineering Technology/Technician (1-0-6)** Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

**CNBT 2317 Green Building (2-4-3)** Methods and materials used for buildings that conserve energy, water, and human resources.

**CNBT 2337 Construction Estimating II (2-4-3)** Advanced estimating concepts using computer software for construction and crafts.

**CNBT 2339 Construction Technology IV (2-4-3)** Interior finish for residential and light commercial construction.

**CNBT 2342 Construction Management I (2-4-3)** Management skills on the job site. Topics include written and oral communications, leadership and motivation, problem-solving, and decision-making.

**CNBT 2344 Construction Management II (2-4-3)** A management course in contract documents, safety, planning, scheduling, production control, law and labor issues. Topics include contracts, planning, cost and production peripheral documents, and cost and work analysis.

## CPMT

**CPMT 1304 Microcomputer System Software (2-4-3)** Skill development in the installation, configuration, maintenance and troubleshooting of system software in microcomputers.

**CPMT 1307 Electronic and Computer Skills (2-4-3)** A study of electronic construction techniques using common hand tools in disassembly, repair, and re-assembly of electronics and computer components.

**CPMT 1311 Introduction to Computer Maintenance (2-4-3)** Introduction to the installation, configuration, and maintenance of a microcomputer system.

**CPMT 1345 Computer Systems Maintenance (2-4-3)** A study of the components within a computer system. Development of testing and troubleshooting skills.

**CPMT 1347 Computer System Peripherals (2-4-3)** Theory and practices involved in computer peripherals, operation and maintenance techniques, and specialized test equipment. Prerequisite: CPMT 1311 or ITSC 1325

**CPMT 1349 Computer Networking Technology (2-4-3)** Networking fundamentals, terminology, hardware, software, and network architecture. Includes local and wide area networking concepts and networking installations and operations.

**CPMT 1371 Introduction to MAC Operating Systems (2-4-3)** Introduction to MAC operating systems including installation, configuration, file management, memory and storage management, control of peripheral devices, and use of utilities. Emphasizes hands-on setup, administration, and management of a MAC computer system in a networked environment.

**CPMT 2302 Home Technology Integration (2-4-3)** A study of integration and maintenance of various home technology subsystems. Includes home automation, security and surveillance, home networks, video and audio networks, and structured wiring.

**CPMT 2333 Computer Integration (2-4-3)** Integration of hardware, software, and applications. Customization of computer systems for specific applications such as engineering, multimedia, or data acquisition. Prerequisite: ITSC 1321 CPMT 1345

**CPMT 2345 Computer System Troubleshooting (2-4-3)** Principles and practices involved in computer system troubleshooting techniques and repair procedures including advanced diagnostic test programs and the use of specialized test equipment. Prerequisite: CPMT 1345

**CPMT 2350 Industry Certification Preparation (2-4-3)** Overview of the objectives for industry specific certification exam(s). Prerequisite: CPMT 1345 CPMT 1347

**CPMT 2370 Home Automation (2-4-3)** This course is designed to provide skills and knowledge necessary for the design, installation, and maintenance of home automation equipment. Emphasis is placed on lighting, appliance, and heating, ventilation and air conditioning (HVAC) controls. Prerequisite: CPMT 2302

**CPMT 2371 Audio/Video Networks (2-4-3)** This course is designed to provide the skills necessary to design, install, and maintain audio and video networks. Emphasis will be placed on residential audio systems, video networks, and other related home entertainment equipment. Prerequisite: CPMT 2302

## CSIR

**CSIR 1341 Transceiver Troubleshooting I (2-4-3)** Practice in performing testing procedures and troubleshooting radio communications systems.

**CSIR 1344 General Communication Circuits I (2-4-3)** The basic theory of operation and troubleshooting of communication circuits used in radio communication electronics systems.

**CSIR 1355 Industry Certifications (2-4-3)** Preparation for the certifications required by industry. Prerequisite: IEIR 1371 OR CETT 1302

**CSIR 1359 Digital Data Communications (2-4-3)** Introduction to the theory and troubleshooting skills needed in the digital data communication field. Prerequisite: CPMT 2302

**CSIR 2301 Communication Electronics Components (2-4-3)** Introduction to the theory of vacuum tubes and solid-state devices. Prerequisite: IEIR 1371 or CETT 1302

## CTEC

**CTEC 1113 Introduction to Chemical Technology (0-2-1)** Introduction to the educational and professional requirements of the chemical technician. Topics include safety, industrial site visits, chemical literature, and computer applications.

**CTEC 1205 Chemical Calculations I (0-4-2)** Calculations related to general chemistry emphasizing industry related laboratory skills and competencies.

**CTEC 1206 Chemical Calculations II (0-4-2)** Calculations related to general chemistry emphasizing industry related laboratory skills and competencies. Prerequisite: SCIT 1415

**CTEC 1345 Chemical Laboratory Safety (2-3-3)** Study of the safety problems encountered in the operation of a chemical laboratory. Topics include chemical and safety regulations, chemical hygiene plans, and safe laboratory procedures.

**CTEC 1441 Applied Instrumental Analysis I (2-6-4)** Principles of instrumental chemical analysis that includes chromatography, spectroscopy, and electroanalytical chemistry. Prerequisite: SCIT 1543

**CTEC 2333 Comprehensive Studies in Chemical Technology (2-4-3)** Course requiring a special laboratory research project.

**CTEC 2431 Applied Instrumental Analysis II (3-3-4)** Advanced topics in instrumental analysis which includes atomic absorption, inductively coupled plasma, nuclear magnetic resonance, gas chromatography/mass spectrometry, liquid chromatography, and infrared spectroscopy. Prerequisite: SCIT 1543

**CTEC 2441 Polymers I (2-6-4)** Study of the concepts of polymer science which includes classification, structure, properties, synthesis, characterization, and industrial applications. Prerequisite: SCIT 2401

**CTEC 2445 Unit Operations (2-6-4)** Instruction in the principles of chemical engineering and process equipment with emphasis on scale-up from laboratory bench to pilot plant. Prerequisite: CTEC 1441

## DAAC

**DAAC 1304 Pharmacology of Addiction (3-0-3)** Emphasizes pharmacological effects of addiction, tolerance, dependence, cross addiction, drug interaction, withdrawal, and recovery. Describes the psychological and physiological effects of substance use and behaviors.

**DAAC 1305 Co-Occurring Disorders (3-0-3)** Provides students with an overview of co-occurring psychiatric and substance use disorders and their impact on the individual, family, and community. Includes an integrated approach to address the issues accompanying the illness.

**DAAC 1309 Assessment of Substance-Related and Addictive Disorders (2-2-3)** Exploration of procedures and tools used to identify substance-related and addictive disorders and assess a client's problems, strengths, deficits, and needs.

**DAAC 1311 Counseling Theories (3-0-3)** An examination of major theories and current treatment modalities used in the field of counseling.

**DAAC 1317 Basic Counseling Skills (2-2-3)** An overview and application of the basic counseling skills.

**DAAC 1319 Substance-Related and Addictive Disorders (3-0-3)** An overview of causes and consequences of substance-related and addictive disorders, the major drug classifications, and the counselor's code of ethics.

**DAAC 2301 Therapeutic Communities in a Criminal Justice Setting (2-2-3)** A study of therapeutic communities as an approach to rehabilitation of incarcerated substance users.

**DAAC 2306 Substance Abuse Prevention I (2-2-3)** Examination of substance use disorder prevention.

**DAAC 2307 Addicted Family Intervention (3-0-3)** Examination of family systems focusing on the effects of addiction and recovery.

**DAAC 2341 Counseling Alcohol and Other Drug Addictions (3-0-3)** Advanced examination of knowledge, skills, attitudes, techniques, confidentiality and ethical guidelines applied in the counseling, treatment, prevention, and recovery of substance use disorders.

**DAAC 2343 Current Issues (3-0-3)** Examination of current issues related to substance use and addictive disorders.

**DAAC 2354 Dynamics of Group Counseling (2-2-3)** Exploration of group counseling skills, techniques, stages of group development, and confidentiality and ethics.

**DAAC 2366 Practicum (or Field Experience) - Substance Abuse/Addiction Counseling (0-0-3)** Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

## DEMR

**DEMR 1301 Shop Safety and Procedures (2-4-3)** A study of shop safety, rules, basic shop tools, and test equipment.

**DEMR 1305 Basic Electrical Systems (2-4-3)** Basic principles of electrical systems of diesel powered equipment with emphasis on starters, alternators, and batteries.

**DEMR 1316 Basic Hydraulics (2-4-3)** Fundamentals of hydraulics including components and related systems.

**DEMR 1317 Basic Brake Systems (2-4-3)** Basic principles of brake systems of diesel powered equipment. Emphasis on maintenance, repairs, and troubleshooting.

**DEMR 1321 Power Train I (2-4-3)** Fundamental repair and theory of power trains including clutches, transmissions, drive shafts, and differentials. Emphasis on inspection and repair.

**DEMR 1323 Heating, Ventilation, and Air Conditioning (HVAC) Troubleshooting and Repair (2-4-3)** Introduction to heating, ventilation, and air conditioning theory, testing, and repair. Emphasis on refrigerant reclamation, safety procedures, specialized tools, and repairs.

**DEMR 1327 Tractor Trailer Service and Repair (2-4-3)** An introduction to and familiarization with components and systems related to tractor trailer service. Emphasis on records required by the Department of Transportation.

**DEMR 1329 Preventative Maintenance (2-4-3)** An introductory course designed to provide the student with basic knowledge of proper servicing practices. Content includes record keeping and condition of major systems.

**DEMR 1330 Steering and Suspension I (2-4-3)** A study of design, function, maintenance, and repair of steering and suspension systems. Emphasis on troubleshooting and repair of failed components.

**DEMR 1380 Cooperative Education - Diesel Mechanics Technology/Technician (1-0-3)** Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

**DEMR 1410 Diesel Engine Testing and Repair I (2-4-4)** An introduction to testing and repairing diesel engines including related systems and specialized tools.

**DEMR 1447 Power Train II (2-4-4)** Continuation of fundamentals and theory of power train systems. Emphasis on disassembly, inspection, and repair of power train components. Prerequisite: DEMR 1321 or DEMR 1421

**DEMR 1680 Cooperative Education - Diesel Mechanics Technology/Technician (1-0-6)** Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

**DEMR 2332 Electronic Controls (2-4-3)** Advanced skills in diagnostic and programming techniques of electronic control systems. Prerequisite: DEMR 1305

**DEMR 2334 Advanced Diesel Tune-Up and Troubleshooting (2-4-3)** Advanced concepts and skills required for tune-up and troubleshooting procedures of diesel engines. Emphasis on the science of diagnostics with a common sense approach. Prerequisite: DEMR 2412 DEMR 2312 or AUMT 2417

**DEMR 2335 Advanced Hydraulics (2-4-3)** Advanced study of hydraulic systems and components including diagnostics and testing of hydraulic systems. Prerequisite: DEMR 1316 or DEMR 1416

**DEMR 2344 Automatic Power Shift and Hydrostatic Transmissions II (2-4-3)** Extended study of the operation, maintenance, and repair of automatic power shift hydrostatic transmissions. Prerequisite: DEMR 2412 or DEMR 2312 or DEMR 1321

**DEMR 2348 Failure Analysis (2-4-3)** An advanced course designed for analysis of typical part failures on equipment.

**DEMR 2412 Diesel Engine Testing and Repair II (2-4-4)** Continuation of Diesel Engine Testing and Repair I. Coverage of testing and repairing diesel engines including related systems and specialized tools. Prerequisite: DEMR 1410

## DFTG

**DFTG 1305 Technical Drafting (2-4-3)** Introduction to the principles of drafting to include terminology and fundamentals, including size and shape descriptions, projection methods, geometric construction, sections, and auxiliary views.

**DFTG 1309 Basic Computer-Aided Drafting (2-4-3)** An introduction to computer-aided drafting. Emphasis is placed on setup; creating and modifying geometry; storing and retrieving predefined shapes; placing, rotating, and scaling objects, adding text and dimensions, using layers, coordinate systems, and plot/print to scale.

**DFTG 1313 Drafting for Specific Occupations (2-4-3)** Discussion of theory and practice with drafting methods and the terminology required to prepare working drawings in specific or various occupational fields.

**DFTG 1317 Architectural Drafting - Residential (2-4-3)** Architectural drafting procedures, practices, terms, and symbols. Preparation of detailed working drawings for residential structures. Emphasis on light frame construction methods. Prerequisite: DFTG 1305 DFTG 1309

**DFTG 1325 Blueprint Reading and Sketching (2-4-3)** An introduction to reading and interpreting working drawings for fabrication processes and associated trades. Use of sketching techniques to create pictorial and multiple-view drawings.

**DFTG 1329 Electro-Mechanical Drafting (2-4-3)** A basic course including layout and design of electro-mechanical equipment from engineering notes and sketches. Prerequisite: DFTG 1309

**DFTG 1333 Mechanical Drafting (2-4-3)** Study of mechanical drawings using dimensioning and tolerances, sectioning techniques, orthographic projection, and pictorial drawings. Prerequisite: DFTG 1305 or DFTG 1309

**DFTG 1345 Parametric Modeling and Design (2-4-3)** Parametric-based design software for 3D design and drafting. Prerequisite: DFTG 1309

**DFTG 1357 Specialized Intermediate Computer-Aided Drafting (CAD) (2-4-3)** A continuation of practices and techniques used in Specialized Basic Computer-Aided Drafting. Emphasizes advanced dimensioning techniques, the development and use of prototype drawings, construction of pictorial drawings, interfacing two-dimensional (2D) and/or three-dimensional (3D) environments and extracting data.

**DFTG 1358 Electrical/Electronics Drafting (2-4-3)** Electrical and electronic drawings stressing modern representation used for block diagrams, schematic diagrams, logic diagrams, wiring/assembly drawings, printed circuit board layouts, motor control diagrams, power distribution diagrams, and electrical one-line diagrams. Prerequisite: DFTG 2319

**DFTG 1370 Technical Mathematics Applications in Drafting (2-2-3)** Algebraic and trigonometric applications utilized on drafting drawings; along with reading applications of the foot and decimal measuring tapes and the reading and applications of the architectural, engineering and metric scales and their scale factors utilized on respective drafting drawings.

**DFTG 2302 Machine Drafting (2-4-3)** Production of detail and assembly drawings of machines, threads, gears, utilizing tolerances, limit dimensioning, and surface finishes. Prerequisite: DFTG 1309

**DFTG 2306 Machine Design (2-4-3)** Theory and practice of design. Projects in problem-solving, including press fit, bolted and welded joints, and transmission components. Prerequisite: DFTG 1345 or DFTG 2335

**DFTG 2319 Intermediate Computer-Aided Drafting (2-4-3)** A continuation of practices and techniques used in basic computer-aided drafting including the development and use of prototype drawings, construction of pictorial drawings, extracting data, and basics of 3D. Prerequisite: DFTG 1309

**DFTG 2321 Topographical Drafting (2-4-3)** Plotting of surveyor's field notes. Includes drawing elevations, contour lines, plan and profiles, and laying out traverses. Prerequisite: DFTG 2319

**DFTG 2323 Pipe Drafting (2-4-3)** A study of pipe fittings, symbols, specifications and their applications to a piping process system. Creation of symbols and their usage in flow diagrams, plans, elevations, and isometrics.

**DFTG 2328 Architectural Drafting - Commercial (2-4-3)** Architectural drafting procedures, practices, governing codes, terms and symbols, including the preparation of detailed working drawings for a commercial building, with emphasis on commercial construction methods. Prerequisite: ARCE 1303 DFTG 1317 DFTG 2319 DFTG 1342

**DFTG 2330 Civil Drafting (2-4-3)** An in-depth study of drafting methods and principles used in civil engineering. Prerequisite: SRVY 1301 or POFI 1301 or DFTG 2319

**DFTG 2331 Advanced Technologies in Architectural Design and Drafting (2-4-3)** Use of architectural specific software to execute the elements required in designing standard architectural exhibits utilizing custom features to create walls, windows and specific design requirements for construction in residential/commercial and industrial architecture. Prerequisite: DFTG 2319 DFTG 1317 ARCE 1303 ARCE 1342

**DFTG 2332 Advanced Computer-Aided Drafting (2-4-3)** Application of advanced CAD techniques. Prerequisite: DFTG 2319

**DFTG 2335 Advanced Technologies in Mechanical Design and Drafting (2-4-3)** Use parametric-based software for mechanical design for advanced modeling and analysis. Prerequisite: DFTG 2319

**DFTG 2338 Final Project - Advanced Drafting (2-4-3)** A drafting course in which students participate in a comprehensive project from conception to conclusion. Prerequisite: DFTG 2319

**DFTG 2340 Solid Modeling/Design (2-4-3)** A computer-aided modeling course. Development of three-dimensional drawings and models from engineering sketches and orthographic drawings and utilization of three-dimensional models in design work. Prerequisite: DFTG 1309

**DFTG 2350 Geometric Dimensioning and Tolerancing (2-4-3)** Geometric dimensioning and tolerancing, according to standards, application of various geometric dimensions and tolerances to production drawings. Prerequisite: DFTG 1345 or DFTG 2335

**DFTG 2357 Advanced Technologies in Pipe Design and Drafting (2-4-3)** Advanced design and production techniques using specialized process plant based design software.

**DFTG 2386 Internship - Drafting and Design Technology/Technician, General (0-0-3)** A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer.

## DHYG

**DHYG 1207 General and Dental Nutrition (2-0-2)** General nutrition and nutritional biochemistry emphasizing the effect nutrition has on oral health.

**DHYG 1211 Periodontology (1-3-2)** Normal and diseased periodontium including the structural, functional, and environmental factors. Emphasis on etiology, pathology, treatment modalities, and therapeutic and preventive periodontics.

**DHYG 1215 Community Dentistry (1-4-2)** The principles and concepts of community public health and dental health education emphasizing community assessment, educational planning, implementation, and evaluation including methods and materials used in teaching dental health education in various community settings.

**DHYG 1227 Preventive Dental Hygiene Care (1-3-2)** The role of the dental hygienist as a therapeutic oral health care provider with emphasis on concepts of disease management, health promotion, communication, and behavior modification.

**DHYG 1235 Pharmacology for the Dental Hygienist (1-2-2)** Classification of drugs and their uses, actions, interactions, side effects, contraindications, with emphasis on dental applications.

**DHYG 1239 General and Oral Pathology (1-2-2)** Disturbances in human body development, diseases of the body, and disease prevention measures with emphasis on the oral cavity and associated structures.

**DHYG 1260 Clinical - Dental Hygiene/Hygienist (0-0-2)** A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: DHYG 1331

**DHYG 1261 Clinical - Dental Hygiene/Hygienist (0-0-2)** A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: DHYG 1260

**DHYG 1301 Orofacial Anatomy, Histology & Embryology (2-4-3)** The histology and embryology of oral tissues, gross anatomy of the head and neck, tooth morphology, and individual tooth identification.

**DHYG 1304 Dental Radiology (2-3-3)** Fundamentals of oral radiography, including techniques, interpretation, quality assurance, and ethics.

**DHYG 1319 Dental Materials (2-3-3)** Physical and chemical properties of dental materials including the application and manipulation of the various materials used in dentistry.

**DHYG 1331 Preclinical Dental Hygiene (1-7-3)** Foundational knowledge for performing clinical skills on patients with emphasis on procedures and rationale for performing dental hygiene care. Introduction to ethical principles as they apply to dental hygiene care.

**DHYG 2153 Dental Hygiene Practice (1-0-1)** Emphasis on the laws governing the practice of dentistry and dental hygiene, moral standards, and the ethical standards established by the dental hygiene profession. Practice settings for the dental hygienist, office operations, and preparation for employment.

**DHYG 2201 Dental Hygiene Care I (1-3-2)** Dental hygiene care for the medically or dentally compromised patient including supplemental instrumentation techniques.

**DHYG 2360 Clinical - Dental Hygiene/Hygienist (0-0-3)** A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: DHYG 1261

**DHYG 2361 Clinical - Dental Hygiene/Hygienist (0-0-3)** A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: DHYG 2360

## DNTA

**DNTA 1241 Dental Laboratory Procedures (1-3-2)** The Study of Dental Laboratory Procedures Including Skills Associated With Chairside Assisting; Pouring, Trimming, and Polishing Study Casts; Preliminary Impressions; and Fabricating Provisional Restorations. Prerequisite: DNTA 1311 or DNTA 1411

**DNTA 1301 Dental Materials (2-4-3)** The Theory of the Structure, Properties, and Procedures Related To Dental Materials. Safety and Universal Precautions Will Be Employed. Prerequisite: DNTA 1311

**DNTA 1305 Dental Radiology (2-3-3)** Introduction to radiation physics, radiation protection, and the operation of radiographic equipment. Instruction in exposure, processing and mounting of dental radiographs, and study of federal and state safety and standard practices.

**DNTA 1351 Dental Office Management (2-2-3)** Use computers/and

or manual systems to process dental information and interpret and practice learned dental office management skills.

**DNTA 1353 Dental Assisting Applications (2-4-3)** An expanded study of dental assisting techniques with emphasis on four-handed dentistry and utilization of armamentarium for general practice and specialty procedures.

**DNTA 1415 Chairside Assisting (2-4-4)** A study of pre-clinical chairside assisting procedures, instrumentation, OSHA and other regulatory agencies' standards.

**DNTA 1660 Clinical - Dental Assisting/Assistant (0-0-6)** A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

## EDTC

**EDTC 1164 Practicum (or Field Experience) - Teacher Assistant/Aide (0-0-1)** Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

**EDTC 1301 Educational Systems (2-4-3)** A study of the role and responsibilities of educational personnel with emphasis on development of professionalism and communication strategies. Topics include the various codes of ethics governing the educational field, the issue of confidentiality, learners' rights and responsibilities, and challenges facing schools.

**EDTC 1307 Introduction to Teaching Reading (2-4-3)** General principles of reading instruction. Topics include emergent literacy, reading readiness, reading instruction, literacy-based environments, and a review of varied materials and techniques for teaching reading.

**EDTC 1321 Bilingual Education (2-2-3)** An overview of bilingual education. Topics include awareness of cultural diversity, assessment strategies, teaching techniques, instructional activity development, and historical/philosophical concepts of bilingual/bicultural education.

**EDTC 1325 Multicultural Education (3-0-3)** An examination of cultural diversity found in society and reflected in the classroom. Topics include the study of major cultures and their influence on lifestyle, behavior, learning, intercultural communication and teaching, as well as psychosocial stressors encountered by diverse cultural groups.

**EDTC 1341 Instructional Technology and Computer Applications (2-2-3)** Examination of specialized educational technology. Topics include the integration of educational computer terminology, system operations, software, and multimedia in the contemporary classroom environment.

**EDTC 1364 Practicum (or Field Experience) - Teacher Assistant/Aide (0-0-3)** Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

**EDTC 1373 Writing Problems (3-0-3)** An in depth coverage of writing difficulties at the elementary level. Emphasis will be on the foundations and theories of writing at the elementary level, required curriculum to be taught, instructional techniques to utilize with students, models of teaching students, assessment techniques, and lesson planning strategies useful in working with the elementary student.

**EDTC 1374 Teaching Math & Science in the Elementary School (2-4-3)** Practical approaches for introducing math and science concepts in an elementary classroom lab environment with an emphasis on problem-solving, inquiry, and critical thinking. Topics include basic math and science concepts and properties, diagnostic testing, pedagogy, and recognizing and recommending corrective teaching strategies.

**EDTC 1375 Issues in Special Needs Education (3-0-3)** An examination of current research, federal and state regulations, and programs for students with exceptionalities within the public school environment. Topics address methods for supporting instructional planning and the implementation of program goals and objectives. Prerequisite: CDEC 1359

**EDTC 2305 Reading Problems (2-4-3)** In-depth coverage of reading difficulties. Emphasis on the theories, strategies, recognition, and remediation of reading problems. Topics include assessment, direct instruction, and motivational/interactive literacy activities.

**EDTC 2311 Instructional Practices and Effective Learning Environments (2-4-3)** General principles for selecting developmentally appropriate strategies in core curriculum areas, planning the classroom environment, and instructional accommodations and modifications.

**EDTC 2317 Guiding Student Behavior (2-4-3)** Developmentally appropriate and indirect guidance techniques for use in various school environments. Topics include identifying causes of inappropriate behavior, establishing and managing routines, the environment's role in promoting positive behavior, promoting self-esteem negotiation/conflict resolution strategies, and enhancing positive self-direction. Emphasis in implementation of a behavior management plan.

## EECT

**EECT 1371 Power Source Design (2-4-3)** Operation and design techniques of electronic power sources with emphasis on component ratings, calculations, and operational parameters of rectifiers, filters, regulators, both discrete and integrated variety. Prerequisite: IEIR 1371 or CETT 1302

**EECT 2275 Automatic Testing (1-4-2)** Automatic testing and acquisition of data. Includes topics related to virtual instruments, including applications, benefits, and limitations.

## EEIR

**EEIR 1307 Introductory Security Systems (2-4-3)** A study of security system components, maintenance, troubleshooting, and repair procedures. Emphasis on the installation of security systems as directed. Prerequisite: CPMT 2302

**EEIR 1309 National Electrical Code (2-4-3)** Interpretation of the National Electrical Code for residential, commercial and industrial wiring. Emphasis on designing, constructing, and troubleshooting electrical systems.

## ELMT

**ELMT 1301 Programmable Logic Controllers (2-4-3)** An introduction to programmable logic controllers as used in industrial environments including basic concepts, programming, applications, troubleshooting of ladder logic, and interfacing of equipment. Prerequisite: CETT 1325

**ELMT 1305 Basic Fluid Power (2-4-3)** Basic fluid power course covering pneumatic and hydraulic systems, fluid power symbols, operating theory, components, and basic electrical and manual controls.

**ELMT 1405 Basic Fluid Power (2-4-4)** Basic fluid power course covering pneumatic and hydraulic systems, fluid power symbols, operating theory, components, and basic electrical and manual controls.

**ELMT 1491 Special Topics in Electromechanical Technology/ Technician (2-4-4)** This course is designed to familiarize the student with concepts in electro-mechanical technology specific to wind turbines.

**ELMT 2239 Advanced Programmable Logic Controllers (1-4-2)** Advanced applications of programmable logic controllers as used in industrial environments including concepts of programming, industrial applications, troubleshooting ladder logic, and interfacing to equipment. Prerequisite: ELMT 1301

**ELMT 2333 Industrial Electronics (2-4-3)** Devices, circuits, and systems primarily used in automated manufacturing and/or process control including computer controls and interfacing between mechanical, electrical, electronic, and computer equipment. Includes presentation of programming schemes.

**ELMT 2335 Certified Electronics Technician Training (2-4-3)** Review of electronics concepts and principles in preparation for sitting for a certification examination administered by an outside organization or agency. Prerequisite: CETT 1325

**ELMT 2339 Advanced Programmable Logic Controllers (2-4-3)** Advanced applications of programmable logic controllers as used in industrial environments including concepts of programming, industrial applications, troubleshooting ladder logic, and interfacing to equipment. Prerequisite: ELMT 1301

**ELMT 2341 Electromechanical Systems (2-4-3)** Application of electromechanical systems. Emphasizes programmable control devices and solid state systems.

**ELMT 2480 Cooperative Education - Electromechanical Technology/ Electromechanical Engineering Technology (1-0-4)** Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

## ELPT

**ELPT 1215 Electrical Calculations I (2-0-2)** Introduction to mathematical applications utilized to solve problems in the electrical field. Topics include fractions, decimals, percentages, simple equations, ratio and proportion, unit conversions, and applied geometry.

**ELPT 1221 Introduction to Electrical Safety and Tools (1-3-2)** Safety rules and regulations. Includes the selection, inspection, use, and maintenance of common tools for electricians.

**ELPT 1225 National Electrical Code I (0-4-2)** An introductory study of the National Electric Code (NEC) for those employed in fields requiring knowledge of the Code. Emphasis on wiring design, protection, methods, and materials; equipment for general use; and basic calculations.

**ELPT 1311 Basic Electrical Theory (2-4-3)** Basic theory and practice of electrical circuits. Includes calculations as applied to alternating and direct current.

**ELPT 1321 Introduction to Electrical Safety and Tools (2-2-3)** Safety rules and regulations. Includes the selection, inspection, use, and maintenance of common tools for electricians.

**ELPT 1329 Residential Wiring (2-4-3)** Wiring methods for single family and multi-family dwellings. Includes load calculations, service entrance sizing, proper grounding techniques, and associated safety procedures.

**ELPT 1340 Master Electrician Exam Review I (2-4-3)** Electrical theory, code calculations, and interpretations applicable to becoming a Master Electrician. Emphasizes residential, commercial, and industrial installations using the current edition of the National Electric Code (NEC) and local ordinances. Prerequisite: ELPT 1225

**ELPT 1341 Motor Control (2-4-3)** Operating principles of solid-state and conventional controls along with their practical applications. Includes braking, jogging, plugging, safety interlocks, wiring, and schematic diagram interpretations. Prerequisite: ELPT 1311 or CETT 1303 or IEIR 1371

**ELPT 1345 Commercial Wiring (2-4-3)** Commercial wiring methods. Includes overcurrent protection, raceway panel board installation, proper grounding techniques, and associated safety procedures.

**ELPT 1351 Electrical Machines (2-4-3)** Direct current (DC) motors, single-phase and polyphase alternating current (AC) motors, generators, and alternators. Emphasis on construction, characteristics, efficiencies, starting, and speed control. Prerequisite: ELPT 1341

**ELPT 1357 Industrial Wiring (2-4-3)** Wiring methods used for industrial installations. Includes motor circuits, raceway and bus way installations, proper grounding techniques, and associated safety procedures.

**ELPT 1380 Cooperative Education - Electrical and Power Transmission Installation/Installer, General (1-0-3)** Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer,

and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

**ELPT 1680 Cooperative Education - Electrical and Power Transmission Installation/Installer, General (1-0-6)** Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

**ELPT 2305 Motors and Transformers (2-4-3)** Operation of single- and three-phase motors and transformers. Includes transformer banking, power factor correction, and protective devices.

**ELPT 2319 Programmable Logic Controllers I (2-4-3)** Fundamental concepts of programmable logic controllers, principles of operation, and numbering systems as applied to electrical controls. Prerequisite: ELPT 1341 (Pre or Co)

**ELPT 2323 Transformers (2-3-3)** Transformer types, construction, connections, protection, grounding, and associated safety procedures. Prerequisite: ELPT 2335

**ELPT 2331 AC/DC Drives (2-4-3)** Installation and maintenance of alternating current (AC) and direct current (DC) variable speed drives with emphasis on application, operating characteristics, and troubleshooting techniques.

**ELPT 2335 Electrical Theory and Devices (2-3-3)** Electrical and electronic measuring devices and their applications to the use of electrical power. Includes calculating and balancing single-phase and three-phase systems. Prerequisite: CETT 1305 or MATH 1316

**ELPT 2339 Electrical Power Distribution (2-2-3)** Design, operation, and technical details of modern power distribution systems including generating equipment, transmission lines, plant distribution, and protective devices. Includes calculations of fault current, system load analysis, rates, and power economics.

**ELPT 2343 Electrical Systems Design (2-3-3)** Electrical design of commercial and/or industrial projects including building layout, types of equipment, placement, sizing of electrical equipment, and all electrical calculations according to the requirements of the National Electrical Code (NEC). Prerequisite: DFTG 1313, ELPT 1357 or ELPT 2339

**ELPT 2347 Electrical Testing and Maintenance (2-4-3)** Proper and safe use of electrical power equipment test devices and the interpretation of test results. Includes protective relay testing and calibration, direct current (DC) testing, insulation power factor testing, and medium voltage switchgear.

**ELPT 2355 Programmable Logic Controllers II (2-2-3)** Advanced concepts in programmable logic controllers and their applications and interfacing to industrial controls. Prerequisite: ELPT 2319

## EMSP

**EMSP 1261 Clinical - Emergency Medical Technology/Technician (EMT Paramedic) (0-0-2)** A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

**EMSP 1355 Trauma Management (2-3-3)** Knowledge and skills in the assessment and management of patients with traumatic injuries.

**EMSP 1356 Patient Assessment and Airway Management (2-4-3)** Knowledge and skills required to perform patient assessment, airway management, and artificial ventilation.

**EMSP 1438 Introduction to Advanced Practice (3-4-4)** Fundamental elements associated with emergency medical services to include preparatory practices, pathophysiology, medication administration, and related topics.

**EMSP 1501 Emergency Medical Technician (3-8-5)** Preparation for certification as an Emergency Medical Technician (EMT).

**EMSP 2143 Assessment Based Management (0-4-1)** A summative experience covering comprehensive, assessment-based patient care management for the paramedic level.

**EMSP 2161 Clinical - Emergency Medical Technology/Technician (EMT Paramedic) (0-0-1)** A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

**EMSP 2162 Clinical - Emergency Medical Technology/Technician (EMT Paramedic) (0-0-1)** A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

**EMSP 2163 Clinical - Emergency Medical Technology/Technician (EMT Paramedic) (0-0-1)** A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

**EMSP 2167 Practicum (or Field Experience) - Emergency Medical Technology/Technician (EMT Paramedic) (0-0-1)** Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

**EMSP 2168 Practicum (or Field Experience) - Emergency Medical Technology/Technician (EMT Paramedic) (0-0-1)** Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

**EMSP 2169 Practicum (or Field Experience) - Emergency Medical Technology/Technician (EMT Paramedic) (0-0-1)** Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

**EMSP 2205 EMS Operations (1-3-2)** Knowledge and skills to safely manage multi-casualty incidents and rescue situations; utilize air medical resources; identify hazardous materials and other specialized incidents.

**EMSP 2206 Emergency Pharmacology (2-1-2)** A study of drug classifications, actions, therapeutic uses, adverse effects, routes of administration, and calculation of dosages.

**EMSP 2237 Emergency Procedures (0-6-2)** Application of emergency medical procedures. This course was designed to be repeated multiple times to improve student proficiency.

**EMSP 2330 Special Populations (2-3-3)** Knowledge and skills necessary to assess and manage ill or injured patients in diverse populations to include neonatology, pediatrics, geriatrics, and other related topics.

**EMSP 2434 Medical Emergencies (3-4-4)** Knowledge and skills in the assessment and management of patients with medical emergencies, including medical overview, neurology, gastroenterology, immunology, pulmonology, urology, hematology, endocrinology, toxicology, and other related topics.

**EMSP 2444 Cardiology (3-3-4)** Assessment and management of patients with cardiac emergencies. Includes single and multi-lead ECG interpretation.

## ENER

**ENER 1430 Basic Mechanical Skills for Energy (2-6-4)** Basic mechanical skills using hand and power tools in an industrial environment. Topics include tool use and maintenance, lubrication, measuring, threads and fasteners, bench works, basic mechanical drawings, and basic shop calculations (English and metric). Also addresses rigging procedures to include chain falls, jacks, cable, fulcrum, port-a-power, and come-alongs.

**ENER 2325 SCADA and Networking (2-4-3)** Topics in Supervisory Control and Data Acquisition (SCADA) systems, Industrial Ethernet communications systems as they apply to industry. Prerequisite: CETT 1325

## ENTC

**ENTC 1349 Reliability and Maintainability (2-4-3)** Equipment reliability and maintainability. Includes development and assessment of maintenance programs.

**ENTC 1371 Engineering Computer Graphics I (2-4-3)** This course covers the fundamental concepts associated with engineering computer aided design graphics; CAD. Emphasis will be placed on both dimensional analysis and design for manufacturing ability of 3D models. Solid Edge Modeling Software will be utilized. Prerequisite: DFTG 1325

**ENTC 2310 Machine Design (2-4-3)** Design considerations for machinery. Includes selection of mechanical components and machine construction principles. Prerequisite: MCHN 1326 ENTC 1371

## EPCT

**EPCT 1205 Environmental Regulations Overview (1-4-2)** An introduction to the history of the environmental movement, including basic requirements for compliance with the environmental regulations.

**EPCT 1243 Treatment, Remediation, and Disposal Techniques (1-4-2)** A study of the skills required in treatment, remediation, and disposal processes of solid waste, hazardous materials, and hazardous waste. Emphasizes the technologies applicable in the field.

**EPCT 1249 Environmental Regulation Interpretation and Applications (1-4-2)** An in-depth study of the major federal and state environmental regulations.

**EPCT 1301 Hazardous Waste Operations and Emergency Response (HAZWOPER) Training and Related Topics (2-3-3)** Minimum certification requirements in the Code of Federal Regulations (CFR) for a hazardous waste site worker as found in 29 CFR-1910.120 and 40 CFR-264.16.

**EPCT 1307 Introduction to Environmental Safety and Health (2-3-3)** An historic overview of environmental safety and health. Emphasis on the use of occupational safety and health codes.

**EPCT 1317 Environmental Geology (2-3-3)** A study of the relationships between earth science and the environment. Emphasizes crustal geological influences on air, water, and soil focusing on the effects on human habitation.

**EPCT 1341 Principles of Industrial Hygiene (2-3-3)** Concepts in threshold limits, dose response, and general recognition of occupational hazards, including sampling statistics, calibration, and equipment use. A study of the control of occupational hazards and sample collection and evaluation methods.

**EPCT 1344 Environmental Sampling and Analysis (2-3-3)** Sampling protocol, procedures, quality control, preservation technology, and field analysis. Emphasis on analysis commonly performed by the field technician.

**EPCT 1347 Waste Minimization and Pollution Prevention (2-3-3)** Exploration of the options available for source reduction, waste minimization, and pollution prevention including regulatory standards applicable to these activities.

**EPCT 2233 Environmental Toxicology (1-4-2)** A review of the research determining the systematic health effects of exposures to chemicals. Discussion of risk factors, routes of entry, control measures, and acute and chronic effects.

**EPCT 2237 Site Assessment (1-4-2)** Research techniques required to perform site assessment. Emphasis on the American Society of Testing Materials (ASTM) and Comprehensive Environmental Response Compensation Liability Act (CERCLA) Super Fund Standards.

**EPCT 2331 Industrial Hygiene Applications (2-3-3)** A study of the

industrial environment and its relation to worker's health. This course provides training in anticipation, recognition, evaluation, and controlling health hazards-- particularly chemical, physical, biological, and ergonomic factors existing in the workplace and having injurious effects on workers. The course also introduces training in instrumentation used in monitoring and measuring health hazards in the workplace and covers current issues in industrial hygiene.

## GAME

**GAME 1301 Computer Ethics (2-2-3)** A study of ethical issues that apply to computer related professions, intellectual property and privacy issues, professional responsibility, and the effects of globalization. Emphasizes the practical application of computer ethics through case studies and current events in the game and simulation industry.

**GAME 1303 Introduction to Game Design and Development (2-4-3)** Introduction to electronic game development and game development careers. Includes examination of history and philosophy of games, the game production process, employee factors for success in the field, and current issues and practices in the game development industry.

**GAME 1306 Design and Creation of Games (2-4-3)** Introduction to game and simulation development. Includes an overview of cultural history of electronic games, survey of the major innovators, and examination of the trends and that motivate game design. Prerequisite: ITSE 1329

**GAME 1336 Introduction to 3D Game Modeling (2-4-3)** Architectural spaces and modeling in a real-time game editor. Includes techniques for building, texturing, and lighting a game level to function in real time. Prerequisite: GAME 1303

**GAME 1343 Game and Simulation Programming I (2-4-3)** Game and simulation programming. Includes advanced pointer manipulation techniques and pointer applications, points and vectors, sound, and graphics. Prerequisite: ITSE 2331

**GAME 1349 OpenGL Programming I (2-4-3)** Computer graphics with focus on the basic principles and techniques of graphics applications. Emphasizes 3D computer graphics and translating a task from design to suitable algorithms and program code. Combines principles and major techniques in computer graphics with third-party game and simulation technologies. Prerequisite: ITSE 2331

**GAME 1353 Multi-User Game Programming I (2-4-3)** Network topologies, architecture and protocols, and communication in game and simulation programming. Introduces sockets programming utilizing TCP and UDP protocols in a high-level language. Focuses on blocking and asynchronous modes. Prerequisite: GAME 1343

**GAME 1359 Game and Simulation Programming II (2-4-3)** Design and development of game and simulation programs including user interface design, mathematical elements, image and file structure, and software development techniques. Prerequisite: GAME 1343

**GAME 2302 Mathematical Applications for Game Development (2-4-3)** Presents applications of mathematics and science in game and simulation programming. Includes the utilization of matrix and vector operations, kinematics, and Newtonian principles in games and simulations. Also covers code optimization. Prerequisite: GAME 1343

**GAME 2303 Artificial Intelligence Programming I (2-4-3)** Basic techniques in artificial intelligence related to game and simulation programming. Includes knowledge representation and inference techniques, expert systems, pathfinding algorithms, and search techniques for problem-solving. Prerequisite: GAME 1343

**GAME 2333 Game and Simulation Programming III (2-4-3)** Advanced applications of game and simulation programming techniques. Includes advanced rendering techniques and BSP trees. Incorporates shadowing, lighting, collision detection, and 3D animation and motion. Prerequisite: GAME 1359

**GAME 2341 Game Scripting (2-4-3)** Scripting languages with emphasis on game concepts and simulations. Prerequisite: ITSE 2331

**GAME 2347 Advanced Game Programming (2-4-3)** Perform tuning, debugging, designing and testing of software; utilize object-oriented architecture design, implement practices for game play within the software; oversee asset management; and utilize best coding practices.

**GAME 2349 Artificial Intelligence Programming II (2-4-3)** Advanced topics in artificial intelligence as applied to game and simulation-programming. Includes application of the principles of inductive learning, concept formation, decision tree learning, and neural networks. Prerequisite: GAME 2303

**GAME 2353 OpenGL Programming II (2-4-3)** Vector tools for graphics, transformation of objects, modeling shapes with polygon meshes, 3D viewing, rendering faces for realism, and color theory for game and simulation programming. Prerequisite: GAME 1349

**GAME 2359 Game and Simulation Group Project (2-4-3)** Creation of a game and/or simulation project utilizing a team approach. Includes the integration of design, art, audio, programming, and quality assurance. Prerequisite: GAME 1353 GAME 2303

## GISC

**GISC 1301 Cartography and Geography in Geographical Information Systems (GIS) and Global Positioning Systems (2-4-3)** Introduction to the principles of cartography and geography. Emphasis on global reference systems and the use of satellites for measurements and navigation.

**GISC 1311 Introduction to Geographic Information Systems (GIS) (2-4-3)** Introduction to basic concepts of vector GIS using several industry specific software programs including nomenclature of cartography and geography.

## GRPH

**GRPH 1359 Vector Graphics for Production (2-4-3)** A study and use of vector graphics for production.

## HALT

**HALT 2307 Horticultural Food Crops (2-4-3)** A study of commercial and home cultivated food crops including various vegetables, fruits, and nuts. Topics address planting, maintenance, harvest, and storage of the various crops.

## HART

**HART 1301 Basic Electricity for HVAC (2-4-3)** Principles of electricity as required by HVAC, including proper use of test equipment, electrical circuits, and component theory and operation.

**HART 1303 Air Conditioning Control Principles (2-4-3)** A basic study of HVAC and refrigeration controls; troubleshooting of control components; emphasis on use of wiring diagrams to analyze high and low voltage circuits; a review of Ohm's law as applied to air conditioning controls and circuits. Prerequisite: HART 1301

**HART 1307 Refrigeration Principles (2-4-3)** An introduction to the refrigeration cycle, heat transfer theory, temperature/pressure relationship, refrigerant handling, refrigeration components, and safety.

**HART 1310 HVAC Shop Practices and Tools (2-4-3)** Tools and instruments used in the HVAC industry. Includes proper application, use and care of these tools, and tubing and piping practices.

**HART 1341 Residential Air Conditioning (2-4-3)** A study of components, applications, and installation of mechanical air conditioning systems including operating conditions, troubleshooting, repair, and charging of air conditioning systems. Prerequisite: HART 1301 HART 1307

**HART 1345 Gas and Electric Heating (2-4-3)** Study of the procedures and principles used in servicing heating systems including gas fired furnaces and electric heating systems. Prerequisite: HART 1301

**HART 2331 Advanced Electricity for HVAC (2-4-3)** Advanced electrical instruction and skill building in installation and servicing of air conditioning and refrigeration equipment including detailed instruction in motors and power distribution motors, motor controls, and application of solid state devices. Prerequisite: HART 1303

**HART 2334 Advanced Air Conditioning Controls (2-4-3)** Theory and application of electrical control devices, electromechanical controls, and/or pneumatic controls. Prerequisite: HART 2336

**HART 2336 Air Conditioning Troubleshooting (2-4-3)** An advanced course in application of troubleshooting principles and use of test instruments to diagnose air conditioning and refrigeration components and system problems including conducting performance tests. Prerequisite: HART 1303 HART 1341 HART 1345

**HART 2338 Air Conditioning Installation and Startup (2-4-3)** A study of air conditioning system installation, refrigerant piping, condensate disposal, and air cleaning equipment with emphasis on startup and performance testing.

**HART 2341 Commercial Air Conditioning (2-4-3)** A study of components, applications, and installation of air conditioning systems with capacities of 25 tons or less. Prerequisite: HART 1303 HART 1341

**HART 2342 Commercial Refrigeration (2-4-3)** Theory and practical application in the maintenance of commercial refrigeration; medium, and low temperature applications and ice machines. Prerequisite: HART 1307

**HART 2343 Industrial Air Conditioning (2-4-3)** A study of components, accessories, applications, and installation of air conditioning systems above 25 tons capacity. Prerequisite: HART 2336

**HART 2345 Residential Air Conditioning Systems Design (2-4-3)** Study of the properties of air and results of cooling, heating, humidifying or dehumidifying; heat gain and heat loss calculations including equipment selection and balancing the air system. Prerequisite: HART 2336

**HART 2349 Heat Pumps (2-2-3)** A study of heat pumps, heat pump control circuits, defrost controls, auxiliary heat, air flow, and other topics related to heat pump systems. Prerequisite: HART 1303 HART 1341

**HART 2358 Testing, Adjusting, and Balancing HVAC Systems (2-4-3)** A study in the process of checking and adjusting all the building environmental systems to produce the design objectives. Emphasis on efficiency and energy savings. Prerequisite: HART 2331

## HEMR

**HEMR 1304 Natural Gas Compression (2-4-3)** An introductory course in the principles of the operation of gas compressors and natural gas engines.

**HEMR 1401 Tracks and Undercarriages (2-4-4)** Concepts in operation and maintenance of final drive track systems and undercarriages used on track and wheel type equipment.

## HITT

**HITT 1204 IT for Health Professions (1-4-2)** For students without an IT background, provides a basic overview of computer architecture, data organization, representation and structure, structure of programming, networking, and data communication. Includes basic terminology of computing.

**HITT 1253 Legal and Ethical Aspects of Health Information (1-3-2)** Concepts of privacy, security, confidentiality, ethics, health care legislation, and regulations relating to the maintenance and use of health information.

**HITT 1266 Practicum (or Field Experience) - Health Information/Medical Records Technology/Technician (0-0-2)** Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

**HITT 1301 Health Data Content and Structure (2-4-3)** Introduction to systems and processes for collecting, maintaining, and disseminating primary and secondary health related information including content of health record, documentation requirements, registries, indices, licensing, regulatory agencies, forms, and screens.

**HITT 1305 Medical Terminology I (2-4-3)** Study of medical terms through word origin and structure. Introduction to abbreviations and symbols, surgical and diagnostic procedures, and medical specialties.

**HITT 1311 Health Information Systems (2-4-3)** Introduction to health IT standards, health-related data structures, software applications, and enterprise architecture in health care and public health.

**HITT 1341 Coding and Classification Systems (2-4-3)** Fundamentals of coding rules, conventions, and guidelines using clinical classification systems.

**HITT 1342 Ambulatory Coding (2-4-3)** Fundamentals of ambulatory coding rules, conventions, and guidelines.

**HITT 1345 Health Care Delivery Systems (3-1-3)** Examination of delivery systems including organization, financing, accreditation, licensure, and regulatory agencies.

**HITT 2166 Practicum (or Field Experience) - Health Information/Medical Records Technology/Technician (0-0-1)** Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

**HITT 2249 RHIT Competency Review (1-2-2)** Review Health Information Technology (HIT) competencies, skills, and knowledge.

**HITT 2266 Practicum (or Field Experience) - Health Information/Medical Records Technology/Technician (0-0-2)** Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

**HITT 2331 Medical Terminology - Advanced (2-4-3)** Study of advanced terminology in various medical and surgical specialties including disease processes.

**HITT 2335 Coding and Reimbursement Methodologies (2-4-3)** Advanced coding techniques with emphasis on case studies, health records, and federal regulations regarding prospective payment systems and methods of reimbursement. Prerequisite: HITT 1341

**HITT 2339 Health Information Organization and Supervision (2-4-3)** Principles of organization and supervision of human, financial, and physical resources.

**HITT 2346 Advanced Medical Coding (2-4-3)** Advanced concepts of ICD and CPT coding rules, conventions, and guidelines in complex case studies. Investigation of government regulations and changes in health care reporting. Prerequisite: HITT 1341 HITT 1342

**HITT 2366 Practicum (or Field Experience) - Health Information/Medical Records Technology/Technician (0-0-3)** Practical, general workplace training supported by an individualized learning plan developed by the employer, college, and student.

**HITT 2443 Quality Assessment and Performance Improvement (2-6-4)** Study of quality standards and methodologies in the health information management environment. Topics include licensing, accreditation, compilation and presentation of data in statistical formats, quality management and performance improvement functions, utilization management, risk management, and medical staff data quality issues, and approaches to assessing patient safety issues and implementation of quality management and reporting through electronic systems. Approaches to assessing patient safety issues and implementation of quality management and reporting through electronic systems.

## HPRS

**HPRS 1206 Essentials of Medical Terminology (2-0-2)** A study of medical terminology, word origin, structure, and application.

## HRPO

**HRPO 2301 Human Resources Management (2-2-3)** Behavioral and legal approaches to the management of human resources in organizations.

## HYDR

**HYDR 1301 Rigging and Conveying Systems (2-4-3)** Introduction to directing and moving heavy objects, selecting the appropriate rigging equipment, in conjunction with the suitable hardware and lifting devices with an emphasis on inspection, care, and maintenance of rigging equipment.

**HYDR 1305 Basic Hydraulics (2-4-3)** Fundamentals of hydraulics including types of hydraulic pumps, cylinders, valves, motors, and related systems. Introduction to hydraulic schematic symbols as related to components.

## IEIR

**IEIR 1371 Electrical Principles and Applications (2-4-3)** Major topics include safety; the engineering subset of metric prefixes; engineering notation; electronic abbreviations; schematic symbols; resistor color codes; wire size and composition; Ohm's Law, Watt's Law, and Kirchoff's Laws; analysis of simple direct current and alternating current circuitry; and basic electrical devices including direct current motors, transformers, and passive filters. Laboratory sessions will stress use of test equipment including the digital multimeter and oscilloscope, construction of simple circuits, and troubleshooting techniques to determine faults in simple circuits.

**IEIR 2388 Internship - Industrial Electronics Technology/Technician (0-0-3)** A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer.

## IFWA

**IFWA 1205 Food Service Equipment and Planning (1-3-2)** A study of various types of food service equipment and the planning of equipment layout for product flow and efficient operation.

**IFWA 1217 Food Production and Planning (1-2-2)** Skill development in basic mathematical operations and study of their applications in the food service industry. Topics include 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.

**IFWA 1218 Nutrition for the Food Service Professional (2-0-2)** An introduction to nutrition including nutrients, digestion and metabolism, menu planning, recipe modification, dietary guidelines and restrictions, diet and disease, and healthy cooking techniques.

**IFWA 1319 Meat Identifying and Processing (2-4-3)** A study of the identification and characteristics of wholesale and retail cuts of meat; hotel, restaurant, and institutional cuts of meat; USDA-quality grades; quality control; and the federal meat inspection regulation.

**IFWA 1401 Food Preparation I (2-8-4)** A study of the fundamental principles of food preparation and cookery. Emphasis on basic techniques of preparing soups, salads, dressings, sandwiches, beverages, vegetables, and cheese and egg cookery. Prerequisite: CHEF 1205 IFWA 1205 IFWA 1217

**IFWA 1427 Food Preparation II (2-8-4)** Continuation of the fundamental principles of food preparation. Emphasis on preparation of food items such as meats, poultry and fish. Prerequisite: IFWA 1401

## IMED

**IMED 1316 Web Design I (2-4-3)** Instruction in web design and related graphic design issues including mark-up languages, web sites, and browsers. Prerequisite: ITSE 1311 or ARTC 1302

**IMED 1341 Interface Design (2-4-3)** Interface design process including selecting interfaces that are relative to a project's content and delivery system. Emphasis on aesthetic issues such as iconography, screen composition, colors, and typography.

**IMED 1345 Interactive Digital Media I (2-4-3)** Exploration of the use of graphics and sound to create interactive digital media applications and/or animations using industry standard authoring software.

**IMED 2311 Portfolio Development (2-4-3)** Preparation and enhancement of portfolio to meet professional standards, development of presentation skills, and improvement of job-seeking techniques.

**IMED 2313 Project Analysis and Design (2-4-3)** Application of the planning and production processes for digital media projects. Emphasis on copyright and other legal issues, content design and production management.

**IMED 2315 Web Design II (2-4-3)** A study of mark-up language and advanced layout techniques for creating web pages. Emphasis on identifying the target audience and producing web sites, according to accessibility standards, cultural appearance, and legal issues. Prerequisite: IMED 1316

**IMED 2349 Internet Server Management (2-4-3)** Web server software installation, configuration, and maintenance. Includes scripting and website optimization.

**IMED 2351 Digital Media Programming (2-4-3)** Advanced topics in digital media programming including custom scripts for data tracking. Emphasis on developing digital media programs customized to the client's needs. Prerequisite: ITSE 1311

**IMED 2388 Internship - Digital Communication and Media/Multimedia (0-0-3)** A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer.

## INDS

**INDS 1319 Technical Drawing for Interior Designers (2-4-3)** Introduction to reading and preparing technical instruction drawing for interior design, including plans, elevation, detail, schedules, dimensions, and lettering.

## INEW

**INEW 1340 ASP.NET Programming (2-4-3)** Server side web programming concepts to implement solutions for common web programming tasks. Includes Basic ASP.NET web controls, user management and authentication, state management, and development of database-driven web applications. Prerequisite: ITSE 2334

**INEW 2330 Comprehensive Software Project: Planning and Design (2-4-3)** A comprehensive application of skills learned in previous courses in a simulated workplace. Covers the development, testing, and documenting of a complete software and/or hardware solution. This course may be used as a capstone course for a certificate or degree. Prerequisite: ITSE 2358 ITSE 2334 INEW 1340

**INEW 2332 Comprehensive Software Project: Coding, Testing, and Implementation (2-2-3)** A comprehensive application of skills learned in previous semesters in a simulated workplace. Includes coding, testing, maintenance, and documentation of a complete software and/or hardware solution. This course may be used as a capstone course for a certificate or degree.

**INEW 2338 Advanced Java Programming (2-4-3)** A continuation of Java programming techniques such as servlets, and advanced graphical functions. Prerequisite: ITSE 2317

## INMT

**INMT 1305 Introduction to Industrial Maintenance (2-4-3)** Basic mechanical skills and repair techniques common to most fields of industrial maintenance. Topics include precision measuring instruments and general safety rules common in industry, including lock-out/tag-out.

**INMT 1317 Industrial Automation (2-4-3)** Applications of industrial automation systems including identification of system requirements, equipment integration, motors, controllers, and sensors. Coverage of set-up, maintenance, and testing of the automated system.

**INMT 1319 Manufacturing Processes (2-2-3)** Exploration of a variety of methods used in manufacturing. Theory and application of processes including but not limited to metal forming, welding, machining, heat treating, plating, assembly procedures, and process control considerations, casting and injection molding.

**INMT 1355 Industrial Power Plant Systems (2-4-3)** Study the principles of operation and maintenance of industrial power plants. Emphasis placed on component replacement, tune-up, and field adjustments of engine systems. Prerequisite: INMT 1305

**INMT 2301 Machinery Installation (2-4-3)** Students utilize skills acquired in previous studies. Machinery foundation, locations, installation, and alignment activities are practiced and tested. Emphasis is on the various methods of shaft alignment including laser shaft alignment. Prerequisite: INMT 1305

**INMT 2303 Pumps, Compressors & Mechanical Drives (2-4-3)** A study of the theory and operations of various types of pumps and compressors. Topics include mechanical power transmission systems including gears, v-belts, and chain drives. Prerequisite: INMT 1305

**INMT 2345 Industrial Troubleshooting (2-4-3)** An advanced study of the techniques used in troubleshooting various types of industrial equipment to include mechanical, electrical, hydraulic, and pneumatic systems and their control devices. Emphasis will be placed on the use of schematics and diagrams in conjunction with proper troubleshooting procedures. Prerequisite: ELPT 1341

## INTC

**INTC 1305 Introduction to Instrumentation (2-4-3)** A survey of the instrumentation field and the professional requirements of the instrumentation technician. Prerequisite: CETT 1303

**INTC 1341 Principles of Automatic Control (2-4-3)** Basic measurements, automatic control systems and design, closed loop systems, controllers, feedback, control modes, and control configurations.

**INTC 1343 Application of Industrial Automatic Controls (2-4-3)** Automatic process control including measuring devices, analog and digital instrumentation, signal transmitters, recorders, alarms, controllers, control valves, and process and instrument diagrams. Includes connection and troubleshooting of loops.

**INTC 1348 Analytical Instrumentation (2-4-3)** Analytical instruments emphasizing utilization in process applications. Includes, but not limited to, chromatography, pH, conductivity, and spectrophotometric instruments. Prerequisite: INTC 1341

**INTC 1350 Digital Measurement and Controls (2-4-3)** Basic measurement control instrumentation. Includes movement of digital data through common systems employing parallel and serial transfers. Prerequisite: ELPT 2319

**INTC 1355 Unit Operations (2-4-3)** Automatic control requirements of industrial processes. Includes control systems, control loop tuning, and analysis. Prerequisite: INTC 1341

**INTC 1356 Instrumentation Calibration (2-4-3)** Techniques for configuring and calibrating transmitters, controllers, recorders, valves, and valve positioners.

**INTC 1357 AC/DC Motor Control (2-4-3)** A study of electric motors and motor control devices common to a modern industrial environment. A presentation of motor characteristics with emphasis on starting, speed control, and stopping systems.

**INTC 2310 Principles of Industrial Measurements II (2-4-3)** Additional principles of measurement. Includes devices used to measure process variables and basic control functions. Prerequisite: INTC 1355

**INTC 2330 Instrumentation Systems Troubleshooting (2-4-3)** Techniques for troubleshooting instrumentation systems in a process environment. Includes troubleshooting upsets in processes. Prerequisite: INTC 1343

**INTC 2333 Instrumentation Systems Installation (2-4-3)** Synthesis, application, and integration of instrument installation components. Includes a comprehensive final project. Prerequisite: INTC 1355

**INTC 2336 Distributed Control and Programmable Logic (2-4-3)** An overview of distributed control systems including configuration of programmable logic controllers, smart transmitters, and field communicators. Functions of digital systems in a process control environment. Prerequisite: ELPT 2319

**INTC 2339 Instrument and Control Review (2-4-3)** An overview of instrument and control technology in preparation for industry employment and national testing. Prerequisite: INTC 1343

**INTC 2350 Fieldbus Process Control Systems (2-4-3)** A comprehensive view of fieldbus systems using theory, applications, and hands-on experiences. Prerequisite: INTC 2333

## IRAD

**IRAD 1301 Radiation Detection Measurement I (2-3-3)** Principles and methods utilized to detect and measure radiation with emphasis on gas-filled-ionization, proportional, and Geiger-Mueller (G-M) detectors. Topics include statistics of counting, calculation of efficiencies, and performance of surveys.

**IRAD 2271 Radiation Detection Measurements II (1-4-2)** Continued study of the principles and methods used to detect and measure radiation with emphasis on scintillators, semiconductors, spectroscopy, external personnel dosimeters, and neutron detectors. Introduction to radiological calibration and standardization. .

## ITCC

**ITCC 1314 CCNA 1: Introduction to Networks (2-4-3)** This course covers networking architecture, structure, and functions; introduces the principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations to provide a foundation for the curriculum.

**ITCC 1340 CCNA 2: Routing and Switching Essentials (2-4-3)** Describes the architecture, components, and basic operation of routers and explains the basic principles of routing and routing protocols. It also provides an in-depth understanding of how switches operate and are implemented in the LAN environment for small and large networks.

**ITCC 2312 CCNA 3: Scaling Networks (2-4-3)** CCNA R&S: Scaling Networks (ScaN) covers the architecture, components, and operations of routers and switches in larger and more complex networks. Students learn how to configure routers and switches using advanced protocols. Prerequisite: ITCC 1340

**ITCC 2313 CCNA 4: Connecting Networks (2-4-3)** WAN technologies and network services required by converged applications in a complex network; enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements.

**ITCC 2341 CCNA Security (2-4-3)** Overall security processes with particular emphasis on hands-on skills in the following areas: security policy design and management; security technologies, products, and solutions; and secure router design, installation, configuration, and maintenance; AAA and VPN implementation using routers and firewalls.

## ITDF

**ITDF 1300 Introduction to Digital Forensics (2-4-3)** A study of the application of digital forensic technology to collect, analyze, document, and present information while maintaining a documented chain of custody. Overview of ethics, crime, and other legal guidelines/regulations/laws. Includes overview of tools used for forensic analysis of digital devices in investigations.

**ITDF 1390 Special Topics in Computer & Information Systems Security/Information Assurance (2-4-3)** Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency.

**ITDF 2320 Digital Forensics Collection (2-4-3)** A study of acquiring digital evidence from devices, networks and logs while preserving the evidentiary chain. Includes the legal aspects of the search and seizure of computers and related equipment/information. Prerequisite: ITDF 1300 or ITDF 1305

**ITDF 2325 Digital Forensics Tools (2-4-3)** Skills-based course in the applications of forensic analysis software. Tools used in this course may include EnCase, ILook, Forensic Tool Kit, write blockers, StegAlyzerSS, "X-Ways", ProDiscover Basic, and others. Prerequisite: ITDF 1300 or ITDF 1305

**ITDF 2330 Digital Forensics Analysis (2-4-3)** Digital forensic analysis, report preparation, and evidence presentation. Emphasizes balancing legal and technical aspects of cases where digital forensics is employed. Prerequisite: ITDF 1300 or ITDF 1305

**ITDF 2335 Comprehensive Digital Forensics Project (2-4-3)** Comprehensive application of skills learned in previous digital forensics courses in a simulated crime scene or workplace investigation. Includes collection, analysis, and presentation of digital data and evidence in a problem-based case study format. This course is used as a capstone course for a certificate or degree. Prerequisite: ITDF 1300 or ITDF 1305

## ITNW

**ITNW 1308 Implementing and Supporting Client Operating Systems (2-4-3)** The fundamentals of managing and configuring network clients.

**ITNW 1313 Computer Virtualization (2-4-3)** Implement and support virtualization of clients of servers in a networked computing environment. This course explores installation, configuration, and management of computer virtualization workstation and servers.

**ITNW 1325 Fundamentals of Networking Technologies (2-4-3)** Instruction in networking technologies and their implementation. Topics include the OSI reference model, network protocols, transmission media, and networking hardware and software.

**ITNW 1345 Implementing Network Directory Services (2-4-3)** In-depth coverage of the skills necessary to install, configure, and administer Network Directory service.

**ITNW 1354 Implementing and Supporting Servers (2-4-3)** Implement, administer, and troubleshoot information systems that incorporate servers in a networked computing environment.

**ITNW 1358 Network+ (2-4-3)** Assists individuals in preparing for the Computing Technology Industry Association (CompTIA) Network+ certification exam and career as a network professional. Prerequisite: ITCC 1314

**ITNW 1391 Special Topics in Information Sciences and Systems (2-4-3)** Topics address recently identified current events, skills, knowledges, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency.

**ITNW 2312 Routers (2-4-3)** Router configuration for local area networks and wide area networks. Includes Internet Protocol (IP) addressing techniques and intermediate routing protocols. Prerequisite: ITNW 1325

**ITNW 2321 Networking with TCP/IP (2-4-3)** Set up, configure, use, and support Transmission Control Protocol/Internet Protocol (TCP/IP) on networking operating systems. Prerequisite: ITNW 1325

**ITNW 2335 Network Troubleshooting and Support (2-4-3)** Troubleshoot and support networks with emphasis on solving real world problems in a hands-on environment. Topics include troubleshooting and research techniques, available resources, and network management hard/software. Prerequisite: ITNW 1325

**ITNW 2350 Enterprise Network (2-4-3)** A case study in Convergence Technologies requiring a network engineer to study a problem and design a network solution for an enterprise network.

**ITNW 2352 Administering SQL Server (2-4-3)** Administering SQL Server is a skills development course in the installation, configuration, administration, and troubleshooting of SQL Servers client/server database management system version. Prerequisite: ITSW 1307 or ITNW 2354

**ITNW 2354 Internet/Intranet Server (2-4-3)** Advanced concepts in the designing, installing, and administration of an Internet/Intranet server. Prerequisite: ITNW 1345 ITSC 1316 or ITNW 2305

**ITNW 2359 Web Server Support and Maintenance (2-4-3)** Instruction in the installation, configuration, and implementation of web servers.

**ITNW 2376 Cloud Deployment & Infrastructure Management (2-4-3)** Deployment and management of scalable data centers, public and private cloud infrastructures, co-location strategies, energy consumption calculation, and disaster recovery planning using open source and commercial software.

## ITSC

**ITSC 1301 Introduction to Computers (2-4-3)** Overview of computer information systems. Introduces computer hardware, software, procedures, and human resources.

**ITSC 1309 Integrated Software Applications I (2-4-3)** Introduction to business productivity software suites using word processing, spreadsheets, databases, and/or presentation software.

**ITSC 1316 Linux Installation and Configuration (2-4-3)** Introduction to Linux operating system. Includes Linux installation, basic administration, utilities and commands, upgrading, networking, security, and application installation. Emphasizes hands-on setup, administration, and management of Linux. Prerequisite: ITCC 1314 or ITNW 1325 or ITSC 1325

**ITSC 1321 Intermediate PC Operating Systems (2-4-3)** Custom operating system installation, configuration and troubleshooting. Management of file systems, memory, storage, and peripheral devices. Prerequisite: CPMT 1304

**ITSC 1325 Personal Computer Hardware (2-4-3)** Current personal computer hardware including assembly, upgrading, setup, configuration, and troubleshooting.

**ITSC 2325 Advanced Linux (2-4-3)** Provides instruction in Advance Open-source Linux operating system. Develops LDAP directory services to all your clients, support users remotely, installing and configuring network services. Prerequisite: ITSC 1316

**ITSC 2339 Personal Computer Help Desk Support (2-4-3)** Diagnosis and solution of user hardware and software related problems with on-the-job and/or simulated projects. Prerequisite: CPMT 1311 or ITSC 1325

**ITSC 2346 Computer Center Management (3-0-3)** Assessment of needs of a computing center and general principles of hardware and software acquisition, maintenance, licensing, and improving usage scheduling. Emphasis on interpersonal communication and management skills.

**ITSC 2370 Final Project-Systems Administration (2-4-3)** Students will design and implement a systems administration plan for specified parameters utilizing knowledge and skill sets learned in the course of instruction. The students will be given a set of desired administrative outcomes and will implement current or impending technologies to obtain the desired administrative outcomes.

**ITSC 2386 Internship - Computer and Information Sciences, General (0-0-3)** A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer. Prerequisite: ITNW 2335, ITNW 2354

## ITSE

**ITSE 1303 Introduction to MySQL (2-4-3)** Introduction to fundamentals of SQL and relational databases. Prerequisite: ITSE 1311

**ITSE 1306 PHP Programming (2-4-3)** Introduction to PHP including the design of web-based applications, arrays, strings, regular expressions, file input/output, e-mail and database interfaces, stream and network programming, debugging, and security. Prerequisite: ITSE 1329

**ITSE 1307 Introduction to C++ Programming (2-4-3)** Introduction to computer programming using C++. Emphasis on the fundamentals of object-oriented design with development, testing, implementation, and documentation. Includes language syntax, data and file structures, input/output devices, and files.

**ITSE 1311 Beginning Web Programming (2-4-3)** Skills development in web programming including mark-up and scripting languages.

**ITSE 1329 Programming Logic and Design (2-4-3)** Problem-solving applying structured techniques and representation of algorithms using design tools. Includes testing, evaluation, and documentation.

**ITSE 1330 Introduction to C# Programming (2-4-3)** A study of C# syntax including data types, control structures, functions, syntax, and semantics of the language, classes, class relationships, and exception handling. Prerequisite: ITSE 1329

**ITSE 1332 Introduction to Visual Basic.NET Programming (2-4-3)** Introduction to Visual Basic.NET (VB.NET) including data types, control structures, functions, syntax, and semantics of the language, classes, class relationships, and exception handling. Prerequisite: ITSE 1329

**ITSE 1333 Mobile Applications Development (2-3-3)** An overview of different mobile platforms and their development environments.

**ITSE 1350 System Analysis & Design (2-4-3)** Introduction to the planning, design, and construction of computer information systems using the systems development life cycle and other appropriate design tools.

**ITSE 1359 Introduction to Scripting Languages (2-4-3)** Introduction to scripting languages including basic data types, control structures, regular expressions, input/output, and textual analysis.

**ITSE 1392 Special Topics in Computer Programming (2-4-3)** Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency.

**ITSE 2309 Database Programming (2-4-3)** Database development using database programming techniques emphasizing database structures, modeling, and database access.

**ITSE 2310 IOS Application Programming (2-4-3)** Course explores developing applications for iOS devices. Will include Objective-C programming, use of the iOS SDK environment, and current programming issues in the iOS environment. Prerequisite: ITSE 1329

**ITSE 2313 Web Authoring (2-4-3)** Instruction in designing and developing web pages that incorporate text, graphics, and other supporting elements using current technologies and authoring tools. Prerequisite: ITSE 1306

**ITSE 2317 Java Programming (2-4-3)** Introduction to object-oriented Java programming including the fundamental syntax and semantics of Java for applications and web applets. Prerequisite: ITSE 1307 or ITSE 1329

**ITSE 2331 Advanced C++ Programming (2-4-3)** Further application of C++ programming techniques including file access, abstract data structures, class inheritance, and other advanced techniques. Prerequisite: ITSE 1307

**ITSE 2333 Implementing a Database on Microsoft SQL Server (2-4-3)** Skills development in the implementation of a database solution using Microsoft SQL Server client/server database management system. Prerequisite: ITSW 1307 OR ITSE 1345

**ITSE 2334 Advanced Visual Basic.NET Programming (2-4-3)** Continuation of Visual Basic.NET programming using advanced features. Prerequisite: ITSE 1332

**ITSE 2343 Advanced Mobile Programming (2-4-3)** Programming for mobile devices including file access methods, data structures, modular programming, program testing and documentation. Prerequisite: ITSE 1333

**ITSE 2345 Data Structures (2-4-3)** Design an analysis of data structures and their operations. Prerequisite: ITSE 2331

**ITSE 2347 Advanced Database Programming (2-4-3)** Database development using complex database programming techniques emphasizing multiple interrelated files, menu design, security implementation, and multiple access.

**ITSE 2353 Advanced C# Programming (2-4-3)** Continuation of C# programming using advanced features of the .NET Framework Class Library. Prerequisite: ITSE 1330

**ITSE 2356 Oracle Database Administration I (2-4-3)** Fundamentals of the tasks and functions required of a database administrator using Oracle. Prerequisite: ITSE 1345

**ITSE 2358 Oracle Database Administration II (2-4-3)** A continuation of Oracle Database Administration I. Topics include recovery procedures, logical backups, standby database capabilities, and performance tuning of the Oracle Server. Common performance problems and the use of diagnostic tools to troubleshoot and optimize throughput will be discussed. Prerequisite: ITSE 2409

**ITSE 2359 Advanced Computer Programming (2-4-3)** Advanced programming techniques including file access methods, data structures, modular programming, program testing and documentation. Prerequisite: ITSE 2309

**ITSE 2371 Advanced IOS Programming (2-4-3)** This course explores the creation and deployment of an application to an iOS device by building upon concepts in iOS Application Programming and utilization of the Cocoa/Cocoa Touch Framework. Prerequisite: ITSE 2310

**ITSE 2386 Internship - Computer Programming/Programmer, General (0-0-3)** A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer.

**ITSE 2459 Advanced Computer Programming (2-4-4)** Advanced programming techniques including file access methods, data structures, modular programming, program testing and documentation.

## ITSW

**ITSW 1307 Introduction to Database (2-4-3)** Introduction to database theory and the practical applications of a database.

**ITSW 1310 Introduction to Presentation Graphics Software (2-4-3)** Instruction in the utilization of presentation software to produce multimedia presentations. Graphics, text, sound, animation and/or video may be used in presentation development.

**ITSW 2337 Advanced Database (2-4-3)** Advanced concepts of database design and functionality.

## ITSY

**ITSY 1300 Fundamentals of Information Security (2-4-3)** An introduction to information security including vocabulary and terminology, ethics, the legal environment, and risk management. Identification of exposures and vulnerabilities and appropriate countermeasures are addressed. The importance of appropriate planning, policies and controls is also discussed.

**ITSY 1342 Information Technology Security (2-4-3)** Instruction in security for network hardware, software, and data, including physical security; backup procedures; relevant tools; encryption; and protection from viruses. Prerequisite: ITNW 1345 or ITNW 1354

**ITSY 2301 Firewalls and Network Security (2-4-3)** Identify elements of firewall design, types of security threats and responses to security attacks. Use Best Practices to design, implement, and monitor a network security plan. Examine security incident postmortem reporting and ongoing network security activities. Prerequisite: ITNW 1325 or ITNW 2312

**ITSY 2330 Intrusion Detection (2-4-3)** Identify elements of firewall design, types of security threats and responses to security attacks. Use Best Practices to design, implement, and monitor a network security plan. Examine security incident postmortem reporting and ongoing network security activities. Prerequisite: ITSY 1342

**ITSY 2343 Computer System Forensics (2-4-3)** In-depth study of system forensics including methodologies used for analysis of computer security breaches. Gather and evaluate evidence to perform postmortem analysis of a security breach. Prerequisite: ITDF 1300 ITSY 1342

**ITSY 2359 Security Assessment and Auditing (2-4-3)** Capstone experience for the security curriculum. Synthesizes technical material covered in prior courses to monitor, audit, analyze, and revise computer and network security systems to ensure appropriate levels of protection are in place to assure regulatory compliance. Prerequisite: ITSY 1342 ITSY 2301

## LMGT

**LMGT 1319 Introduction to Business Logistics (2-2-3)** A systems approach to managing activities associated with traffic, transportation, inventory management, warehousing, packaging, order processing, and materials handling.

**LMGT 1321 Introduction to Materials Handling (2-2-3)** Introduces the concepts and principles of materials management to include inventory control and forecasting activities.

**LMGT 1323 Domestic and International Transportation Management (2-2-3)** An overview of the principles and practices of transportation and its role in the distribution process. Emphasis on the physical transportation systems involved in the United States as well as on global distribution systems. Topics include carrier responsibilities and services, freight classifications, rates, tariffs, and public policy and regulations. Also includes logistical geography and the development of skills to solve logistical transportation problems and issues.

**LMGT 1325 Warehouse and Distribution Center Management (2-2-3)** Emphasis on physical distribution and total supply chain management. Includes warehouse operations management, hardware and software operations, bar codes, organizational effectiveness, just-in-time, and continuous replenishment.

**LMGT 1340 Contemporary Logistics Issues (2-2-3)** Exploration of relevant and changing topics in the logistics management field. Includes group projects, interaction with local industry, class lectures, and case studies.

**LMGT 1341 Freight Loss and Damage Claims (2-2-3)** An analysis of bill of lading contracts and liability for lost or damaged freight, including procedures for filing and documenting claims.

**LMGT 1346 Radio Frequency Identification (RFID) - Wireless Information Systems (2-2-3)** Overview of the wireless communication system and its application with the radio frequency identification (RFID) system. Includes an introduction of the value of both systems as they relate to traffic management, transportation, inventory management, warehousing, packaging, order processing, and materials handling.

**LMGT 1349 Materials Requirement Planning (2-2-3)** A study of materials requirement planning that includes net change versus regenerative systems, lot sizing, and the time sharing of dependent demand.

**LMGT 2330 International Logistics Management (2-2-3)** Identification of the principles and practices involved in international distribution systems including the multinational corporation. Attention to global strategic planning, production, supply, manpower/labor, geography, business communications, cultural, political, and legal issues affecting global distribution and firm/host relationships.

**LMGT 2334 Principles of Traffic Management (2-2-3)** A study of the role and functions of a transportation traffic manager within a commercial or public enterprise. Includes training in rate negotiation, carrier and mode selection, carrier service evaluation, quality control, traffic pattern analysis, documentation for domestic and international shipments, claims, hazardous materials movement, and the state, federal, and international environments of transportation.

**LMGT 2388 Internship: Logistics and Materials Management (0-0-3)** A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer.

## LNWK

**LNWK 1211 Climbing Skills (1-4-2)** Theory and application of pole climbing. Includes safety, climbing techniques, tool inspection, poles inspection, personal protective equipment, and fall protection.

**LNWK 1241 Distribution Operations (1-3-2)** A study of the theoretical and practical operation of electric utility distribution systems. Topics include customer service voltages, capacitors, and coordination of protection equipment.

**LNWK 1301 Orientation and Line Skill Fundamentals (2-4-3)** Examination of utility company operations. Topics include company structure, safety and distribution standards handbook, lineman's tools, vocabulary, and work procedures. Discussion of basic electrical systems including the history of power generation and distribution with emphasis on generating plants and substations.

**LNWK 1331 Transformer Connections (2-4-3)** An introduction to basic transformer connections and theory (including basic alternating current (AC) theory) and their direct application to single phase and three phase transformers. Students will study and practice basic transformer connections and fundamentals.

**LNWK 1391 Special Topics in Lineworker (2-3-3)** Topics address recently identified current events, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency.

**LNWK 2321 Live Line Safety (2-4-3)** Study of cover-up procedures and safety requirements for work on energized electrical circuits. Includes use, care, and inspection of cover-up material, recognizing nominal voltages and energized parts, approach distances, and safety.

**LNWK 2322 Distribution Line Construction (2-4-3)** Study of electric distribution line construction. Includes reading staking sheets and framing specifications, tailboard discussions, pole framing and setting, installing conductors, transformers and other line equipment, and OSHA and NESC regulations.

**LNWK 2324 Troubleshooting Distribution Systems (2-4-3)** Study of power outages and voltage complaints on distribution systems. Includes lockout-tagout procedures, safety grounds, back feed, induced voltage, causes of outages, and analyzing voltage complaints.

## LOTT

**LOTT 1271 Mathematics for Photonics Technicians (1-4-2)** Need a mathematics course specific to the needs of photonics technician.

**LOTT 1344 Fundamentals of Laser and Laser Safety (2-4-3)** An introduction to the general nomenclature of the laser including laser safety, light and its properties, lasing action, optical cavities, modes of oscillation, and laser characteristics and classifications.

**LOTT 1443 Geometrical Optics (3-4-4)** Theory of light as a geometric ray. Applications of the laws of reflection and refraction from the mathematical, graphical, and experimental aspects.

**LOTT 2432 Laser Maintenance and Repair (2-6-4)** A course in planning, disassembling, testing, and troubleshooting various systems. Emphasis on practical utilization of support test equipment. Prerequisite: CETT 1379 or CETT 1329

**LOTT 2435 Electro-Optic Devices (2-6-4)** Theory and operation of special purpose devices to measure laser output parameters, manipulate laser beams, modulate and Q-switch lasers, photo detectors, and special techniques in photography and holography. Prerequisite: LOTT 2445

**LOTT 2436 Wave Optics (3-4-4)** Principles and theory of light and its wave nature including origin of light, spectral characteristics of light, radiometry, photometry, reflection, refraction, propagation of light, interference, diffraction, and polarization. Prerequisite: LOTT 1443

**LOTT 2445 Continuous Wave and Pulsed Lasers (2-6-4)** A mathematical and conceptual study of continuous wave (CW) and pulsed lasers, including ion, solid state, diode pumped solid state (DPSS) and molecular. Emphasis on the operation and maintenance of these systems and the measurement of their output characteristics and data analysis. Prerequisite: LOTT 1344

## MCHN

**MCHN 1300 Beginning Machine Shop (2-4-3)** Fundamental machine shop safety, math, and measurement.

**MCHN 1320 Precision Tools and Measurement (2-4-3)** An introduction to the modern science of dimensional metrology. Emphasis on the identification, selection, and application of various types of precision instruments associated with the machining trade. Practice of basic layout and piece part measurements while using standard measuring tools.

**MCHN 1326 Introduction to Computer-Aided Manufacturing (CAM) (2-4-3)** A study of Computer-Aided Manufacturing (CAM) software which is used to develop applications for manufacturing. Emphasis on tool geometry, tool selection, and the tool library.

**MCHN 1343 Machine Shop Mathematics (2-4-3)** Designed to prepare the student with technical, applied mathematics that will be necessary in future machine shop-related courses.

**MCHN 1416 Machine Tool Repair (2-6-4)** Basic repair of machine tools, disassembly, parts fabrication, and assembly of machine types, including related math, blueprint reading, and safety.

**MCHN 1438 Basic Machine Shop I (2-6-4)** A course that introduces the student to machining fundamentals. The student begins by using basic machine tools including the lathe, milling machine, drill press, power saw, and bench grinder. Machine terminology, theory, math, part layout, and bench work using common measuring tools is included. Emphasis is placed on shop safety, housekeeping, and preventative maintenance. Prerequisite: MCHN 1300

**MCHN 1454 Intermediate Machining II (2-6-4)** Development of job process plan to include operation of lathes, milling machines, drill presses, and power saws. Set-up, layout, and tool maintenance is included. Emphasis on shop safety and preventative maintenance. Prerequisite: MCHN 1438

**MCHN 2303 Fundamentals of Computer Numerical Controlled (CNC) Machine Controls (2-4-3)** Programming and operation of Computer Numerical Controlled (CNC) machine shop equipment.

**MCHN 2335 Advanced CNC Machining (2-4-3)** The study of advanced CNC operation with an emphasis on programming and operations of machining and turning centers. Prerequisite: MCHN 2303 or MCHN 2344

**MCHN 2338 Advanced Computer-Aided Manufacturing (CAM) (2-4-3)** A study of advanced techniques in Computer-Aided Manufacturing (CAM). Prerequisite: MCHN 1326

**MCHN 2341 Advanced Machining I (2-4-3)** A study of advanced lathe and milling operations. Emphasis on advanced cutting operations of the lathe and milling machines, including the use of special tooling, bench assembly, and materials identification. Prerequisite: MCHN 1454

**MCHN 2344 Computerized Numerical Control Programming (2-4-3)** An introduction to G and M codes (RS274-D) necessary to program Computer Numerical Controlled (CNC) machines. Prerequisite: DFTG 1325

**MCHN 2471 Specialized Equipment and Processes (2-6-4)** An advanced course that incorporates conventional and computer numerical control equipment. Design and fabricate fixtures. Use metrology equipment and reverse engineering. Manufacture a project that shows proficiency in a variety of machining equipment and processes. Prerequisite: MCHN 1454

## MDCA

**MDCA 1302 Human Disease/Pathophysiology (2-4-3)** A study of anatomy and physiology with emphasis on human pathophysiology, including etiology, prognosis, medical treatment, signs and symptoms of common diseases of all body systems.

**MDCA 1313 Medical Terminology (2-3-3)** A study and practical application of a medical vocabulary system. Includes structure, recognition, analysis, definition, spelling, pronunciation, and combination of medical terms from prefixes, suffixes, roots, and combining forms.

**MDCA 1321 Administrative Procedures (2-3-3)** Medical office procedures including appointment scheduling, medical records creation and maintenance, interpersonal communications, bookkeeping tasks, coding, billing, collecting, third party reimbursement, credit arrangements, and computer use in the medical office.

**MDCA 1343 Medical Insurance (2-4-3)** Emphasizes medical office coding for payment and reimbursement by patient or third party payers for ambulatory care settings.

## MFGT

**MFGT 1406 Mechanical Principles in Automated Manufacturing (2-4-4)** Overview of mechanical principles used in automated manufacturing. Includes common measurement methods, engineering drawings, and mechanical methods used in automated manufacturing.

**MFGT 2459 Industrial Automation II (3-4-4)** Advanced topics in automated manufacturing. Includes electrical and electronic principles, electro-pneumatic and electro-hydraulic controls, logic control methods, and basic programming techniques.

## MRKG

**MRKG 1301 Customer Relationship Management (2-2-3)** General principles of customer relationship management including skills, knowledge, attitudes, and behaviors.

**MRKG 2349 Advertising and Sales Promotion (3-0-3)** Integrated marketing communications. Includes advertising principles and practices. Emphasizes multi-media of persuasive communication including buyer behavior, budgeting, and regulatory constraints.

## MRMT

**MRMT 1307 Medical Transcription I (2-4-3)** Fundamentals of medical transcription with hands-on experience in transcribing actual physician dictation including basic reports such as history and physicals, discharge summaries, consultations, operative reports, and other medical reports. Utilizes technology compatible with industry standards. Designed to develop speed and accuracy.

**MRMT 2433 Medical Transcription II (2-4-4)** Transcription of medical reports with increasing speed and accuracy including history and physicals, consultations, discharge summaries, operative reports, and other medical reports.

## NANO

**NANO 1205 Nano Technology (1-4-2)** Introduction to nano-sciences. Includes terminology, current and future uses, and the impact of nanotechnology on biology, solid-state manufacturing, material science, and chemistry.

## NUCP

**NUCP 1241 Personnel and Environmental Monitoring (1-3-2)** Instruction on the impact of natural and man-made radiation sources in the environment. Emphasis on naturally occurring radioactive materials and their impact on population doses. Topics include radon sampling.

**NUCP 1271 Introduction to Nuclear Systems (1-4-2)** A study of the major components of the reactor core, pressure vessel, shield and primary cooling water systems. Topics include differences between pressurized water reactors (PWRs) and boiling water reactors (BWRs) and power waste issues and accidents.

**NUCP 1319 Radiation Physics (2-3-3)** A study of atomic structure, radioactivity (primarily alpha, beta, gamma), and the interaction of radiation with matter. Topics include radioactive decay law, gamma attenuation equation, and inverse square law. Prerequisite: INRW 0200

**NUCP 1391 Special Topics in Nuclear/Nuclear Power Technology/Technician (2-2-3)** Topics address recently identified current events, skills, knowledges, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student.

**NUCP 2301 Radiation Protection I (2-3-3)** Introduction to the field of radiation protection: the art and science of protecting human beings from injury by radiation. Topics include dose and exposure measurements and units, permissible exposure limits, and internal exposure evaluations.

**NUCP 2302 Radiation Protection II (2-4-3)** Continued study in the field of protecting humans from unwarranted radiation exposure. Topics include the use of personnel monitoring devices, radiation dose assessment, bioassay techniques, and record keeping.

**NUCP 2311 Radioactive Waste Disposal and Management (2-3-3)** A study of radioactive waste management from generation through disposal. Topics include regulatory and advisory agencies; appropriate radioactive waste regulations including Department of Transportation (DOT) laws; classification of radioactive wastes; and NORM (naturally occurring) and mixed wastes.

**NUCP 2331 Radiation Protection III (2-3-3)** Exploration of the use of materials that attenuate the intensity of radiation including the principles of shielding persons and objects from particulate, electromagnetic, and mixed radiation. Emphasis on methods employed by technicians for the determination of the necessary amounts of shielding.

**NUCP 2379 Reactor Physics (2-3-3)** A study of the principles of nuclear reactor operation including neutron behavior, fission process, neutron balance, criticality, and actual operation procedures. Introduction to neutron detection and measurement and basic nuclear physics calculations. Prerequisite: NUCP 1319

## OSHT

**OSHT 1209 Physical Hazards Control (1-4-2)** A study of the physical hazards in industry and the methods of workplace design and redesign to control these hazards. Emphasis on the regulation codes and standards associated with the control of physical hazards.

**OSHT 1213 Accident Prevention, Inspection, and Investigation (1-4-2)** Provides a basis for understanding the nature of occupational hazard recognition, accident prevention, loss reduction, inspection techniques, and accident investigation analysis.

**OSHT 1221 Fire Protection Systems (1-4-2)** Study of fire protection systems and their applications with emphasis on the fire prevention codes and standards.

**OSHT 1305 OSHA Regulations - Construction Industry (2-4-3)** A study of Occupational Safety and Health Administration (OSHA) regulations pertinent to the construction industry.

**OSHT 1316 Material Handling (2-3-3)** Proper methods for material handling and storage including safety practices, proper equipment usage, engineering controls, and personal protective equipment.

**OSHT 1320 Energy Industrial Safety (2-4-3)** An overview for industrial workers of state/federal regulations and guidelines which require industrial safety training. Topics include the 29 C.F.R. 1910, 1926 and National Fire Protection Association (NFPA) 70E standards such as confined space entry, emergency action, lock out/tag out, arc flash, and other work related subjects.

**OSHT 2209 Safety Program Management (1-4-2)** Examine the major safety management issues that affect the workplace including safety awareness, loss control, regulatory issues, and human behavior modification.

**OSHT 2320 Safety Training Presentation Techniques (2-4-3)** Principles of developing and presenting effective industrial/business training. Emphasis on instructor qualifications and responsibilities, principles of teaching including use of teaching aids and presentation skills.

**OSHT 2370 Safety and Health First Aid Certification (2-3-3)** This course is designed to offer the student certification in standard first aid and cardio-pulmonary resuscitation (CPR) along with a full understanding of the principles of emergency care. The student will learn on-scene planning as well as actions necessary to deal with accidents and injuries in an industrial setting. The student will learn physiology of the human body and the principles behind pressure points and actions taken in splint application and body immobilization.

**OSHT 2388 Internship - Occupational Safety and Health Technology/Technician (0-0-3)** A work-based learning experience that enables the student to apply specialized occupational theory, skills and concepts. A learning plan is developed by the college and the employer.

**OSHT 2401 OSHA Regulations - General Industry (2-4-4)** A study of Occupational Safety and Health Administration (OSHA) regulations pertinent to general industry.

## PFPB

**PFPB 1321 Plumbing Maintenance and Repair (2-4-3)** Instruction in the practices and procedures employed by a plumber including public relations.

**PFPB 1323 Plumbing Codes I (2-4-3)** State and local plumbing codes and the application of potable water, waste water, and gas systems relating to residential and light commercial settings.

**PFPB 1347 Backflow Prevention (2-4-3)** Principles, practices, and regulations of backflow. Includes backpressure, public health, laws and responsibilities, mechanics and use of backflow devices, and equipment testing used in backflow devices.

**PFPB 2308 Piping Standards and Materials (2-4-3)** Identification, description, and application of piping standards and specifications. Includes identification and use of various metallic and non-metallic piping materials, identification and installation of valves, and material take-offs.

**PFPB 2309 Residential Construction Plumbing I (2-4-3)** Skill development in the procedures and techniques employed by a plumber in the rough-in and top-out stages of a new home or the remodeling of an older home.

**PFPB 2336 Commercial Construction and Fixture Setting (2-4-3)** Practices and procedures employed by a plumber in the common construction in a commercial building including drain, waste, and vent systems, water systems, and fixture installations.

**PFPB 2343 Advanced Pipe Practices (2-4-3)** Identification, installation, and testing of steam traps and steam trap station components; valve identification, application, and maintenance; identification, storage, and handling of in-line specialties; hydrostatic testing of process piping.

**PFPB 2349 Field Measuring, Sketching, and Layout (2-4-3)** Field dimensioning, measuring, sketching, and layout of future process piping and the use, care, and setup of transit and level.

## PHRA

**PHRA 1202 Pharmacy Law (2-0-2)** Overview of federal and state laws governing the practice of pharmacy. The role of the pharmacy technician and the pharmacist and their associated responsibilities. Includes Code of Ethics, patient confidentiality, and a comparison of legal and ethical aspects.

**PHRA 1205 Drug Classification (1-4-2)** A study of pharmaceutical drugs, abbreviations, classifications, dosages, side effects, and routes of administration.

**PHRA 1209 Pharmaceutical Mathematics I (0-4-2)** Solving pharmaceutical calculation problems encountered in the preparation and distribution of drugs.

**PHRA 1243 Pharmacy Technician Certification Review (2-0-2)** A review of major topics covered on the national Pharmacy Technician Certification Examination (PTCE).

**PHRA 1247 Pharmaceutical Mathematics II (0-4-2)** Advanced concepts of Pharmaceutical Mathematics.

**PHRA 1301 Introduction to Pharmacy (3-0-3)** An overview of the qualifications, operational guidelines, and job duties of a pharmacy technician.

**PHRA 1313 Community Pharmacy Practice (2-3-3)** Introduction to the skills necessary to process, prepare, label, and maintain records of prescriptions in a community pharmacy to include customer service, count and pour techniques, prescription calculations, drug selection and preparation, over-the-counter drugs, inventory management and legal parameters.

**PHRA 1345 Compounding Sterile Preparations (2-4-3)** The process of compounding sterile preparations and aseptic technique within legal and regulatory guidelines specified by USP <797> standards.

**PHRA 1349 Institutional Pharmacy Practice (2-3-3)** Fundamentals of the diverse roles and practice of pharmacy technicians in an institutional pharmacy setting. In-depth coverage of hospital pharmacy organization, work flow and personnel, safety techniques, data entry, packaging and labeling operations, inpatient drug distribution systems including investigational drugs, continuous quality improvement and inventory control.

**PHRA 1441 Pharmacy Drug Therapy and Treatment (3-2-4)** Study of therapeutic agents, their classifications, properties, actions, and effects on the human body and their role in the management of disease.

**PHRA 2461 Clinical - Pharmacy Technician/Assistant (0-0-4)**

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

**PHRA 2462 Clinical - Pharmacy Technician/Assistant (0-0-4)**

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

## PHTC

**PHTC 1311 Fundamentals of Photography (2-4-3)** An introduction to camera operation and image production, composition, flash usage, and use of exposure meters and filters. Prerequisite: ARTC 1302

## POFI

**POFI 1301 Computer Applications I (2-4-3)** Overview of computer office applications including current terminology and technology. Introduction to computer hardware, software applications, and procedures. This course is designed to be repeated multiple times to improve student proficiency.

**POFI 1349 Spreadsheets (2-4-3)** Skill development in concepts, procedures, and application of spreadsheets. This course is designed to be repeated multiple times to improve student proficiency.

**POFI 2301 Word Processing (2-4-3)** Word processing software focusing on business applications. This course is designed to be repeated multiple times to improve student proficiency.

## POFT

**POFT 1301 Business English (2-2-3)** Introduction to a practical application of basic language usage skills with emphasis on fundamentals of writing and editing for business.

**POFT 1319 Records & Information Management I (2-4-3)** Introduction to basic records information management systems including manual and electronic filing.

## PSTR

**PSTR 1301 Fundamentals of Baking (2-4-3)** Fundamentals of baking including dough, quick breads, pies, cakes, cookies, and tarts. Instruction in flours, fillings, and ingredients. Topics include baking terminology, tool and equipment use, formula conversions, functions of ingredients, and the evaluation of baked products. Prerequisite: CHEF 1205, IFWA 1205, IFWA 1217

**PSTR 1342 Quantity Bakeshop Production (2-4-3)** Advanced baking techniques to include volume production of a variety of breads and desserts.

**PSTR 2431 Advanced Pastry Shop (2-6-4)** A study of classical desserts, French and international pastries, hot and cold desserts, ice creams and ices, chocolate work, and decorations. Emphasis on advanced techniques. Prerequisite: PSTR 1301

## PSYT

**PSYT 1313 Psychology of Personal Adjustment (2-2-3)** Overview of personal, social, and work adjustment skills.

## PTAC

**PTAC 1302 Introduction to Process Technology (2-2-3)** An introduction overview of the processing industries.

**PTAC 1308 Safety, Health, and Environment I (2-4-3)** An overview of safety, health, and environmental issues in the performance of all job tasks.

**PTAC 1310 Process Technology I - Equipment (2-4-3)** Introduction to the use of common processing equipment. Prerequisite: PTAC 1302

**PTAC 1332 Process Instrumentation I (2-4-3)** Study of the instruments and control systems used in the process industry including terminology, process variables, symbology, control loops, and basic troubleshooting.

**PTAC 1354 Industrial Processes (2-4-3)** The study of the common types of industrial processes.

**PTAC 2314 Principles of Quality (2-2-3)** Study of the background and application of quality concepts. Topics include team skills, quality tools, statistics, economics and continuous improvement.

**PTAC 2336 Process Instrumentation II (2-2-3)** Continued study of the instruments and control systems used in the process industries including terminology, process variables, symbology, control loops, and troubleshooting. Prerequisite: PTAC 1332

**PTAC 2346 Process Troubleshooting (2-4-3)** Instruction in the different types of troubleshooting techniques, procedures, and methods used to solve process problems. Prerequisite: PTAC 2420

**PTAC 2386 Internship - Process Technology/Technician (0-0-3)** A work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. A learning plan is developed by the college and the employer.

**PTAC 2387 Internship - Process Technology/Technician (0-0-3)** A work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. A learning plan is developed by the college and the employer.

**PTAC 2420 Process Technology II - Systems (2-4-4)** A study of various process systems including related scientific principles. Prerequisite: PTAC 1310

**PTAC 2438 Process Technology III - Operations (2-6-4)** This course emphasizes activities associated with the hands-on operations of process equipment.

## PTRT

**PTRT 1301 Introduction to Petroleum Industry (2-4-3)** An introduction to the various aspects of petroleum industry including equipment, systems, instrumentation, operations, and the various scientific principles. Addresses a variety of petroleum technologies: exploration, drilling, production, transportation, marketing, and chemical processing industries.

## RBPT

**RBPT 1370 Building Envelope Inspection (2-4-3)** Outlines procedures for improving the comfort, durability and energy efficiency of residential homes shell or envelope. Emphasis on air leakage and sealing measures, insulation types, proper installation of doors and windows, moisture fundamentals, indoor pollutants, and health and safety issues encountered when making energy improvements.

**RBPT 2325 Energy Rating Systems for Homes (2-4-3)** Use of computer software and rating criteria to evaluate and score homes using residential energy rating systems. Emphasizes gathering data from building plans, manufacturers' specifications, and onsite testing.

**RBPT 2329 Residential Verification and Rating (2-4-3)** A summary of the skills needed to be an energy rater and a green rater for homes. Emphasizes onsite building testing, use of rating software and criteria, producing reports, and presenting recommendations to improve building performance scores.

## RBTC

**RBTC 1309 Pneumatics (2-4-3)** A study of principles of pneumatics, including formulas, functions, and circuits with hands-on experience in these industrial automated systems. Prerequisite: HYDR 1305

**RBTC 1341 Vision Systems (2-4-3)** An overview of machine vision systems, including terminology and components. Topics include optics, sensors, lighting, image analysis, and user interfaces. Prerequisite: RBTC 2339

**RBTC 1343 Robotics (2-4-3)** Principles and applications of robots. Includes installation, interfacing, programming, maintenance, and safety of robots and robotic cells. Prerequisite: CETT 1303 or IEIR 1302

**RBTC 1345 Robot Interfacing (2-4-3)** A study of the basic principles of robot controllers, controller input/output, memory, and interfacing with computer integrated manufacturing. Prerequisite: RBTC 2339

**RBTC 1347 Electro-Mechanical Devices (2-4-3)** A study of electro-mechanical devices found in robotic systems. Includes transformers, switches, and solid state relays. Prerequisite: RBTC 1343

**RBTC 1355 Sensors (2-4-3)** Study of basic principles of industrial sensors for automated systems. Emphasis on the operation and application of position, rate, proximity, optoelectronics, ranging, and pressure switches.

**RBTC 2335 Numerical Controlled/Computer Numerical Control Programming (2-4-3)** A study of the principles and concepts of numerical control through computer applications, specifically in the area of programming for the control of machine tools in CIM.

**RBTC 2339 Robot Programming and Diagnostics (2-4-3)** Emphasis on the programming of industrial robots, the development of programming techniques, and the diagnosis of faults in systems. Prerequisite: RBTC 1343

**RBTC 2345 Robot Application, Set-up, and Testing (2-4-3)** A capstone course that provides the student with laboratory experience in the installation, set-up, and testing of robotic cells. Topics include maintenance. Prerequisite: RBTC 2339

**RBTC 2347 Computer Integrated Manufacturing (2-4-3)** The principles of computer integrated manufacturing, including case studies and implementation of process control techniques, CAD/CAM, operations, software, and networking for CIM systems. Prerequisite: RBTC 1343 or CETT 1325

## RNSG

**RNSG 1207 Nursing Jurisprudence (1-2-2)** A course in nursing jurisprudence and ethics with an emphasis on personal and professional responsibility. Study of the laws and regulations related to the provision of safe and effective professional nursing care. This course lends itself to either a blocked or integrated approach.

**RNSG 1210 Introduction to Community-Based Nursing (2-0-2)** Overview of the delivery of nursing care in a variety of community-based settings to promote health; application of systematic problem-solving processes and critical thinking skills, focusing on the examination of concepts and theories relevant to community-based nursing; and development of judgment, skill, and professional values within a legal/ethical framework.

**RNSG 1227 Transition to Professional Nursing (1-3-2)** Content includes health promotion, expanded assessment, analysis of data, critical thinking skills and systematic problem-solving process, pharmacology, interdisciplinary teamwork, communication, and applicable competencies in knowledge, judgment, skills, and professional values within a legal/ethical framework throughout the lifespan. This course lends itself to either a blocked or integrated approach.

**RNSG 1261 Clinical - Registered Nursing/Registered Nurse (0-0-2)** A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

**RNSG 1300 Health Assessment Across the Lifespan (2-2-3)** Development of skills and techniques required for a comprehensive nursing health assessment of patients across the lifespan. Includes assessment of patients' health promotion and maintenance, illness and injury prevention and restoration, and application of the nursing process within a legal/ethical framework. This course lends itself to either a blocked or integrated approach.

**RNSG 1301 Pharmacology (2-2-3)** Introduction to the science of pharmacology with emphasis on the actions, interactions, adverse effects, and nursing implications of drug classifications. Content includes the roles and responsibilities of the nurse in safe administration of medications within a legal/ethical framework. This course lends itself to either a blocked or integrated approach.

**RNSG 1343 Complex Concepts of Adult Health (2-2-3)** Integration of previous knowledge and skills related to common adult health needs into the continued development of the professional nurse as a provider of patient-centered care, patient safety advocate, member of health care team, and member of the profession in the care of adult patients and families with complex medical-surgical health care needs associated with body systems. Emphasis on complex knowledge, judgments, skills, and professional values within a legal/ethical framework. This course lends itself to a blocked approach.

**RNSG 1412 Nursing Care of the Childbearing and Childrearing Family (3-2-4)** Study of the concepts related to the provision of nursing care for childbearing and childrearing families. Application of systematic problem-solving processes and critical thinking skills, including a focus on the childbearing family during the perinatal periods and the childrearing family from birth to adolescence; and competency in knowledge, judgment, skill, and professional values within a legal/ethical framework. This course lends itself to a blocked approach.

**RNSG 1463 Clinical - Registered Nursing/Registered Nurse (0-0-4)** A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

**RNSG 2162 Clinical - Registered Nursing/Registered Nurse (0-0-1)** A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

**RNSG 2213 Mental Health Nursing (1-3-2)** Principles and concepts of mental health, psychopathology, and treatment modalities related to the nursing care of patients and their families. This course lends itself to a blocked approach.

**RNSG 2221 Professional Nursing: Leadership and Management (2-0-2)** Exploration of leadership and management principles applicable to the roles of the professional nurse. Includes application of knowledge, judgment, skills, and professional values within a legal/ethical framework. This course lends itself to a blocked approach.

**RNSG 2230 Professional Nursing Review and Licensure Preparation (1-2-2)** Review of concepts required for licensure examination and entry into the practice of professional nursing. Includes review of application process of National Council Licensure Examination for Registered Nurses (NCLEX-RN) test plan, assessment of knowledge deficits, and remediation. This course lends itself to either a blocked or integrated approach.

**RNSG 2262 Clinical - Registered Nursing/Registered Nurse (0-0-2)** A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

**RNSG 2432 Enhanced Concepts of Adult Health (3-2-4)** Enhanced concepts and skills for developing professional competencies in complicated nursing care situations involving adult patients/families with multiple body system problems. Emphasizes critical thinking, clinical reasoning, and determining legal/ethical values for optimization of patient care in intermediate and acute care settings. This course lends itself to a blocked approach.

## RSTO

**RSTO 1304 Dining Room Service (1-7-3)** Introduces the principles, concepts, and systems of professional table service. Topics include dining room organization, scheduling, and management of food service personnel. Prerequisite: CHEF 1205 IFWA 1205 IFWA 1217

**RSTO 1313 Hospitality Supervision (2-2-3)** Fundamentals of recruiting, selection, and training of food service and hospitality personnel. Topics include job descriptions, schedules, work improvement, motivation, applicable personnel laws and regulations. Emphasis on leadership development.

**RSTO 1380 Cooperative Education - Restaurant, Culinary, and Catering Management/Manager (1-0-3)** Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

**RSTO 1680 Cooperative Education - Restaurant, Culinary, and Catering Management/Manager (1-0-6)** Career-related activities encountered in the student's area of specialization offered through an individualized agreement among the college, employer, and student. Under the supervision of the college and the employer, the student combines classroom learning with work experience. Includes a lecture component.

**RSTO 2505 Management of Food Production and Service (2-9-5)** A study of quantity cookery and management problems pertaining to commercial and institutional food service, merchandising and variety in menu planning, and customer food preferences. Includes laboratory experiences in quantity food preparation and service. Prerequisite: CHEF 1441 CHEF 1445 PSTR 2431 RSTO 1313 (Pre or Co)

## SCIT

**SCIT 1318 Applied Physics (2-4-3)** Introduction to physics for industrial applications including vectors, motion, mechanics, simple machines, matter, heat, and thermodynamics.

**SCIT 1414 Applied General Chemistry I (3-3-4)** Applications of general chemistry emphasizing industry-related laboratory skills and competencies including laboratory safety and report writing. Addresses supporting chemical theories including atomic and molecular structure, nomenclature, chemical reactivity, gas laws, acids and bases, solutions, and an overview of organic chemistry.

**SCIT 1415 Applied General Chemistry II (3-3-4)** Applications of general chemistry emphasizing industry-related laboratory skills and competencies including laboratory safety and report writing. Addresses supporting chemical theories including covalent bonding, thermodynamics, equilibrium, reaction rates, electrochemistry, nuclear chemistry, and organic compounds. Prerequisite: SCIT 1414

**SCIT 1543 Applied Analytical Chemistry I (3-6-5)** Principles of quantitative analysis as related to industrial applications. Includes gravimetric and titrimetric analysis of practical samples by classical and standard methods. Prerequisite: SCIT 1415

**SCIT 2401 Applied Organic Chemistry I (3-3-4)** Applications of the chemistry carbon emphasizing industry-related laboratory skills and competencies. Prerequisite: SCIT 1415

**SCIT 2402 Applied Organic Chemistry II (3-3-4)** Continuation of the applications of the chemistry of carbon compounds emphasizing industry-related laboratory skills and competencies. Includes reaction mechanisms, spectroscopy, and synthetic methods. Prerequisite: SCIT 2401

## SMFT

**SMFT 1471 Vacuum Technology (3-4-4)** Introduction to and skill development of vacuum technology, vacuum principles, pumping systems, gauging, leak detection, and safety practices.

**SMFT 2450 Vacuum Thin Films (2-6-4)** Physical vapor deposition (PVD), chemical vapor deposition (CVD), and related systems. Includes planning, repairing, maintaining, and testing various systems such as evaporators, electron guns, ion plating, direct current (DC) and radio frequency (RF) sputtering systems. The course is intended to enhance and apply knowledge gained in previous vacuum-related classes. Other topics include the planning, repairing, maintaining, and coating of various chemical depositions used as coatings in manufactured optics and semiconductors. Prerequisite: SMFT 1471 or SMFT 2335

## SOLR

**SOLR 1273 Foundations of Solar Thermal Systems (1-4-2)** Discusses industry terminology, safety issues, solar thermal systems design and installation procedures.

**SOLR 1371 Introduction to Solar and Alternative Energy Technologies (2-4-3)** Introduction to Renewable Energy is an overview to the most common types of renewable energy with an emphasis on solar system types and applications. This course introduces solar system types, components, safety issues, and history.

**SOLR 1372 Foundations of Solar Photovoltaic Power Generation (2-4-3)** Solar electrical power generation using photovoltaic (PV) equipment. Includes calculation of power generation and demand requirements, installation process for solar system components, and strategies for optimizing system performance and reliability.

**SOLR 2275 Solar System Design, Installation, Troubleshooting & Repair (1-4-2)** Design considerations including site assessment and desired system operation, installation, commissioning, maintenance, operation, troubleshooting, repair and decommissioning. Review of safety issues, personal protection equipment, and tools of the trade associated with installation, operation, maintenance, troubleshooting and repair of solar systems.

**SOLR 2276 Special Projects in Solar Energy Systems (1-4-2)** This course will provide the student with opportunities for solar installations and hands on experience. Photovoltaic Systems as well as Solar Thermal Systems will be addressed. Individual students will be given the responsibility of supervising the planning and installation of their own systems.

**SOLR 2377 Codes for Alternative Energy, Efficiency & Conservation (2-4-3)** Apply various building and energy codes to solar and other alternate energy system installations. Emphasis will be on safety features of the codes and how the installation methods affect installers, occupants as well as any emergency responders that may have contact with the system and the structure on which it is installed. Energy efficiency, energy conservation, and the concept of a whole structure approach will be covered.

## SRGT

**SRGT 1244 Technological Sciences for the Surgical Technologist (2-0-2)** Specialized surgical modalities covered include endoscopy, microsurgery, therapeutic surgical energies, and other integrated science technologies.

**SRGT 1405 Introduction to Surgical Technology (3-2-4)** Orientation to surgical technology theory, surgical pharmacology and anesthesia, and patient care concepts.

**SRGT 1409 Fundamentals of Perioperative Concepts and Techniques (3-2-4)** In-depth coverage of aseptic technique principles and practices, infectious processes, wound healing and creation and maintenance of the sterile field.

**SRGT 1441 Surgical Procedures I (3-3-4)** Introduction to surgical pathology and its relationship to surgical procedures. Emphasis on surgical procedures related to the general, OB/GYN genitourinary, and orthopedic surgical specialties incorporating instruments, equipment, and supplies required for safe patient care.

**SRGT 1442 Surgical Procedures II (3-3-4)** Introduction to surgical pathology and its relationship to surgical procedures. Emphasis on surgical procedures related to the thoracic, peripheral vascular, plastic/reconstructive, ENT, cardiac, and neurological surgical specialties incorporating instruments, equipment, and supplies required for safe patient care.

**SRGT 1460 Clinical - Surgical Technology/Technologist (0-0-4)** A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

**SRGT 1461 Clinical - Surgical Technology/Technologist (0-0-4)** A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

**SRGT 2462 Clinical - Surgical Technology/Technologist (0-0-4)**

A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional. Prerequisite: SRGT 1461

## SRVY

**SRVY 1301 Introduction to Surveying (3-0-3)** An overview of the surveying profession. The history of surveying and its impact on the world. Review of the mathematics used in surveying. Introduction to basic surveying equipment with emphasis on measurements. Instruction on surveying procedures and the limitation of errors. Calculation to determine precision and error of closure.

## TECM

**TECM 1303 Technical Calculations (3-0-3)** Specific mathematical calculations required by business, industry, and health occupations.

**TECM 1349 Technical Math Applications (3-0-3)** Trigonometry and geometry as used in a variety of technical settings. Includes the use of plane and solid geometry to solve areas and volumes encountered in industry.

## VNSG

**VNSG 1119 Leadership and Professional Development (1-0-1)** Study of the importance of professional growth. Topics include the role of the licensed vocational nurse in the multi-disciplinary health care team, professional organizations, and continuing education.

**VNSG 1230 Maternal-Neonatal Nursing (2-0-2)** A study of the biological, psychological, and sociological concepts applicable to basic needs of the family including childbearing and neonatal care. Utilization of the nursing process in the assessment and management of the childbearing family. Topics include physiological changes related to pregnancy, fetal development, and nursing care of the family during labor and delivery and the puerperium.

**VNSG 1261 Clinical - Licensed Practical/Vocational Nurse Training (0-0-2)** A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

**VNSG 1304 Foundations of Nursing (3-0-3)** Introduction to the nursing profession including history, standards of practice, legal and ethical issues, and role of the vocational nurse. Topics include mental health, therapeutic communication, cultural and spiritual diversity, nursing process, and holistic awareness.

**VNSG 1327 Essentials of Medication Administration (3-0-3)** General principles of medication administration including determination of dosage, preparation, safe administration, and documentation of multiple forms of drugs. Instruction includes various systems of measurement.

**VNSG 1329 Medical-Surgical Nursing I (3-0-3)** Application of the nursing process to the care of the adult patient experiencing medical-surgical conditions along the health-illness continuum in a variety of health care settings.

**VNSG 1331 Pharmacology (3-0-3)** Fundamentals of medications and their diagnostic, therapeutic, and curative effects. Includes nursing interventions utilizing the nursing process.

**VNSG 1334 Pediatrics (3-0-3)** Study of the care of the pediatric patient and family during health and disease. Emphasis on growth and developmental needs utilizing the nursing process.

**VNSG 1402 Applied Nursing Skills I (3-3-4)** Introduction to and application of primary nursing skills. Emphasis on utilization of the nursing process and related scientific principles.

**VNSG 1432 Medical-Surgical Nursing II (3-2-4)** Continuation of Medical-Surgical Nursing I with application of the nursing process to the care of the adult patient experiencing medical-surgical conditions along the health-illness continuum in a variety of health care settings.

**VNSG 1462 Clinical - Licensed Practical/Vocational Nurse Training (0-0-4)** A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

**VNSG 2413 Applied Nursing Skills II (3-2-4)** Application of nursing skills to meet complex patient needs utilizing the nursing process and related scientific principles.

**VNSG 2463 Clinical - Licensed Practical/Vocational Nurse Training (0-0-4)** A health-related work-based learning experience that enables the student to apply specialized occupational theory, skills, and concepts. Direct supervision is provided by the clinical professional.

## WIND

**WIND 1300 Introduction to Wind Energy (3-0-3)** Introduction of wind technology, wind farm design, and wind power delivery.

**WIND 1302 Wind Safety (2-2-3)** Introduction to safety procedures and practices relating to turbine towers. Includes first aid training and CPR certifications.

**WIND 2310 Wind Turbine Materials and Electro-Mechanical Equipment (2-2-3)** Identification and analysis of the components and systems of wind turbine. Prerequisite: WIND 1300 WIND 1302 CETT 1303

**WIND 2455 Wind Turbine Troubleshooting and Repair (2-4-4)** Operation, maintenance, troubleshooting, and repair of wind turbine electro-mechanical systems. Prerequisite: CETT 1305 INMT 1317

**WIND 2459 Wind Power Delivery System (3-2-4)** Components, equipment, and infrastructure used in the production and transmission of electricity as related to wind turbine power. Prerequisite: CETT 1305

## WLDG

### **WLDG 1313 Introduction to Blueprint Reading for Welders (3-0-3)**

A study of industrial blueprints. Emphasis placed on terminology, symbols, graphic description, and welding processes. Includes systems of measurement and industry standards. Also includes interpretation of plans and drawings used by industry to facilitate field application and production.

**WLDG 1327 Welding Codes and Standards (2-4-3)** An in-depth study of welding codes and their development in accordance with structural standards, welding processes, destructive and nondestructive test methods. Prerequisite: WLDG 2413

**WLDG 1337 Introduction to Welding Metallurgy (2-4-3)** A study of ferrous and nonferrous metals from the ore to the finished product. Emphasis on metal alloys, heat treating, hard surfacing, welding techniques, forging, foundry processes, and mechanical properties of metal including hardness, machinability, and ductility. Prerequisite: WLDG 2413

### **WLDG 1391 Special Topics in Welder/Welding Technologist (2-4-3)**

**WLDG 1407 Introduction to Welding Using Multiple Processes (2-6-4)** Basic welding techniques using some of the following processes: Oxy-fuel welding (OFW) and cutting, shielded metal arc welding (SMAW), gas metal arc welding (GMAW), and gas tungsten arc welding (GTAW).

**WLDG 1417 Introduction to Layout and Fabrication (2-6-4)** A fundamental course in layout and fabrication related to the welding industry. Major emphasis on structural shapes and use in construction. Prerequisite: WLDG 1313

**WLDG 1428 Introduction to Shielded Metal Arc Welding (SMAW) (2-6-4)** An introduction to the shielded metal arc welding process. Emphasis placed on power sources, electrode selection, oxy-fuel cutting, and various joint designs. Instruction provided in SMAW fillet welds in various positions.

**WLDG 1434 Introduction to Gas Tungsten Arc (GTAW) Welding (2-6-4)** Principles of gas tungsten arc welding (GTAW), including setup, GTAW equipment. Instruction in various positions and joint designs. Prerequisite: WLDG 1407

**WLDG 1435 Introduction to Pipe Welding (2-6-4)** An introduction to welding of pipe using the shielded metal arc welding process (SMAW), including electrode selection, equipment setup, and safe shop practices. Emphasis on weld positions 1G and 2G using various electrodes. Prerequisite: WLDG 2435

**WLDG 1457 Intermediate Shielded Metal Arc Welding (SMAW) (2-6-4)** A study of the production of various fillets and groove welds. Preparation of specimens for testing in various positions. Prerequisite: WLDG 1428

**WLDG 2406 Intermediate Pipe Welding (2-6-4)** A comprehensive course on the welding of pipe using the shielded metal arc welding (SMAW) process. Welds will be done using various positions. Topics covered include electrode selection, equipment setup, and safe shop practices. Prerequisite: WLDG 2435

**WLDG 2413 Intermediate Welding Using Multiple Processes (2-6-4)** Instruction using layout tools and blueprint reading with demonstration and guided practices with some of the following welding processes: Oxy-fuel gas cutting and welding, shielded metal arc welding (SMAW), gas metal arc welding (GMAW), flux-cored arc welding (FCAW), gas tungsten arc welding (GTAW), or any other approved welding process. Prerequisite: WLDG 1407

**WLDG 2432 Welding Automation (2-6-4)** Overview of automated welding and cutting applications. Special emphasis on safe use and operation of equipment. Prerequisite: WLDG 2413

**WLDG 2435 Advanced Layout and Fabrication (2-6-4)** An advanced course in layout and fabrication. Includes production and fabrication of layout, tools, and processes. Emphasis on application of fabrication and layout skills. Prerequisite: WLDG 1417

**WLDG 2443 Advanced Shielded Metal Arc Welding (SMAW) (2-6-4)** Advanced topics based on accepted welding codes. Training provided with various electrodes in shielded metal arc welding processes with open V-groove joints in all positions. Prerequisite: WLDG 1457

**WLDG 2453 Advanced Pipe Welding (2-6-4)** Advanced topics involving welding of pipe using the shielded metal arc welding (SMAW) process. Topics include electrode selection, equipment setup, and safe shop practices. Emphasis on weld positions 5G and 6G using various electrodes. Prerequisite: WLDG 2435

## WMGT

**WMGT 1305 Introduction to Wildlife Management (3-0-3)** History of wildlife management based on its economic and ecological impact. Includes basic wildlife and habitat management techniques and discussion of threatened and endangered species.





# Continuing Education

## FAST Trac Airframe & Powerplant

The Texas State Technical College (TSTC) FAST Trac Airframe and Powerplant Program was developed to prepare veterans, active service personnel and civilian trainees to become well-rounded airframe and powerplant technicians with upward mobility potential. The curriculum is designed as an accelerated program of study around FAA-required curriculum. The program is designed to lead to immediate employment and answers a statewide and a nationwide need for FAA-rated airframe and powerplant technicians.

FAST Trac Airframe and Powerplant is available at the Abilene campus. Courses will soon be available in Waco and Marshall.

The program runs four days per week (including Saturdays), three hours per day over a 13-week period for a total of 160 hours of training.

(T)AERM 1091	General and Airframe	100 hrs
(T)AERM 1092	Powerplant	60 hrs
	Total program	160 hrs

Cost: \$5,000

### General and Airframe

Study of Federal Aviation Administration subject matter in the general and airframe curricula with a focus on building knowledge of new materials, techniques and physical skills. This training is designed to provide the knowledge and skills not provided by civilian or military training and experience that are required to obtain the civilian Aviation Maintenance Technician certificate.

Upon completion of this course, students will be able to:

- Weigh aircraft, perform weight and balance checks, and record data and information derived from weight and balance checks.
- Write descriptions of work performed, including aircraft discrepancies, corrective actions using typical aircraft maintenance records and required maintenance forms, records and inspection reports.
- Apply information contained in Federal Aviation Administration (FAA) and manufacturers' aircraft maintenance specifications, data sheets, manuals, publications, and related Federal Aviation regulations, airworthiness directives and advisory material.
- Analyze technical data and exercise mechanic privileges within the prescribed limitations.
- Perform precision measurement procedures; identify and select nondestructive testing methods; perform nondestructive testing and heat-treating procedures; identify and select aircraft hardware and materials; fabricate and install fluid lines and fittings; and inspect welds.
- Identify principles of basic aerodynamics; identify design principles of aircraft structures; and describe the theory of flight.
- Start, ground operate, move, service and secure aircraft; identify typical ground operation hazards and safety; inspect, identify, remove and treat aircraft corrosion.
- Calculate and measure electrical power, voltage, current, resistance and continuity; determine the relationship of voltage, current and resistance in electrical circuits; interpret aircraft electrical circuit diagrams, including solid-state devices and logic functions; inspect and service batteries.

- Repair and inspect aircraft electrical systems components; install, check and service airframe electrical wiring, controls, switches, indicators and protective devices; and inspect, check, troubleshoot, service and repair alternating- and direct-current electrical systems.
- Inspect, check, troubleshoot, service and repair heating, cooling, air conditioning, oxygen and pressurization systems and air cycle machines; airframe ice and rain control systems; smoke and carbon monoxide detection systems; and aircraft fire detection and extinguishing systems.
- Inspect, check, service, troubleshoot and repair aircraft fuel and management systems, fuel quantity-indicating systems, and hydraulic and pneumatic systems, and identify and select hydraulic fluids.
- Inspect, service and repair landing gear, retraction systems, shock struts, brakes, wheels, tires and steering systems, and service landing-gear systems.
- Select, install and remove special fasteners for metallic structures; inspect and repair sheet metal structures; install conventional rivets; form, lay out and bend sheet metal.
- Perform airframe conformity and airworthiness inspections.
- Rig fixed-wing aircraft; balance, rig and inspect movable primary and secondary flight control surfaces; and jack aircraft.

Prerequisites: FAA authorization to take General and Airframe written, oral and practical examinations.

### Powerplant

Study of Federal Aviation Administration subject matter in the General and Powerplant curricula with a focus on building knowledge of new materials, techniques and physical skills. This training is designed to provide the knowledge and skills not provided by civilian or military training and experience that are required to obtain the civilian Aviation Maintenance Technician certificate. Upon completion of this course, students will be able to:

- Weigh aircraft, perform weight and balance checks, and record data and information derived from weight and balance checks.
- Write descriptions of work performed, including aircraft discrepancies, corrective actions using typical aircraft maintenance records and required maintenance forms, records and inspection reports.
- Apply information contained in Federal Aviation Administration (FAA) and manufacturers' aircraft maintenance specifications, data sheets, manuals, publications and related Federal Aviation regulations, airworthiness directives and advisory material.
- Analyze technical data and exercise mechanic privileges within the prescribed limitations.
- Perform precision measurement procedures; identify and select nondestructive testing methods; perform nondestructive testing and heat-treating procedures; identify and select aircraft hardware and materials; fabricate and install fluid lines and fittings; and inspect welds.
- Identify principles of basic aerodynamics; identify design principles of aircraft structures; and describe the theory of flight.

- Start, ground operate, move, service and secure aircraft; identify typical ground operation hazards and safety; inspect, identify, remove and treat aircraft corrosion.
- Calculate and measure electrical power, voltage, current, resistance and continuity; determine the relationship of voltage, current and resistance in electrical circuits; interpret aircraft electrical circuit diagrams, including solid-state devices and logic functions; inspect and service batteries.
- Inspect, check, service and repair propeller synchronizing systems, ice control systems, fixed-pitch, constant-speed and feathering propellers and propeller governing systems, and repair aluminum alloy propeller blades.
- Identify the components of a reciprocating engine; inspect, troubleshoot, check, service and repair engine instrument systems; inspect, service and repair lubrication and exhaust systems.
- Maintain powerplant electrical systems and components; maintain powerplant ignition, starting and fire protection systems.
- Inspect, check, service, troubleshoot and repair engine fuel systems and components, fuel metering systems and components, reciprocating and turbine engine fuel metering systems, engine ice and rain control systems, heat exchangers, superchargers, turbine engine airflow and temperature control systems.
- Overhaul reciprocating engines; inspect, check, service and repair reciprocating engines and engine installations.
- Overhaul turbine engines; inspect, check and repair turbine engines.
- Perform powerplant conformity inspections and powerplant airworthiness inspections.



# NCCER Carpentry Level 1

Carpenters make up the largest building trades occupation in the industry, and those with all-around skills are in high demand.

## NCCER Core (73 hours)

The NCCER Core Curriculum is a prerequisite and foundation to all other Level 1 craft curriculum. Its modules cover topics such as basic safety, communication skills, and introduction to construction drawings. Completing this curriculum gives the trainee the basic skills needed to continue education in any craft area he or she chooses.

## NCCER Basic Framing NCCER (48 hours)

Knowledge and skills required to erect wood frame structures, with emphasis on layout and construction of floors, walls and roofs. Includes safety procedures for using hand and power tools and structural materials.

## Introduction to Carpentry NCCER (115 hours)

An introduction to the carpentry trade, including safety, tools, equipment, terminology and methods.

## Safety Component (14 hours)

OSHA General Industry/Construction Safety and Health provides an introduction to specific training techniques involving the safe handling of blood- and air-borne pathogens, as well as general safety and security on the premises. Addresses the right to know and MSDS. Outlines occupational Safety and Health Administration (OSHA) regulations, inspections, penalties and compliance. The trainee will be able to:

- Demonstrate proficiency in handling critical and safety situations.
- Explain the importance of performing tasks safely and correctly.
- Maintain a situation in compliance with OSHA regulations.

## Forklift Component (12 hours)

- Safety awareness, components identification, and field driving exercises.
- Analyzing hydraulic and electrical components and safety precautions.
- Discussion of preventing maintenance and basic repairs.
- Variety of exercises, lifting techniques and additional criteria evaluation such as surface conditions.
- Successfully demonstrate maneuvering exercises around simulated obstacle course.



## Program Information

- Program total: 262 hours.
- Tuition: \$4,500.
- Materials per student: \$500.
- Minimum of six students to make the course.
- Books, tools and labs included.
- Certifications: OSHA 10, Forklift, CPR.

The NCCER Carpentry Level 1 program is available at the Harlingen campus.

NCCER Carpentry Level 1	<u>262 hours</u>
Total program	262 hours

Cost: \$4,500

# Commercial Driver's License

Overview of the State of Texas Class A Commercial Driver's License written test. Includes preparation for mastery of the Commercial Driver's License written examination, general truck-driving skills with hands-on component, and instruction coordinated with the Department of Transportation.

- Describe basic inspection and testing techniques used for a pre-trip inspection.
- Describe basic air brakes inspection and test.
- Demonstrate proper shifting, double clutching, backing, coupling and uncoupling, and yard skills.
- Understand and pass a pre-trip inspection, general knowledge and air brakes exam.
- Upon passing the course (70 percent), each student will receive a certificate of completion.

Prerequisites: Valid Class C Drivers License, pass a DOT physical and drug screen, obtain a Class A learner's permit, hold a valid Social Security card.

The Commercial Driver's License program is available at the Harlingen campus.

CVOP 1013	Professional Truck Driver	<u>160 hours</u>
	Total program	160 hours

Cost: \$4,500



# Computerized Numerical Control

Computerized Numerical Control is available at the Waco campus.

## Basic Shop I – Module 1

The CNC Operator – Basic Shop (Level I) program is a 160-clock-hour program that provides both didactic and experiential learning, including:

- Safety for Machine Shop.
- Reading Blueprints.
- Semi-precision and Precision Measurement.
- Shop Math I.
- Speeds and Feeds.
- Materials.
- Layout.

Successful students demonstrate the mastery of coursework and meet requirements to obtain a NIMS Level 1 Measurement, Material and Safety certification.

MCHN 1038	Machine Shop	144 hrs
MCHN 1042	Machine Shop Math	<u>16 hrs</u>
	Total program	160 hrs

Cost: \$4,400

## Basic Shop II – Module 2

The CNC Operator – Basic Shop (Level II) program is a 160-clock-hour program that expands on the Basic Shop Level I program and provides both didactic and experiential learning, including:

- Benchwork.
- Manual Machine Overview.
- Manual Machine Operations.
- Work-holding.
- Machine Set-up.
- Cutter Comp and Tooling.

Successful students demonstrate the mastery of coursework and meet requirements to obtain a NIMS Level 1 Job Planning, Benchwork and Layout certification.

MCHN 1032	Bench Work and Layout	64 hrs
MCHN 1041	Basic Machine Shop II	96 hrs
	Total program	160 hrs

Cost: \$4,400

## Operations – Module 3

The CNC Operator - Operations (Level III) program is a 160-clock-hour program that expands on the Advanced Mechanical Systems program and provides both didactic and experiential learning, including:

- CNC 3-Axis Mill and CNC Lathe.
- Machine Motion.
- Coordinate System.
- Cutter Compensation and Tooling.
- Control Panel.
- Machine Startup.
- Loading Tools.

- Setting Work Coordinates.
- Tool Length Offsets.
- Running Program.
- Powering Down.

Successful students demonstrate the mastery of coursework and meet requirements to obtain a NIMS CNC Operations Turning Level 1 and NIMS CNC Operations Milling Level 1 certification.

MCHN 2002	Intermediate Milling Operations	80 hrs
MCHN 2037	Advanced Milling Operations	80 hrs
	Total program	160 hrs

Cost: \$4,400

## Lathe & Mill Programming – Module 4

The CNC Operator – Lathe and Mill programming (Level IV) Program is a 160-clock-hour program that expands on the Operations program and provides both didactic and experiential learning, including:

- Programming Methods.
- Tool Motion and Cutter Compensation.
- Circular Interpolation.
- Fixed Cycles.
- Haas Intuitive Programming.
- Introduction to CAD/CAM systems.
- Learning Objectives:.
- CNC Milling Programming Level 1.
- CNC Turning Programming Level 1.

Successful students demonstrate the mastery of coursework and meet requirements to obtain a NIMS CNC Operations Turning Level 1 and NIMS CNC Operations Milling Level 1 certification.

MCHN 1010	Grinders, Tools and Cutters	20 hrs
MCHN 1026	Intro to Computer Aid	<u>140 hrs</u>
	Total program	160 hrs

Cost: \$4,400

## NCCER Electrical Level 1

Electricians install electrical systems, wiring and other electrical components, as well as following blueprints and conforming to national, state and local codes.

### NCCER Core (73 hours)

The NCCER Core Curriculum is a prerequisite and foundation to all other Level 1 craft curriculum. Its modules cover topics such as basic safety, communication skills, and introduction to construction drawings. Completing this curriculum gives the trainee the basic skills needed to continue education in any craft area he or she chooses.

### Basic Electrical Wiring NCCER (113 hours)

Presentation of the theory of residential electric circuits. Topics include load calculations and safety in electrical work, installation of wiring, load protection, ground fault, and other devices commonly used in 110-volt household applications.

### Safety Component (14 hours)

OSHA General Industry/Construction Safety and Health provides an introduction to specific training techniques involving the safe handling of blood- and air-borne pathogens, as well as general safety and security on the premises. Addresses the right to know and MSDS. Outlines occupational Safety and Health Administration (OSHA) regulations, inspections, penalties and compliance. The trainee will be able to:

- Demonstrate proficiency in handling critical and safety situations.
- Explain the importance of performing tasks safely and correctly.
- Maintain a situation in compliance with OSHA regulations.

### Forklift Component (12 hours)

- Safety awareness, components identification and field driving exercises.
- Analyzing hydraulic and electrical components and safety precautions.
- Discussion of preventing maintenance and basic repairs.
- Variety of exercises, lifting techniques and additional criteria evaluation such as surface conditions.
- Successfully demonstrate maneuvering exercises around simulated obstacle course.



### CPR/AED/First Aid (12 hours)

- Lifesaving skills of respiratory (choking and near-drowning) and cardiac emergencies involving adults, children and infants. Automated External Defibrillator inclusive. Instruction in first aid for injured and ill persons. Students will discuss and demonstrate assessment and management of injured and/or ill persons as recommended by the certifying agency. Students must meet requirements as specified by the certifying agency. Show proficiency according to current guidelines of the credentialing agency. Lab is required. Upon successful completion of the course, students will receive a certification card.
- Licensure/Certification Agency: American Heart Association, American Safety and Health Institute, National Safety Council.

### Program Information

- Program total: 224 hours.
- Tuition: \$4,500.
- Materials per student: \$500.
- Minimum of six students to make the course.
- Books, tools and labs included.
- Certifications: OSHA 10, Forklift, CPR.

The NCCER Electrical Level 1 program is available at the Harlingen campus.

NCCER Electrical Level 1  
Total program

224 hours  
224 hours

Cost: \$4,500

## Emergency Medical Technician

The TSTC EMS program prepares students to care for people in the prehospital setting. The primary focus of the educational process is developing students' skills to make clinical assessments upon which to base treatment plans. While a large part of the curriculum focuses on preparing students with the skills to care for patients in a medical crisis, the program feels that it is equally important to recognize that the majority of what EMS does on a day-to-day basis is help people in any situation. The TSTC EMS program expects students to embrace this aspect of the profession by showing respect and compassion for every person they encounter during, and following, their education. The TSTC EMS program hopes to provide the student with the skills necessary to help them in the field as well as in life.

Emergency Medical Technician is available at the Harlingen campus.

### EMT Basic

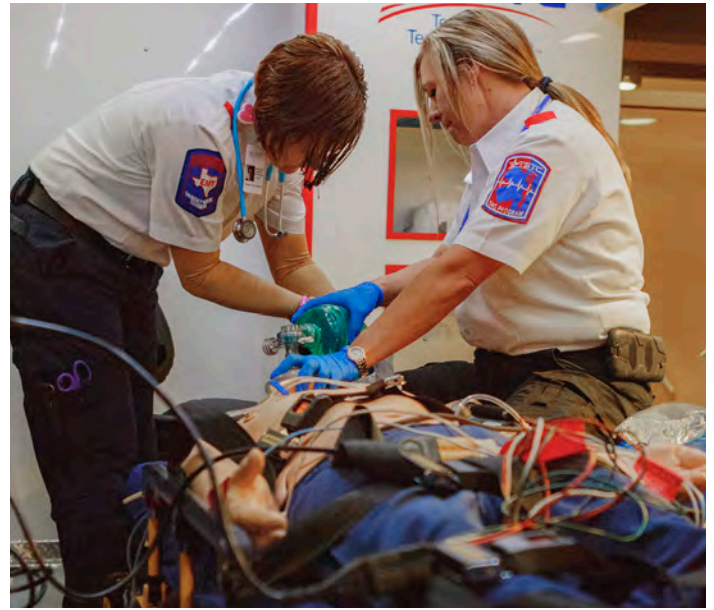
EMSP 1001	EMT Basic	112 hrs
EMSP 2037	Emergency Procedures	76 hrs
EMSP 1064	EMT Basic Clinical	24 hrs
EMSP 1060	EMT Basic Practicum	<u>48 hrs</u>
	Total program	260 hrs

Cost: \$2,400

### EMT Paramedic

EMSP 1091	Emergency Medical Technician - Paramedic	64 hrs
EMSP 1067	EMS Practicum Paramedic Part 1	78 hrs
EMSP 1038	Intro to Advance Practice	96 hrs
EMSP 1068	EMS Practicum Paramedic Part 2	78 hrs
EMSP 1060	Clinical Emergency Medical Technician - Paramedic	60 hrs
EMSP 1091	Emergency Medical Technician - Special Topics	100 hrs
EMSP 2044	Cardiology	96 hrs
EMSP 2034	Medical Emergencies	112 hrs
EMSP 1063	EMT Paramedic Clinical	60 hrs
EMSP 1065	EMS Practicum Paramedic Part 3	78 hrs
EMSP 1064	EMT Practicum	78 hrs
EMSP 1055	Trauma Management	64 hrs
EMSP 2043	Assessment Based Management	<u>48 hrs</u>
	Total program	1,012 hrs

Cost: \$6,000



# FAST Trac Associate Electronic Technician (CETa)

The Texas State Technical College (TSTC) Workforce Development FAST Trac Accelerated Training programs are designed to prepare civilians, veterans and active-service personnel to become well-rounded, highly skilled employees with upward mobility potential. Curriculum is designed as an accelerated program of study around specific topics that lead to industry-recognized certifications. All programs are designed to lead to immediate employment and answer a statewide and a nationwide need for a highly skilled workforce.

The Associate Electronics Technician (CETa) certification is designed for technicians who have less than two years of experience or trade school training as electronics technicians. All Certified Electronics Technicians must pass the Associate exam before they can qualify to sit for a full Journeyman certification. The CETa exam covers topics such as electrical theory, electronic components, electrical circuits, block diagrams, test equipment, safety precautions, radio communications, digital concepts and telecommunications.

The CETa accelerated program at TSTC is intensive training that prepares you for an entry-level position as an associate-level electronic technician. Technical instruction and hands-on training on electric systems and electronics give trainees the skills necessary to begin a well-paying and rewarding career. The course will cover fundamentals of electricity and electronics with a focus on electro-mechanical devices, switches and relays used in robotics systems. Upon completion of this course students will be able to:

- Possess knowledge of basic electronics.
- Practice electrical safety (lockout/tagout, and high-voltage safety).
- Ability to use meters and electronic test equipment.
- Ability to solder and inspect solder joints.
- Ability to test and replace faulty components.
- Upon passing the course (70 percent) each student will receive a certificate of completion.

The program runs five days per week, four hours per day over a five-week period for a total of 88 hours of training. Upon successful completion of the training, trainees are required to successfully pass the required CETa certification exam.

FAST Trac Associate Electronic Technician (CETa) training is available at the Abilene, Marshall and Waco campuses.

<b>FAST Trac Associate Electronic Technician (CETa)</b>		
RBTC 1047	TSTC FAST Trac Associate Electronics Technician (CETa)	88 hrs
	Total program	88 hrs

Cost: \$2,600



# Heavy Duty Diesel Engine Specialist

The Diesel Technology student will acquire the knowledge and skills necessary for the repair of diesel engines and troubleshooting/diagnostic procedures through a combination of lecture and lab work over the course of six weeks. Our classrooms and labs are interactive and have a real-world setting. This program gives students knowledge and hands-on skills to prepare them for a rapidly growing industry that is requiring a growing number of qualified technicians.

The Heavy Duty Diesel Engine Specialist program is available at the Harlingen campus.

TDEMR 1001	Heavy Duty Diesel Engine Specialist	232 hours
	Total program	232 hours

Cost: \$4,500

## Industrial Maintenance Technician

Industrial Maintenance Technician is available at the Waco campus.

### Basic Mechanical Systems – Module 1

The Industrial Maintenance Technician - Basic Mechanical Systems (Level I) program is a 160-clock-hour program that provides both didactic and experiential learning in areas of safety, mechanical systems, rigging and basic wiring, including:

- Shop Essentials
- Shop Safety
- Mechanical Systems-Part 1
- Mechanical Systems-Part 2
- Rigging
- Introduction to Electrical Wiring/Systems

ARCE 2052	Mechanical Electrical Systems	80 hrs
DEMR 1000	Intro to Shop Safety & Tools	32 hrs
ELPT 2035	Electrical Theory & Devices	40 hrs
HYDR 1001	Rigging and Conveying Systems	8 hrs
	<b>Total program</b>	<b>160 hrs</b>

Cost: \$4,100

### Advanced Mechanical Systems – Module 2

The Industrial Maintenance Technician - Advanced Mechanical Systems (Level II) program is a 160-clock-hour program that expands on the Basic Mechanical Systems program and provides both didactic and experiential learning in areas of safety, mechanical, pneumatic and hydraulic systems, including:

- Shop Safety
- Introduction to Electrical Wiring/Systems
- Pneumatic Systems-Part 1
- Pneumatic Systems-Part 2
- Hydraulic Systems-Part 1
- Hydraulic Systems-Part 2

DEMR 1000	Intro to Shop Safety & Tools	8 hrs
ELPT 1000	Basic Electrical Wiring	32 hrs
HYDR 1045	Hydraulics and Pneumatics	60 hrs
RBTC 1009	Pneumatics	60 hrs
	<b>Total program</b>	<b>160 hrs</b>

Cost: \$4,100

### Electrical & Motor Control Systems – Module 3

The Industrial Maintenance Technician – Electrical & Motor Control Systems (Level III) program is a 160-clock-hour program that expands on the Advanced Mechanical Systems program and provides both didactic and experiential learning in areas of electrical theory and application, as well as motor control systems, including:

- Shop Safety
- Electrical Theory and Application Systems-Part 1
- Electrical Theory and Application Systems-Part 2
- Electrical Theory and Application Systems-Part 3
- Basic Motor Controls



DEMR 1000	Intro to Shop Safety & Tools	8 hrs
ELPT 1011	Basic Electrical Theory	110 hrs
ELPT 1041	Motor Control	42 hrs
	<b>Total program</b>	<b>160 hrs</b>

Cost: \$4,100

### PLC & Robotics – Module 4

The Industrial Maintenance Technician PLC & Robotics (Level IV) program is a 160-clock-hour program that expands on the Operations program and provides both didactic and experiential learning in areas of safety, programmable logic controller and robotics systems, including:

- Shop Safety
- Introduction to Motor Controls
- Basic PLC
- Allen Bradley PLC Control
- Robotics-Part 1
- Robotics-Part 2
- Quality Systems
- Maintenance Strategies

DEMR 1000	Introduction to Shop Safety and Tools	8 hrs
ELPT 1041	Motor Control	80 hrs
PTAC 2014	Principles of Quality	24 hrs
RBTC 1043	Robotics	48 hrs
	<b>Total program</b>	<b>160 hrs</b>

Cost: \$4,100

## Welding

Accelerated Welding is available at the Waco campus.

### Fillet Welds 1F - 4F – Module 1

The Welding (Level I) program is a 160-clock-hour program that provides both didactic and experiential learning in fillet welds 1F-4F (SMAW or FCAW).

This course is designed to instruct arc welding and safety guidelines using the Shield Metal Arc Welding process (SMAW) and or Flux Core Arc Welding process (FCAW) on carbon plate for fillet welds.

It teaches the basics of the craft; students start with safety, cutting, grinding and SMAW welding on carbon steel for fillet welds. In addition, students will culminate their ability to weld in three positions (horizontal, vertical and overhead).

Students will be trained using the same SMAW welding rods and FCAW wires that are currently used in the welding industry for fillet welds. In addition, students learn how to be safe on the jobsite. Emphasis is placed on safety practices that are current key issues for local industry. Students are instructed on the same equipment that is used in the industry today.

WLDG 1021	Welding Fundamentals	<u>160 hrs</u>
	Total program	160 hrs

Cost: \$5,100

### Groove Welds 1G - 4G – Module 2

The Welding (Level II) program is a 160-clock-hour program that provides both didactic and experiential learning in groove welds 1G-4G (SMAW or FCAW).

This course is designed to instruct arc welding and safety guidelines using the Shield Metal Arc Welding process (SMAW) and or Flux Core Arc Welding process (FCAW) on carbon plate for groove welds.

It teaches the basics of the craft; students start with safety, cutting, grinding and SMAW welding on carbon steel for groove weld. In addition, the student will culminate the ability to weld in three positions (horizontal, vertical and overhead) with or without backing plates.

Students will be trained using the same SMAW welding rods and FCAW wires that are currently used in the welding industry. In addition, students learn how to be safe on the jobsite. Emphasis is placed on safety practices that are current key issues for local industry. Students are instructed on the same equipment that is used in the industry today.

WLDG-1012	Intro to Flux Core Arc Welding (FCAW)	80 hrs
WLDG-1028	Intro To Shield Metal Arc Welding (SMAW)	<u>80 hrs</u>
	Total program	160 hrs

Cost: \$5,100

### Welds on Pipe 1G & 2G – Module 3

The Welding (Level III) program is a 160-clock-hour program that provides both didactic and experiential learning in groove welds on pipe (1G & 2G).

This course is the first component of pipe welding and is designed to instruct welders in welding safety and the Shield Metal Arc Welding process (SMAW) of welding pipe to either meet ASME (vertical up) or API (vertical down) welding code.

The purpose of this module is to advance structural welders and instruct them on how to weld pipe (1G & 2G).

Students are given all the basic knowledge and skills required to become an employable entry-level pipe welder. Upon successful completion of this course, students will be prepared to test for an American Welding Society (AWS) certification.

WLDG 1035	Intro to Pipe Welding	<u>160 hrs</u>
	Total program	160 hrs

Cost: \$5,100

### Welds on Pipe 5G & 6G – Module 4

The Welding (Level IV) program is a 160-clock-hour program that provides both didactic and experiential learning in groove welds on pipe (5G & 6G).

This course is the second component of pipe welding and is designed to instruct welders in welding safety and the Shield Metal Arc Welding process (SMAW) of welding pipe to either meet ASME (vertical up) or API (vertical down) welding code.

The purpose of this module is to advance structural welders and instruct them on how to weld pipe (5G & 6G).

Students are given all the basic knowledge and skills required to become an employable entry-level pipe welder. Upon successful completion of this course, students will be prepared to test for an American Welding Society (AWS) certification.

WLDG 1041	Pipe Welding	80 hrs
WLDG 1057	Intermediate Shield Metal Arc Welding (SMAW)	<u>80 hrs</u>
	Total program	160 hrs

Cost: \$5,100

# FAST Trac Intermediate Welding

Accelerated Welding is available at the Abilene, Marshall and Waco campuses.

The Texas State Technical College (TSTC) Workforce Development FAST Trac Accelerated Training programs are designed to prepare civilians, veterans and active-service personnel to become well-rounded, highly skilled employees with upward mobility potential. Curriculum is designed as an accelerated program of study around specific topics that lead to industry-recognized certifications. All programs are designed to lead to immediate employment and answer a statewide and a nationwide need for a highly skilled workforce.

The Intermediate Welding accelerated program at TSTC is intensive training that prepares you for an entry-level position as a certified welder. Students will receive technical instruction and hands-on training using the tools and welding equipment necessary to complete the AWS 3G & 4G FACW and AWS 3G & 4G SMAW certification exams. The wide variety of skills acquired through the Intermediate Welding program will be extremely beneficial since the brightest employment outlook is for generalists, not specialists.

The TSTC FAST Trac Intermediate Welding program is a performance-based program with no prerequisite courses or certifications. Final certification will provide "transferrable" AWS credentials that you may take with you wherever you go. The TSTC FAST Trac Intermediate Welding program trains each student in the procedures used in the structural steel and sheet metal welding industries. Certification tests for the TSTC FAST Trac Intermediate Welding program are performed at each of our participating campuses using a certified welding inspector to monitor the projects. Finished projects are then shipped to the AWS-accredited testing facilities located in Red Oak, Texas, for final certification.



The course will cover didactic and experiential learning in fillet welds 1F-4F (SMAW or FCAW) and groove welds 1G-4G (SMAW or FCAW). Upon completion of this course, students will be able to:

- Adhere to welding safety rules.
- Understand safety, health and environmental rules and regulations for welding.
- Use an acetylene torch to cut steel parts.
- Explain welding theory, equipment and selection process.
- Prepare metal parts to be welded, including degreasing, cleaning, grinding and inspecting.
- Set up a SMAW welder for operation and make basic welds.
- Use a FCAW welder to make basic welds on flat steel.
- Visually inspect welds and identify defects.
- Use plasma cutter to cut flat stock.

The program runs five days per week, four hours per day over a seven-week period for a total of 140 hours of training. Upon successful completion, trainees are required to successfully pass the required four-hour AWS Bend Test certification exam.

FAST Trac Intermediate Welding	140 hrs
Total program	140 hrs

Cost: \$4,200

# NCCER Welding Safety

NCCER Welding Safety is available at the Harlingen campus.

A welding technician works in the area of fabrication, construction and manufacturing industries.

### NCCER Core (73 hours)

The NCCER Core Curriculum is a prerequisite and foundation to all other Level 1 craft curriculum. Its modules cover topics such as basic safety, communication skills, and introduction to construction drawings. Completing this curriculum gives the trainee the basic skills needed to continue education in any craft area he or she chooses.

### NCCER Fundamentals of Oxy-Fuel Welding and Cutting (40 hours)

Oxy-fuel welding and cutting equipment. Includes equipment safety, setup and maintenance.

### NCCER Introduction (SMAW) (130 hours)

An introduction to the shielded metal arc welding process. Emphasis placed on power sources, electrode selection and various joint designs.

### NCCER Intermediate (SMAW) (115 hours)

A study of the production of various fillet and groove welds. Preparation of specimens for testing in various positions.

### Program Information

- Program total: 358 hours.
- Tuition: \$5,000.
- Materials per student: \$500.
- Books, tools and labs included.

NCCER Welding Safety	358 hrs
Total program	358 hrs

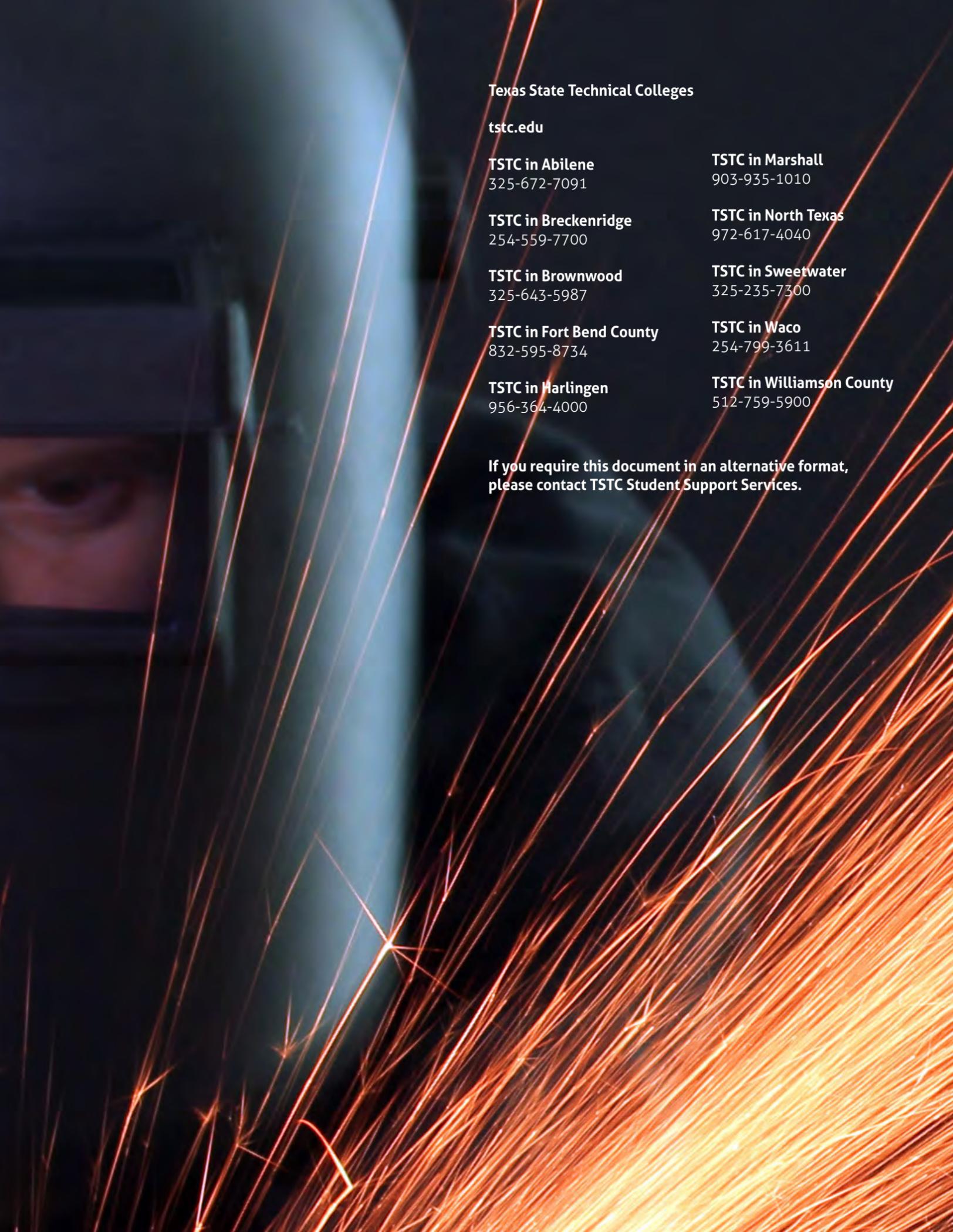
Cost: \$5,000





# Faculty

TSTC faculty bring to the classroom years of industry experience and education. To view a complete list, go to **[tstc.edu/currvitae/cv](https://tstc.edu/currvitae/cv)**.



**Texas State Technical Colleges**

**tstc.edu**

**TSTC in Abilene**  
325-672-7091

**TSTC in Marshall**  
903-935-1010

**TSTC in Breckenridge**  
254-559-7700

**TSTC in North Texas**  
972-617-4040

**TSTC in Brownwood**  
325-643-5987

**TSTC in Sweetwater**  
325-235-7300

**TSTC in Fort Bend County**  
832-595-8734

**TSTC in Waco**  
254-799-3611

**TSTC in Harlingen**  
956-364-4000

**TSTC in Williamson County**  
512-759-5900

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