

At Western Tech, this word is more than a simple greeting; it represents the open door to all those who wish to enjoy a real-world experience in a professional school. It is a belief that is embodied by each and every staff member from the time a student first contacts us, through graduation and ongoing career assistance. Family-owned and operated for over three generations and fifty years, Western Tech began as a place where students could translate their passions into careers they loved to pursue. The real-world approach is one of the many reasons our graduates have found success in their careers.

Education is more than words in a book or information that can be found on a computer. It is a combination of hands-on experience, traditional classroom work, and industry-specific career development. Western Tech utilizes high-tech facilities and equipment, combined with instruction given from our highly qualified instructors that prepares students with the skills that are applicable the first day on the job. The school's owners and administrators pledge to provide high quality facilities, equipment, and instructors for the specialty areas that are offered.

Finally, Western Tech stands by its students and is committed to supporting them from the time of first contact, during their program of study and on through graduation and employment. In order to ensure our graduates are successful beyond graduation, Western Tech makes available ongoing career assistance and provides opportunities for graduates to refresh and update their technical skills.

Western Tech is a total package of expert instruction and student support.

**The Staff, Faculty, and Students welcome you to  
Western Tech!**

### **OUR MISSION**

The Mission of Western Technical College is to: Provide quality training and education in a caring, professional environment that prepares new students and working adults with the skills they need to succeed and advance in their chosen careers.

## TABLE OF CONTENTS

Accreditation/Approvals	1
History, Facilities & College Philosophy	2
Admissions	4
General Information	6
Consumer Information	7
International Students	8
SEVIS I-20/F-1 Visa Requirements	8
Student Financial Aid Services	10
Active Military and Veterans	17
<b>Programs/Course Description</b>	
<b>Certificate Programs</b>	
Advanced Welding Technology	19
Commercial Driver Training	24
Diesel Advanced Technology Education	29
Massage Therapy	41
Medical Billing and Coding	53
Medical Clinical Assistant	60
<b>Associate of Occupational Studies Degrees</b>	
Automotive Technology	68
Diesel Mechanics	83
ARefrigeration and HVAC Technology	104
<b>Associate of Applied Science Degrees</b>	
Electronics Engineering Technology	115
Information Systems and Security	125
Physical Therapist Assistant	133
<b>Baccalaureate Degrees</b>	
Business Administration	146
Nursing	164
Policies and Standards	190

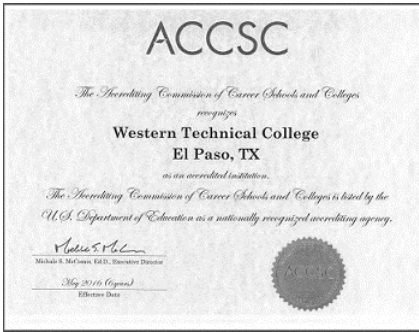
Student Code of Conduct	192
Support Services	193
Student Complaint/Grievance Procedure	193
Internship/Clinical Requirements	194
Family Educational Rights and Privacy Act (FERPA)	198
Graduation Requirements and Services	201
Graduation Ceremonies	201
Certificates/Diplomas	201
Continuing Education	202
Career services	203
Where are WTC graduates working	204
Cancellation and Refunds Policy	210
Administration	Catalog Addendum p. 1
Faculty	Catalog Addendum p. 2
College Schedules	Catalog Addendum p. 10
Tuition, Registration, Book and Tool Costs	Catalog Addendum p. 15
Student Class Break Schedule	Catalog Addendum p. 18
Membership	Catalog Addendum p.19
ACCSC Graduate Employment Summary	Catalog Addendum p. 20

NOTE: Western Tech maintains a separate Addendum to the School Catalog that includes an updated list of key administrators, program directors, faculty, class hours and schedules, break schedules, tuition, book & tool costs, start dates, holidays, and graduate employment summary. Prior to enrolling, all applicants will receive this information.

**Revised: October 1, 2019**

# ACCREDITATION/APPROVALS

(The original accreditation and licensure documents are displayed at each campus.)



## ACCREDITATION

Western Tech is accredited by the Accrediting Commission of Career Schools and Colleges (ACCSC) which is listed by the U.S. Department of Education (USDOE) as a nationally recognized accrediting agency.

## APPROVALS

Western Tech is approved and regulated by the Texas Workforce Commission (TWC), Career Schools and Colleges Section, Austin, Texas. Western Tech's degree-granting programs are approved and regulated by the Texas Higher Education Coordinating Board (THECB). Western Tech's Nursing Program is regulated by The Texas Board of Nursing. The Massage Therapy Program is approved and regulated by the Texas Department of Licensing and Regulation (TDLR). The College's programs are approved to train veterans by the Texas Workforce Commission and foreign students by the U.S. Department of Immigration and Naturalization (INS).

### WESTERN TECH

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I certify that the information presented in this catalog is correct to the best of my knowledge and belief.  
The contents of this catalog are subject to change without notice.

*Brad Kuykendall*

Brad Kuykendall  
CEO

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# HISTORY, FACILITIES & COLLEGE PHILOSOPHY

## HISTORY

Western Technical College (WTC) started operation on January 1, 1970, and since that time has expanded both in size and enrollment. Currently, Western Technical College is celebrating its 50<sup>th</sup> year in business.

Starting with a basic welding curriculum, new programs have been added periodically. Refrigeration and Air Conditioning was added in 1971 and Automotive in 1975.

In January of 1979, El Paso Trade School became accredited by the National Association of Trade and Technical Schools (NATTS), which is now known as the Accrediting Commission of Career Schools and Colleges (ACCSC). In 1980, the school expanded by adding a branch campus, and added Electronics in 1980, Microcomputer training in 1983, Medical Assisting in 1984, Health Information Technology in 1994.

In June of 1986, the school underwent a name change. Since the previous name, El Paso Trade School, no longer accurately reflected the “high tech” courses taught at the school, the name was changed to Western Technical Institute (WTI).

The branch campus moved to a more modern facility in 2001. The Microcomputer Technology program was split to become two distinct tracks known today as Information Systems and Security and Electronics Engineering Technology. The main campus relocated into a spacious 150,000 square foot facility in late 2005. The main campus was approved to offer certificate programs in Performance Tuner and in Diesel Mechanics. Pipe Welding, Diesel, Performance Tuner, and Massage Therapy in 2006. Upon expert advice from employer advisory boards, the courses and programs at WTC are constantly updated to conform to industry needs.

As a result of the changes to the programs and locations, in March of 2005, the school underwent another name change. The name Western Technical College ([www.westerntech.edu](http://www.westerntech.edu)) is more modern, up-to-date, and better reflects the careers and degrees offered by the College.

On July 18, 2007, WTC was approved to offer its first Associate of Applied Science (AAS) degree in Physical Therapist Assistant.

In 2013, WTC was approved to offer a Certificate of Completion in Performance Tuner, and in 2014, WTC also began a program offering of Automotive Technology with a sub-specialty in Light Duty Diesel. Furthermore, Diesel Mechanics and Performance Tuner were also moved to Sub-Specialty offerings in Automotive Technology.

In December 2014, WTC was approved at the branch campus to begin offering distance education for the Medical Billing and Coding Program, and all the General Education courses in our AAS degree programs. The education platform is a hybrid of on-ground and online. The launch occurred on February 09, 2015. In September 2015, WTC’s Branch Campus was also approved to offer Distance Education in a hybrid platform training in Information Systems and Security, Electronics Engineering Technology and Business Administration and Management. In July,

WTC was approved to offer another AAS Degree in Business Administration and Management for both the main and branch campus. This was the first AAS degree offering for the main campus.

In October 2016, WTC’s Main and Branch Campuses were approved to begin offering distance education in a hybrid platform for the Medical/Clinical Assistant with X-Ray Technology certificate program. Upon receiving the CAAHEP programmatic certification, 2019, the X-Ray component was removed from the program due to expert input from industry.

On March 2017, WTC’s Main and Branch Campuses were approved to begin offering a Bachelor in Business Administration (BBA) Degree.

In April 2017, WTC’s Main Campus was approved to begin offering distance education in a hybrid platform for the Auto and Heavy Truck Division AOS degree programs and the Refrigeration and HVAC Technology AOS degree program.

In January, 2018, the Main Campus was approved to begin offering the Commercial Driver Training Program latest certificate program in Commercial Driver Training (CDT).

In March, 2019, the Bachelor of Science in Nursing was approved for the Branch Campus only, and the Diesel Advanced Technology Education (DATE) program was approved to be offered at the Main Campus only.

## FACILITIES

Western Tech occupies two modern campuses designed to enhance learning and provide students a real-world entry-level experience prior to employment. Each campus houses different programs and allows accommodation to a larger number of people across the city of El Paso. Western Tech offers wireless network services throughout each campus which allows faculty, staff and guests of the College to utilize the wireless network.

WTC received approval for a Satellite Campus in February 2019 which is located 3.75 miles from the main campus and serves as a driving range for the Commercial Driver Training program (CDT) and the Commercial Driver’s License (CDL) for the Diesel Mechanics program. It has a break area and restroom facilities.

The Plaza Circle (main) campus location is housed in a 150,000 square ft. facility on 13 acres. The facility comfortably accommodates classrooms and shops for the following programs: Automotive, Diesel, Commercial Driver Training; Refrigeration/HVAC Technology, Advanced Welding, Diesel Advanced Technology Education, Business Administration and Management (AAS and BS programs), and Medical/Clinical Assistant program. Our main campus also features a Learning Resource Center (LRC), student computer labs, restaurant and a MATCO Tool store.

The Diana (branch) campus is housed at 48,000 square feet on five acres with an additional 2,000 square feet of outside student break area. This campus features

an administrative office area, student Learning Resource Center, and student lounge.

The branch campus houses the following programs: Information Systems and Security, Electronics Engineering Technology, Medical Billing & Coding, Physical Therapist Assistant, Massage Therapy,

Business Administration and Management (AAS and BS programs), Nursing (BSN), and Medical/Clinical Assistant with X-Ray Technology program.

# ADMISSIONS

## Admissions Procedures

Individuals who seek admission to Western Tech are interviewed either in person or by telephone by an Admissions Representative. The pre-admission interview is designed to assist in assessing whether the student has a reasonable chance of successfully completing the appropriate program of study.

The purpose of the interview is to:

1. Assist prospective students in identifying the appropriate area of study.
2. Provide information concerning curriculum offerings and support services available at Western Tech.

Prospective students will tour the campus as part of the enrollment process and fill out the necessary forms and documents prescribed by the college, its regulating and accrediting bodies. Arrangements for an interview and tour of Western Tech may be made by contacting the Admissions Department.

## Admissions Requirements

To be eligible for any program offered by Western Tech, a prospective student must have at least a high school diploma, or equivalency certificate (GED) recognized by the United States Department of Education. Classes are taught in English; therefore, an adequate level of proficiency in reading, writing, and speaking the English Language is required. Prospective international students are required to take the Test of Adult Basic Education (TABE) and must achieve a minimum of a 6<sup>th</sup> grade level in all areas of reading, comprehension, and math. Program specific admissions requirements may vary and can be found in each program of study section (page numbers found below).

Program of Study	Page Number
Advanced Welding Technology .....	p. 19-23
Commercial Driver Training .....	p. 24-28
Diesel Advanced Technology Education.....	p. 29-40
Massage Therapy.....	p. 41-52
Medical Billing & Coding .....	p. 53-59
Medical/Clinical Assistant .....	p. 60-67
Automotive Technology.....	p. 68-82
Diesel Mechanics .....	p.83-103
Refrigeration & HVAC Technology.....	p. 104-114
Electronics Engineering Technology.....	p. 115-124
Information Systems and Security.....	p. 125-132
Physical Therapist Assistant.....	p. 133-145
Business Administration.....	p. 146-163
Nursing .....	p. 164-188

Additionally, Western Tech has compiled a list of “Technical Standards and Essential Functions” for each of its programs. The ability to meet these standards and functions is required to complete the program. The prospective student should refer to the catalog section that discusses his/her program of interest or visit [www.westerntech.edu](http://www.westerntech.edu) for the detailed list of “Technical Standards and Essential Functions.”

## For Prospects with Foreign Transcripts

Transcripts of secondary education presented to Western Tech in a foreign language, must be evaluated by an independent third party recognized by the United States Department of Education for equivalency status as a high school diploma in the United States. Western Tech offers this service to prospective students with a fee dictated by the 3<sup>rd</sup> party evaluator and is the responsibility of the prospective student. The process can take up to three weeks. If the transcript returns as a “Non-Equivalency” status, the prospect would be required to obtain a GED in order to attend any class offered at Western Tech. The prospective student is referred to Western Tech’s GED coordinator.

NOTE: Prospects interested in pursuing the nursing program are required to produce a high school diploma or GED. Transcripts from Puerto Rico are accepted and do not require translation.

### **For Prospects Unable to Produce a High School Diploma or GED**

In the event the prospective student experiences a problem acquiring their high school diploma or GED, Western Tech will make allowances provided that one of the following criteria is met:

1. The prospective student can produce a post-secondary degree from a recognized institution. The prospect is required to produce a transcript from the institution attended.
2. The prospective student attended college or received vocational training from a U.S. Department of Education recognized accredited institution but, did not complete school. The prospective student would be required to possess a minimum of (24) semester credit hours or equivalent, of post-secondary training at a national or regionally accredited institution. The individual is required to submit transcripts with a minimum (2.0) cumulative grade point average. **This does not apply to military Joint Services Transcripts (JST) from any military branch.**
3. The prospective student can produce an official military service DD214.
4. High school seniors can submit their most current partial transcript that indicates their expected graduation date.
5. For Applicants that were home schooled, they may be eligible for enrollment, provided their HS transcript meets equivalency standards with state requirements.

**Prospective students that are unable to meet the requirement above will be referred to the GED coordinator.**



# GENERAL INFORMATION

## General Education Diploma (GED) Preparatory Program

Western Tech offers a GED prep program. For more information see Student Services.

## Alumni/Transfer Credit

Western Tech offers Alumni/Transfer Credit for course exemptions. For more information see Student Financial Services.

## Scholarships

Western Tech offers Scholarships. For more information see Student Financial Services.

## Student Insurance

Western Tech provides insurance coverage for injuries to students while attending class or school functions on Western Tech premises and during internship and group activities sponsored by the College. The Policy does not cover students once they leave the campus or after they graduate. See your registrar for more information. Western Tech also provides Medical Malpractice insurance for those students in the following programs: Massage Therapy, Medical/Clinical Assistant, Medical Billing & Coding, Physical Therapist Assistant, and Nursing.

**Note: Massage Therapy students acquire student membership insurance with Associated Bodywork and Massage Professionals for coverage during internship, outside of school hours and while students utilize and practice skills on their spare time.**

## Section 504/ADA Policy

Western Tech does not discriminate on the basis of age, race, color, sex, disability, religion, sexual orientation, national origin, or any other characteristic protected by state, local or federal law in the administration of any of its educational programs or activities, or with respect to admission or employment. If you would like to request academic or auxiliary aids, please contact the Campus President. You may request academic or auxiliary aids at any time. Each Campus President is responsible for coordinating compliance with Section 504 of the Rehabilitation Act of 1973 and Title III of the Americans with Disabilities Act of 1990.

Western Tech is committed to making **reasonable**, appropriate, and effective accommodations and modifications in policies, procedures, and practices where necessary to qualified prospective students in accordance with Section 504 of the Rehabilitation Act, the Americans with Disabilities Act of 1990, and applicable state, local laws, and regulations. Contact the Director of admissions with any inquiries regarding Western Tech's nondiscrimination policies. Students requesting reasonable accommodations will need to be able to complete competencies, as set forth in each program.

Any qualified individual with a disability requesting an accommodation, auxiliary aid or service should follow the procedure below:

1. Notify the Campus President in writing of the type of accommodation needed, date needed, and documentation of the nature and extent of the disability. International documentation of disabilities will not be accepted. The request should be made at least four weeks in advance of the date needed.
2. The Campus President will respond within two weeks of receiving the request.

If you would like to request reconsideration of the decision regarding your request, please contact the Campus President within one week of the date of the response. Please provide a written statement of why and how you think the response should be modified.

# CONSUMER INFORMATION

The Western Tech website contains consumer information mandated by numerous governmental agencies. The consumer information webpage can be accessed at <http://www.westerntech.edu/student-financial-services/consumer-information/>. The information available includes:

## Privacy and Information Security

Western Tech carefully protects all personal information in its possession regarding students and their families. The college employs office procedures and password-protected computer systems to ensure the security of paper and electronic records. The college does not disclose its security procedures to students or the general public to protect the effectiveness of those procedures. Access to social security numbers and other personally identifiable information (PII) is strictly limited to those School Officials with a need-to-know.

The Family Educational Rights and Privacy Act of 1974 (FERPA) also provides current and former students with the right to inspect and review educational records, the right to seek to amend those records, the right to limit disclosure of information from the records and the right to file a complaint with the U.S. Department of Education. For more information and details of this policy, please refer to the Western Tech website at <http://www.westerntech.edu/student-financial-services/consumer-information/privacy-policy-for-student-records/>.

## Campus Security Report and Policy

This report contains an itemized listing of crimes and certain other offenses committed on the College's campuses and the adjacent public areas during the past three calendar years. The policy highlights Western Tech's methods for protecting student security, and for informing the students and the campus community of any crimes or patterns of crimes that may pose a threat to safety. The Report and Policy can be found at <http://www.westerntech.edu/student-financial-services/consumer-information/campus-security-policies-procedures-disclosures/>. Interested parties who are unable to access the report on-line, or would prefer a paper copy, may contact any member of Western Tech staff.

## Drug Awareness and Drug Abuse Prevention Policy

Western Tech maintains a drug abuse prevention policy which prohibits the illegal possession, sale, or distribution of controlled substances on the Western Tech campuses or at College events. The Policy and significant information about the hazards drug abuse, the effects of specific substances, and links to local rehabilitation service organizations can be found at <http://www.westerntech.edu/student-financial-services/consumer-information/drug-and-alcohol-policies/>. Interested parties who are unable to access the policy on-line, or would prefer a paper copy, may contact any member of Western Tech staff.

## Other Consumer Information Available on the Western Tech Website

<http://www.westerntech.edu/student-financial-services/consumer-information/>

College Information

Financial Assistance Information

Student Body Diversity

GED Resources

Career Services

Privacy Policy for Student Records

Drug and Alcohol Policies

Campus Security and Crime Awareness Policies/Annual Security Report

Satisfactory Academic Progress (SAP)

Facilities and Services Available to Students with Disabilities

Transfer of Credit Policies and Articulation Agreements

Withdrawal, Leave of Absence, Refund, and Return to Title IV Policies

Copyright Infringement

Completion and Placement Disclosures

Voter Registration/Constitution Day

Gainful Employment

Cost of Attendance and Net Price Calculator

Financial Aid Code of Ethics

Immunization Policy

PRINTED COPIES OF ANY OF THE CONSUMER INFORMATION CONTAINED ON WESTERN TECH'S WEBSITE CAN BE OBTAINED BY CONTACTING THE CAMPUS PRESIDENT'S OFFICE.

# INTERNATIONAL STUDENTS

Western Tech is dedicated to serving the needs of the international student from the admission application process through transfer or graduation. The Department of Homeland Security (DHS) regulations can be difficult to understand, but we are here to help the international student stay in compliance with DHS requirements while attending Western Tech. For the convenience of students, Western Tech has designated international student advisers at each campus.

## How to Obtain A SEVIS I-20 Form

International students wishing to live in the United States while attending college must be admitted as full-time international students and maintain a full-time course load to stay in compliance with F-1/F-3 Visa requirements. Applicants seeking to enroll in valid student nonimmigrant status must submit each of the following items:

1. A completed Application for Admissions.
2. A completed and signed Enrollment Agreement.
3. Original or official copies of educational transcripts (secondary school and, if applicable, university- level academic records) and diplomas. These educational transcripts and diplomas must be prepared in English or include a complete and official English translation. Western Tech will perform this function on behalf of the student in which the student will assume cost for the translation. The translation is generally completed within five to seven school days.  
\*NOTE: Transcripts from Puerto Rico are accepted.
4. Official evaluation of non-American educational credentials; the official transcript is translated by an independent 3<sup>rd</sup> party recognized by the U.S. Department of Education for equivalency status in the United States.
5. Proof of English language proficiency (see below for proficiency policy).
6. A completed and signed Sponsor's Statement of Financial Support (This statement is not required if the student is self-sponsored).
7. Official Financial Statements. Financial statements (typically provided by a bank) must verify sufficient funds to cover the cost of the educational program as well as living expenses.
8. Students must submit prior to the start date, a registration fee of \$100 collected along with the signed enrollment agreement.
9. A photocopy of the student's passport to provide proof of birth date and citizenship (Students outside the United States who have not yet acquired a passport will need to submit a copy of their birth certificate.).
10. Nonimmigrant applicants residing in the United States at the time of application: a photocopy of the visa page contained within the student's passport as well as a photocopy of the student's I/94 arrival departure record (both sides).
11. For all nonimmigrant applicants residing in the United States at the time of application in F, M, or J nonimmigrant classification: written confirmation of nonimmigrant status at previous school attended before transferring to Western Tech.
12. Proof of health insurance. Students who do not possess health insurance upon applying to the college must be prepared to purchase health insurance through an approved provider upon commencement of studies.

Proof of proficiency in the English language is required for enrollment into academic programs. The following may be used as proof of proficiency:

1. Official transcripts from an accredited United States college or university showing completion of 12 semester credit hours with a cumulative GPA of at least 2.0 on a 4.0 scale.
2. Official report on the Test of English as a Foreign Language (TOEFL) with a minimum score of 450 (paper-based), or 133 (computerized), or 45 (Internet) on the international version.
3. Complete Test of Adult Basic Education (TABE) and upon approval from the program director.

## Issuance of the I-20 Form General Information

The I-20 form is issued in compliance with The Department of Homeland Security rules, and the General Issuance Guidelines:

1. I-20 will be issued no earlier than 60 calendar days prior to first day of the program start for which the prospective student applied.
2. I-20 will generally be issued no later than 30 days prior to the first day of the program start for which the prospective student applied.

## SEVIS I-20/F-1 VISA REQUIREMENTS

After receiving the SEVIS, I-20 form and F-1/F-3 Visa, you must comply with the following requirements. You must report to Western Tech International Students Office within 10 days of entering the United States for the first time on your F-1/F-3 Visa.

1. You must report changes to your address and phone number to the International Students Office within (10) days.
2. You must report to the International Students Office any changes in your schedule that causes you to be out of status, e.g., withdrawing from a class causing less than full-time attendance.

3. To extend your I-20 Form, you must report to the International Students Office for an extension, four weeks prior to the expiration date. If the I-20 is not extended or renewed prior to the expiration date, it will be terminated, and the student will not be allowed to continue to study after the expiration date. The student will have to leave the United States and re-apply for a new I-20 and get a new F-1/F-3 Visa.

Contact the International Students Office immediately if you plan to transfer to another college or university. Another school will not be able to issue an I-20 to you unless Western Tech first releases your SEVIS record.

# STUDENT FINANCIAL SERVICES

Western Tech employs a full-time staff of dedicated student financial services professionals to help each student to understand the financial aid programs, understand their rights and responsibilities, navigate the application processes, and manage all of the paperwork associated with financial aid eligibility. Student Financial Services is open during normal business hours at both campuses, including evenings (Monday through Thursday). We encourage students to stop by any time they have questions or concerns about financial aid or any aspect of college financing.

Western Tech participates in Federal Title IV Student Aid programs authorized under Title IV of the Higher Education Act of 1965 (as amended) and is approved for the training of veterans and other eligible persons in accordance with the provisions of Section 3675, Title 38, U.S. code. Financial assistance is made available to qualified students according to the rules of each individual student aid program.

The Western Tech website contains detailed information about the types and amounts of student aid available, application procedures, eligibility rules, and the rights and responsibilities of students receiving federal student aid at [www.westerntech.edu](http://www.westerntech.edu).

## SCHOLARSHIPS AND AWARDS

A **Grant or a Scholarship** is money that is used to help a student pay for school-related expenses. These items are awards that do not need to be re-paid.

A **Work-Study** award must be earned through work at an hourly wage. Wages earned through this program do not need to be re-paid.

A **Loan** must be re-paid at a future date through monthly payments. Any loan/financing offered at Western Tech will be fully explained and provided with written terms and conditions, including terms of repayment. Be sure to read and understand the terms and conditions prior to agreeing to any loan or financing agreement.

**Transfer Credit** is credit awarded to a student for a similar course(s) taken at another institution of higher education, with the same or parallel objectives. Transfer credit may also be given based on an individual's work experience in the field of study. Also, updated industry certifications may be applied for transfer credit, depending on the program of study.

**Course Exemption** refers to course(s) of study that have been taken by the prospect at the same institution or different institution of higher education, with the same course objectives that allow the student to forgo having to take the same class, and not be charged for said course(s) in the new program.

### **Exceptions Course (s) Credits for Non-Term Programs**

For students enrolled in a non-term program (certificate program) that have been granted credit based on transcripts evaluation; will be granted course (s) exemption credit through a monetary award.

An **Award** is an external monetary value that is provided through Military Appreciation Award and High School Articulation or scholarship, and applied to tuition only.

## TRANSFER CREDIT FOR PREVIOUS EDUCATION, TRAINING, MILITARY, OR WORK EXPERIENCE

### **Academic Credit**

Those who believe they may qualify for course exemption based on previous education, training, or work experience, may apply by informing their admissions representative during the enrollment process. The evaluation of credit granted may be done by transcript evaluation, interview, testing or performance, or a combination thereof. Course exemption(s) granted is documented and cost of the program is reduced proportionately. Decisions on course exemption(s) must be made prior to a student starting school and determined by the Academic Dean or Campus President at each location.

### **For Applicants who want to Transfer Credits to Western Tech**

1. Transfer credit must be evaluated prior to being accepted and starting class. For all degree programs, students that have taken general education coursework over the last seven (7) years, may be entitled to course exemption provided that the grade(s) earned are a "B" or higher. For alumni who wish to enroll into a new program, the Dean and/or Campus President may allow for an exemption with a passing grade, depending on the program.
2. Students that took technical courses over the last five (5) years, may be entitled to course exemption provided they earned a B or higher, even if the technical course
3. The acceptance of transfer credit for technical courses is primarily based on the competencies achieved by the applicant in previously completed coursework, training or employment and whether the competencies reasonably align with the Western Tech coursework and program into which the credit is to be transferred. In addition to transcripts, applicants may be required to provide course descriptions from the school where the coursework was performed, to enable Western Tech to perform a course-by-course evaluation.
4. Additionally, Western Tech may require applicants requesting transfer credit to take oral, written or performance exams or a combination thereof. Applicants must achieve a minimum score of 75% on the exam(s) in order to receive credit.
5. Western Tech does not accept credits listed as "transfer" credits on transcripts from other institutions. Actual transcripts are required for coursework from all institutions previously attended.

6. Western Tech will only consider granting credit for coursework, certifications earned, military or work experience which has occurred within the last five years.
7. If the institution which the applicant previously attended is located within the United States, it must be accredited by an accrediting agency recognized by the United States Department of Education. Transcripts in Spanish from Puerto Rico or other United States territories are acceptable. If the institution is outside the United States, it must be accredited or similarly acknowledged by an agency deemed acceptable at Western Tech's discretion. Western Tech may also require evaluation of foreign transcripts to determine high school equivalency of credentials by an independent third party at the applicant's expense.
8. Students receiving credit are not eligible to receive Title IV student financial assistance or Veterans Administration (VA) funding for any coursework for which credit was granted. They may receive student financial assistance or VA funding for all other coursework at Western Tech contingent upon their eligibility.
9. At a minimum, 50% of the credits required for graduation from Western Tech must be earned at Western Tech.
10. For students entering the BBA and PTA program, students will only accept transferable programs

### High School Articulation

A high school graduate may be eligible for credit from previous training in high school. WTC has articulation agreements with most of the El Paso school districts, and surrounding areas. The student must receive an 80% or higher on the articulated course(s) for credit purposes.

### Alumni Credit

Graduates who wish to take an entire program different than the one they graduated from may do so at up to 50% off tuition for ONE PROGRAM ONLY, effective January 01, 2019. Alumni that enroll in a subsequent program must be in good standing with WTC, to include zero conduct issues with his/her previous program and is also in good standing with his/her student loans. Students will also be held accountable to maintain the minimum requirements for attendance (85% per course) and at least a 2.0 grade point average per course to qualify for the alumni discount benefit. Students who do not meet this benchmark during the billing cycles (as described below) will not qualify for the alumni discount for that cycle.

- Graduated Scale with a 50% Max
  - 1st period 10% of tuition billed for period
  - 2nd period 20% of tuition billed for period
  - 3rd period 30% of tuition billed for period
  - 4th period 40% of tuition billed for period
  - 5th period 50% of tuition billed for period
  - 6th period 50% of tuition billed for period
- Credit posted at the beginning of the next period
- Attendance & GPA Requirements
  - No probation for the applicable period
  - Business Office will send an inquiry to Registrar before posting credit

Note: In order for the alumnus to receive the full benefit of the tuition discount, it is imperative that the alumnus entering the new program, maintain minimum academic and attendance requirements.

*The following are brief descriptions of the aid programs in which Western Tech participates. More detailed information is available on the College's website at [www.westerntech.edu](http://www.westerntech.edu).*

### FEDERAL STUDENT AID

#### Federal Pell Grant

Federal Pell is a grant that does not need to be repaid. Eligible students who have not received a Bachelor's Degree may receive this grant based upon their Expected Family Contribution (EFC) as determined through the FAFSA application process.

#### Federal Supplemental Education Opportunity Grant (SEOG)

Pell-eligible students (see above) may also be eligible for an additional grant under this program.

SEOG awards are limited to those eligible students with the lowest EFC's (generally zero EFC's only).

#### Federal Work Study Program

This program enables students who demonstrate financial need to earn a portion of their education expenses. Students earn at least the current hourly minimum wage by working at the College, non-profit organizations or other community employers.

#### Federal Stafford Loan Program

Eligible students at Western Tech are able to borrow a traditional "student loan" from the Federal Direct Student Loan Program. These loans are called Federal Stafford Loans, and the interest on these loans may be subsidized and/or unsubsidized.

For maximum loan amounts, explanations of the differences between the Subsidized and Unsubsidized Loan Programs, and other important information, please visit the College's website at: [www.westerntech.edu](http://www.westerntech.edu).

### Federal PLUS Loan (Parents)

The parents of dependent students at Western Tech are generally able to borrow a Federal Parent PLUS Loan based upon creditworthiness. Parents can borrow up to the full cost of education minus any other aid received.

### INSTITUTIONAL FINANCING

In the event that a student is unable to completely pay for his/her education with Federal Student Aid funds, Western Tech offers students two options:

1. **In-School Payment Plan-** The Western Tech Payment Plan allows students to make equal monthly payments across the school year for any remaining balance after other forms of financial assistance are considered.

2. **Long-Term Financing-** Western Tech also offers institutional financing (through a third-party servicer) which allows for a maximum term of thirty-six months. Interest rates are determined by credit analysis.

*Western Tech complies with all applicable state, federal and equal credit opportunity laws; however, Western Tech does not guarantee financial assistance to any student.*

### PERSONAL FINANCING

In the event that a student and/or parent would like to obtain personal financing through their own lender, please consult with the Financial Aid Office to discuss a personalized payment schedule.

### Scholarships

The primary purpose of this scholarship program is to encourage high school seniors to enter high-tech career training. The secondary purpose is to assist economically disadvantaged students who, although academically capable, may not otherwise be able to fully afford specialized career training.

The following are brief descriptions of the scholarships that Western Tech offers for qualified students:

#### High School Senior Scholarships

The Western Tech High School Senior Scholarship awards five (5) total scholarships from each of our (15) eligible programs to all school districts throughout the Southwest Region. The criteria to complete the High School Senior Scholarship application are as follows:

1. Turn in (2) letters of recommendation from an appropriate source (teachers, employers, counselors).
2. Turn in a minimum of a (300) word essay "Why you want a career in the field you are applying for" (list your activities in school, work experience, previous training and goals).

3. Provide an official copy of your current high school transcripts, (after the first H.S. Senior semester).
4. Schedule a Wonderlic Basic Skills Test (WBST) to be administered at Western Tech.

The awarded scholarships will be applied towards current tuition using the following formula:

- 1st. place will receive 25% off tuition
- 2nd. place will receive 20% off tuition
- 3rd. place will receive 15% off tuition
- 4th. place will receive 10% off tuition
- 5th. place will receive 5% off tuition

All seniors who will be graduating High School in the spring are eligible to apply for the High School Senior Scholarships. Students who wish to apply should see their high school career center or school counselor for a scholarship application or visit the [Westerntech.edu](http://Westerntech.edu) website. The selection process is completed by a committee of local high school personnel. The application and review process will be completed in mid-April.

WTC High School Senior scholarships and awards are valid for one year after the date and are not a cash award. They are applied towards tuition fees only. Non-transferable and redeemable only at Western Tech. Scholarship and awards are only to be deducted from tuition upon successfully completing the career program of prospect student's choice.

#### Skills USA Scholarships

Western Tech offers scholarships to the winners of the Skills USA competition (El Paso regional area).

The High School Senior participants who place 1st through 3rd in each category will receive a scholarship using the following formula:

- 1st. place will receive 20% off tuition
- 2nd. place will receive 15% off tuition
- 3rd. place will receive 10% off tuition

The High School Junior participants who place 1st through 3rd in each category will receive a scholarship using the following formula:

- 1st. place will receive 10% off tuition
- 2nd. place will receive 7.5% off tuition
- 3rd. place will receive 5% off tuition

***Note: Prospective students who are enrolling cannot be granted more than 50% off tuition in total scholarship awards.***

WTC Skills USA Scholarships for HS Seniors and HS Juniors are valid for one year after the date and are not a cash award. They are applied towards tuition fees only. Non-transferable and redeemable only at Western Tech. Scholarships are only to be deducted from tuition upon successfully completing the career program of prospect student's choice.

#### Military Appreciation Award

Active duty and reserve service members, honorably discharged veterans or National Guard members, and their dependents qualify for 10% reduction to current

tuition. Supporting documentation to be considered for the award is as follows:

1. **Veteran** -A copy of the prospective student DD214 along with a picture ID
2. **Military Dependent Spouse** – A copy of military spouse DD214 and/or proof of active duty (active orders), picture ID, and marriage certificate.
3. **Military Dependent Child** – Marriage certificate of parents, childbirth certificate identifying either parent, picture ID (parent, child) along with DD214 and/or proof of active duty, reserve and/or National Guard.

The 10% reduction does not apply to books, tools, or any other charges.

### **Career Colleges and Schools of Texas (CCST) Scholarships**

Western Tech participates in the Career Colleges and Schools of Texas (CCST) scholarship program, which is available for high school seniors in both public and private high schools in Texas. The scholarship award is valued at \$1,000.00, and each school receives 10 scholarship certificates per calendar year. The scholarship can be redeemed at participating colleges and universities throughout the state. The selection process is done at each high school and only high school counselor(s) may award a scholarship. The career school and high school counselor are both notified when a scholarship is issued. Scholarship recipients must graduate high school in the same school year

(September-June) as the issue date of the scholarship, and the deadline for awarding scholarships is August 31 of the year that the student graduates from high school. Prospects that submit a CCST scholarship that falls outside of the accepted dates will not be eligible for acceptance at WTC. Please see your Texas high school career center or school counselor for CCST scholarship information.

### **Academic Requirements for Scholarships and Awards**

Each scholarship/award may have academic requirements for a student to remain eligible for continued payments. Recipients of each scholarship will be notified in writing of any such requirements. This will be administered by the College Education Liaison staff.

### **Limit on Awards**

Prospective students who are enrolling cannot be granted more than 50% off tuition in total scholarship and course exemption awards.

### **Scholarships from Other Institutions**

Prospective students who are enrolling will have the option to use institutional specific scholarship awards granted to high school students, made out to other colleges and universities, not to exceed the total amount of \$5,000.00 towards tuition. **Scholarships and awards are valid for one year after the date and are not a cash award. They are applied towards tuition fees only. Scholarships are non-transferable and redeemable only at Western Tech.**

## **ACADEMIC PROGRESS FOR FINANCIAL AID ELIGIBILITY**

All Western Tech students must maintain satisfactory progress toward completion of their academic program. Students who fail to meet the academic progress standards of the College are subject to both academic penalties and the potential loss of eligibility for federal aid. The standards below apply exclusively to eligibility for federal student financial aid.

### **Definitions – Effective 2019**

*Degree Programs: are defined as programs which lead to an Associate Degree or Baccalaureate Degree.*

*Certificate Programs: are defined as certificate programs that do not have an affiliated Associate Degree or Baccalaureate Degree program.*

*Degree Programs are measured in traditional Semester Credit Hours, while Certificate Programs are measured in Clock-to-Credit Conversion Credit Hours.*

### **Payment Periods**

The measurement of Academic Progress for Financial Aid shall occur in increments which correspond to the “payment periods” for Federal Title IV Financial Aid. Academic Progress shall be measured at the end of each payment period. A “payment period” is defined as one-half (as measured in both weeks and clock hours (instructional hours)) of the student’s scheduled academic year or the remaining scheduled period of instruction until program completion (whichever is less). If the remaining period of instruction is less than one-half of the standard academic year, (less than 450 clock hours) it shall be considered a single payment period.

### **Payment Periods – Effective 2013**

*The measurement of Academic Progress for Financial Aid shall occur in increments which correspond to the “payment periods” for Federal Title IV Financial Aid. Academic Progress shall be measured at the end of each payment period. For Degree Programs, the payment period is the Semester. For Certificate programs, the payment period is defined as one-half (as measured in both weeks and credit hours (instructional hours)) of the student’s scheduled academic year or the remaining scheduled period of instruction until program completion (whichever is less). If the remaining period of instruction is less than one-half of the standard academic year, (less than twelve credit hours) it shall be considered a single payment period.*



Academic Progress Standards for Financial Aid	Minimum Cumulative Grade Point Average	Cumulative Hours Completed/ Attempted
<i>End of 1<sup>st</sup> payment period</i>	2.00	67 percent
<i>End of 2<sup>nd</sup> payment period</i>	2.00	67 percent
<i>End of 3<sup>rd</sup> or subsequent payment period</i>	2.00	67 percent

#### **Additional “Maximum Timeframe” Standard**

Eligibility is also limited to students completing their programs within one and one-half times the normal program length. The maximum timeframe is reached when the student has attempted more than one and one-half times the number of clock or credit hours required to graduate from his/her program. The maximum timeframe standard evaluation for transfer students will consider all credits attempted at Western Tech or accepted for transfer or proficiency credit. Students who change programs may request that their maximum timeframe be re-calculated based solely on those hours that are applicable to the current program of study. A determination of ineligibility based upon the maximum timeframe standard may be reversed based upon a mitigating circumstance. Please refer to the “Regaining Academic Eligibility” section (below).

#### **Exempted Course(s) Credit:**

**Twelve credit hours constitute a full semester, and students exempt from course(s) will not be charged accordingly however, students enrolled in degree semester programs that are eligible for Title IV funds will receive financial aid appropriate to their enrollment status for the semester. For more information, please see your Student Financial Services Representative.**

#### **GPA and Grading Policy**

All issues of grading policy, Grade Point Average (GPA) calculation, attendance, etc. are calculated in accordance with the regular academic policies of Western Tech.

#### **Completed/Attempted Credit Hours – Effective 2013:**

*For Degree Programs, “Attempted Hours” means any credit hours for which the student was charged or received financial aid. “Completed Hours” means the number of “attempted” credit hours for which a student received a passing grade. For Certificate programs, “Attempted Hours” means the number of scheduled credit hours in the program as listed in the academic calendar to the measurement point. “Completed Hours” means the number of “attempted” credit hours a student actually attended.*

#### **Transfer Students**

Accepted transfer credit shall be considered as completed coursework for purposes of this policy. However, since no grades are assigned to transfer courses, they will not impact the student’s GPA. Academic years and payment periods for transfer students shall be defined individually based upon the remaining period of instruction.

#### **Return after a Leave of Absence**

A student who returns after a leave of absence, withdrawal, or other extended absence of 180 calendar days or less, shall not have the period of absence considered in the calculation of academic progress. In all other aspects, the student’s progress will be evaluated in the same manner as if the absence had not occurred, with the exception of any necessary changes to the start and end dates of planned payment periods. A student, who returns after a withdrawal, dismissal, or other absence of more than 180 days, shall be measured in a manner consistent with a transfer student (see above). Students who do not return on their scheduled return date from their LOA, will be dropped.

#### **Financial Aid Warning Status**

Students who fail to meet the standards defined above will be placed on Financial Aid Warning Status for their subsequent payment period. Students in Warning Status remain eligible for federal student aid.

If a student has not returned to “good” academic standing (according to the chart on the preceding page) by the end of the Financial Aid Warning Status payment period, the student will lose eligibility for federal student aid from that point forward. Such dismissal/loss of eligibility may be subject to appeal (see below).

#### **Data Corrections**

If a student’s academic record is corrected subsequent to the evaluation date, a student may submit a written request to the Student Financial Services Director for re-evaluation of the student’s financial aid eligibility.

## **Regaining Academic Eligibility for Financial Aid**

1. **Mitigating Circumstances Appeal:** A determination of loss of eligibility for federal financial aid may be appealed based on mitigating circumstance(s). A mitigating circumstance is defined as an exceptional or unusual event(s) beyond the student's direct control, which contributed to or caused the academic difficulty. Examples include: the death of a relative, an injury or illness of the student, or other special circumstances. Appeal letters should be addressed to the Financial Services Director and must include a complete description of the circumstances that led to the academic difficulty, how those circumstances have changed, and a plan for future academic success. Copies of supporting documentation should be included. All appeals are reviewed by a committee of academic and administrative staff whose determination is final. A mitigating circumstance appeal may also be used to override the Maximum Timeframe Standard.

A student for whom a mitigating circumstance appeal is approved will be placed in Financial Aid Probation Status for one payment period. If the student has not returned to good academic standing (according to the chart) by the end of a probationary payment period, the student will lose eligibility for future financial aid.

2. **Regaining Eligibility Other Than Through Appeal:** Students who have lost federal financial aid eligibility may potentially regain academic eligibility by one or more of the following methods: 1) be accepted into a different academic program at Western Tech, if the re-evaluated student's record (based upon the courses applicable to the new program) will be in compliance with all academic standards; and/or make up the academic deficiencies at Western Tech without benefit of federal financial aid. In each of these circumstances, approval is at the discretion of the Campus President.

## **Return to Good Standing**

Once a student has returned to good academic standing, any previous academic difficulty, warning, or probation shall have no future bearing on the student's status. Hence, such students will have benefit of all provisions of this policy, including a warning payment period.

# **RETURN OF TITLE IV FUNDS**

## **Return to Title IV/ Refund Repayments Policy**

This policy applies to recipients of Federal Title IV Financial Aid funds who cease enrollment for any reason prior to graduation. Students that are no longer attending may owe funds to the College to cover unpaid tuition, fees, and other charges. Also, the College will attempt to collect from the student any funds that the College was required to return to the financial aid programs under this policy.

The College will calculate how much federal aid may be retained or disbursed for a student who withdraws prior to the end of a payment period. The calculation is referred to as "Return of Title IV Funds" (R2T4). The calculation of Title IV funds earned by the student has no relationship to the student's tuition and fees that may be owed to the College. All students subject to this policy will have their eligibility calculated according to the following definitions and procedures, as prescribed by regulation.

## **Withdrawal Before 60%:**

The College must perform a R2T4 to determine the amount of earned aid up through the 60% point in each payment period and use the Department of Education's proration formula to determine the amount of financial aid funds the student has earned at the time of withdrawal.

## **Withdrawal After 60%:**

After the 60% point in the payment period or period of enrollment, a student has earned 100% of the Title IV funds he or she was scheduled to receive during the period. For a student who withdraws after the 60% point-in-time, there are no unearned funds. However, the College will still calculate the student's eligibility for a post-withdrawal disbursement.

## **Calculating R2T4**

Title IV funds are earned in a prorated manner up to the 60% point in the payment period. The proration is based upon scheduled classroom/instructional hours (clock hours) for clock-hour programs, and calendar days for credit hour programs. The College will determine the earned and unearned Title IV aid as of the student's last date of attendance (LDA) and the College's academic calendar.

In accordance with federal regulations, when Title IV financial aid is involved, the calculated amount of the R2T4 funds is allocated in the following order: Unsubsidized Direct Loans, Subsidized Direct Loans, Direct PLUS loans followed by Federal Pell Grants and Federal Supplemental Educational Opportunity Grants (FSEOG). The calculation steps are outlined as follows:

1. Calculate the percentage of Title IV aid earned by the student. Days or clock hours scheduled through LDA / days or clock hours in the payment period.) = 15.3% (% of completed calendar days within the payment period) 118 (scheduled days).

2. Calculate the dollar amount of Title IV aid earned by the student. Percentage as calculated in step one above X Amount of aid which was disbursed to the student or could have been disbursed to the student.
3. If the earned amount is greater than the total Title IV aid disbursed for the payment period, a Post-Withdrawal Disbursement will be calculated; if the amount is less than the amount of Title IV aid disbursed, the difference will be returned to the federal student aid programs.

The College will notify the student in writing of the amount and type of any financial aid funds that must be returned.

#### **Return to Title IV Funds Timeframe**

Western Technical College adheres to the maximum timeframes prescribed regulation to return unearned funds. The date of the determination of the student' withdrawal remains 14 days from the student's last day of attendance; with exception of students determined to be on an approved leave of absence. The institution will return any unearned funds with 45 days after the date the institution determined that the students withdrew.

#### **Post-Withdrawal Disbursement**

If a student earned more aid than was disbursed to him/her, the student may be eligible for a post-withdrawal disbursement. The College will notify the student in writing if he/she is eligible for a post-withdrawal disbursement of Title IV loan funds. A student or parent borrower must first confirm in writing whether he/she accepts/declines all or some of any loan funds offered as a post-withdrawal disbursement. A post-withdrawal disbursement of Federal Pell Grant funds does not require student acceptance or approval. The College will seek the student's authorization to use a post-withdrawal disbursement for all other educationally related charges in addition to tuition and fees.

#### **Overpayments**

Any amount of unearned grant funds that a student must return directly is called an overpayment. The maximum amount of a grant overpayment that you must repay is half of the Pell Grant funds you received or were scheduled to receive. Students in this circumstance must make arrangements with the College and/or the U.S. Department of Education to return the unearned grant funds. Failure to do so will result in ineligibility for future federal financial aid.

# ACTIVE MILITARY AND VETERANS

## Veteran Affairs

Western Tech is designated by GI Jobs magazine and Best for Vets, as a Military Friendly School for seven (7) consecutive years. **Western Tech will help you complete required forms and submit documentation for veterans' educational benefits under chapters 1606, 1607, 30, 31, 33, 35, MyCAA, and Tuition Assistance.** Western Tech provides ongoing services to veterans and their dependents in every step of the college experience and is responsible for creating and maintaining records used to certify a student's status for the VA.

Flexibility of programs and procedures particularly in admissions, advising, credit transfer, course articulations, recognition of nontraditional learning experiences, scheduling, course format and residency requirements are provided to enhance access of service members, veterans, and their family members to Western Tech's education programs.

For immediate information call:

- Main Campus- (915) 532-3737 or 1-800-225-5984
- Branch Campus- (915) 566-9621 or 1-800-225-5984
- Military Liaison- (915) 780-3660

Active duty and reserve service members, honorably discharged veterans or National Guard members, and their dependents qualify for 10% reduction to current tuition after any other discounts (Effective May 1<sup>st</sup>, 2017). Supporting documentation to be considered for the award is as follows:

1. **Veteran** -A copy of the prospective student DD214 along with a picture ID.
2. **Military Dependent Spouse** – A copy of military spouse DD214 and/or proof of active duty (active orders), picture ID, and marriage certificate.
3. **Military Dependent Child** – Marriage certificate of parents, childbirth certificate identifying either parent, picture ID (parent, child) along with DD214 and/or proof of active duty, reserve and/or National Guard.

**The 10% reduction ONLY applies to tuition.**

**\*Evaluation of military training record must apply to the student's declared degree or certificate program for consideration of course exemption. For more detailed information, please refer to the second bullet point under Veteran Affairs below.**

All new and returning students who intend to receive VA Educational Benefits while enrolled at Western Tech need to be aware of the following:

- Be sure you are certified. Registration for Western Tech classes does not automatically certify you for VA benefits. To be certified, you will need to come by the Veterans Affairs Office and complete the required forms.
- Students are required to submit copies of each transcript from all institutions previously or currently attending, to the Veterans Affairs Office. Students are responsible for requesting transcripts and making sure they are received at the correct office. Transcripts are required by the VA even if you have never received benefits before since VA regulations stipulate that all prior training must be evaluated by the Campus President and program director to receive educational benefits. Any consideration for course exemption based on previous training and/or education, will need to be processed before the student begins school. This includes military Joint Services Transcripts (JST) from any military branch.
- It is your responsibility to promptly report and submit supporting documentation of any changes in your Degree Plan or Preliminary Program of Study, degree objective, course(s) substitution(s), enrollment (part of terms), or address to the Veterans Affairs Office
- If you receive a non-punitive grade, our office will notify the VA. VA educational benefits will not be paid if you withdraw from a course or for a course that will not be used in computing requirements for graduation. The VA may reduce or terminate your benefits if you can't show mitigating circumstances.

"Mitigating circumstances" – unanticipated or unavoidable events which interfere with a student's pursuit of a course. A student may submit evidence to substantiate mitigating circumstances; however, the VA will determine eligibility for resumption of benefit payments.

"Non-punitive grades":

- A "W" grade for withdrawing from a course.
- An "I" grade for an incomplete course, which is not made up during the time period required by the school.

You must maintain satisfactory attendance and progress toward completion of your educational objective. If you do not meet the school standards, our office will notify the Veterans Administration Office. Upon receipt of the notice, VA will terminate your benefits.

Be aware that VA regulations are subject to change without notice. For current information, check with the Western Tech Veterans Affairs Office or you may contact the Department of Veterans Affairs (VA), Muskogee, OK at 1-888-442-4551.

#### **Exempted Course(s) Credit:**

Twelve credit hours constitute a full semester, and students exempt from course(s) will not be charged accordingly however, students enrolled in degree semester programs are that are eligible for Title IV benefits will receive financial aid appropriate to their classification as attending half-time or three-quarter time, depending on the number of credits in the semester and are receiving Basic Allowing Housing (BAH) will not receive full BAH. Please check with your VA Certifying Official or Student Financial Services Director.

#### **Veterans Information Sources:**

Department of Veterans Affairs (VA) [www.va.gov](http://www.va.gov) or [www.gibill.va.gov](http://www.gibill.va.gov)

Department of Veterans Affairs

Muskogee Regional Processing Office (Education)

PO Box 8888

Muskogee, OK 74402-8888

Educational Benefits Inquiries: 1-888-442-4551 (1-888-GIBILL-1)

Website: [www.vba.va.gov/Muskogee.htm](http://www.vba.va.gov/Muskogee.htm)

E-mail: [muskpro@vba.va.gov](mailto:muskpro@vba.va.gov)

### **MILITARY TRANSCRIPT REQUEST**

VA regulations stipulate that for any student that has previously qualified for VA educational benefits, transcripts from all previously attended institutions must be requested and submitted by the student to the VA office for evaluation prior to being certified for any additional VA benefits.

#### **AIR FORCE:**

**Community College of the Air Force**

CCAF/DFRS

100SouthTurner Blvd

Gunter Annex AL 36114-3011

<http://www.au.af.mil/au/ccaf/>

**ARMY, COAST GUARD,  
MARINE CORPS, AND NAVY:  
Joint Services Transcript (JST)**

NETPDTC

ATTN: JST Operations Center N615

6490 Saufley Field Road

Pensacola, FL 32509

Email: [jst@doded.mil](mailto:jst@doded.mil)

<https://jst.doded.mil/>

#### **Veteran Leave of Absence Policy**

All LOAs requested by Veterans must be approved by the Program Director, a financial aid officer, and the VA Certifying Official for both campuses. All Chapter 31 students are required to receive authorization for a Leave of Absence from their designated Vocation Rehabilitation Counselor before they are granted a LOA. Any student requesting a Leave of Absence (LOA) will be notified that their veteran benefits *may* be suspended until they have returned which at that time; the veteran will be reinstated and recertified. Veterans are encouraged NOT to take a LOA in the middle of the course but rather at the end of the course. If a veteran requests an LOA in the middle of the course, the veteran will be responsible to pay back the money received for that course if the grade results in an incomplete. Furthermore, upon recertification, it can take up to two (2) months for the Veterans Affairs office to get the student back into the system resulting in a delay of the first payment.

#### **Military Obligations, Attendance, and Make-up Work**

Many students choose to serve while pursuing their education. Standing by its reputation as a military friendly school, it is the policy of Western Tech to accommodate a student's continuing service.

For members of the National Guard and Reserves, there may be times when students might miss a class or two due to a weekday drill or similar military training. If orders are not issued, the student must contact the registrar and bring a signed letter (usually from the unit CO) that specifically outlines the date(s) on which the student was in a military status. The registrar, upon verifying the letter, will send a clearance notification via email directly to the student. The student will then submit the letter to the instructor, either in person or through email.

**It cannot be emphasized enough that students are responsible to keep their course instructor(s), program director, registrar, and VA certifying official informed of all military absences in order to agree upon and document make-up work or a leave of absence.**

# ADVANCED WELDING TECHNOLOGY

Available at 9624 Plaza Circle Campus



Individuals portrayed in photos are actual students, graduates or employees of Western Tech

## CAREER OPPORTUNITIES IN ADVANCED WELDING TECHNOLOGY

Employment of welders, cutters, solderers, and brazers is projected to grow 4 percent from 2014 to 2024. Employment growth reflects the need for welders in manufacturing because of the importance and versatility of welding as a manufacturing process. Employment growth reflects the need for welders in manufacturing because of the importance and versatility of welding as a manufacturing process. Welders work in a wide variety of industries, from car racing to manufacturing. The work that welders do and the equipment they use vary with the industry. There are more than 100 different processes that a welder can use. The type of weld normally is determined by the types of metals being joined and the conditions under which the welding is to take place. (Source: D.O.L. Occupational Outlook Handbook, 2016-2017 Edition).

Labor Market Information (2012 thru 2022 Projections)

### Texas Labor Market Information

Texas Employment 2012:	47,830
Projected Texas Employment 2022:	57,610
Absolute Change 2012-2022:	9,780
Percent Change 2012-2022:	20.40%
Average Hourly Wage 2014:	\$19.66
Average Openings per year due to Replacement:	1,175
Average Openings per year due to Growth:	980

### National Labor Market Information

National Employment 2012:	357,400
Projected National Employment 2022:	378,200
Absolute Change 2012-2022:	20,800
Percent Change 2012-2022:	5.80%
Average Hourly Wage 2014:	\$19.25
Average Openings per year due to Replacement:	Not Available
Average Openings per year due to Growth:	Not Available

Source: The Labor Market & Career Information Department (LMCI) of the Texas Workforce Commission  
[www.lmci.state.tx.us](http://www.lmci.state.tx.us)

## TECHNICAL STANDARDS AND ESSENTIAL FUNCTIONS

Western Tech's Welding program has established technical standards and essential functions for the program as more fully listed below. The ability to meet these standards and essential functions, with or without reasonable accommodation, is required in order to complete the program satisfactorily. Please review the following technical standards and essential functions carefully.

1. The ability to understand course materials and maintain a certain grade/performance level that meets the set academic requirements.

2. The ability to maintain a professional demeanor at all times and interact professionally with fellow students, internship site employees and clientele, administration and faculty.
3. The ability to adhere to a professional dress code acceptable to the profession and as set by Western Tech.
4. The ability to see detail at close range (within a few feet of the observer).
5. Sufficient flexibility to bend, stretch, twist, or reach with your body, arms, and/or legs.
6. Sufficient finger dexterity and steadiness to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects.
7. Sufficient manual dexterity and steadiness to quickly move your hand, your hand together with your arm or your two hands to grasp, manipulate, or assemble very small objects.
8. The ability to coordinate two or more limbs while sitting, standing, or lying down.
9. The ability to lift up to 50 lbs.
10. The ability to work in confined spaces for extended periods of time without a break.
11. The ability to tolerate standing for extended periods of time without a break.
12. The ability to listen, understand, and communicate ideas presented through spoken words and sentences.

Western Tech does not discriminate in admission or access to programs on the basis of any characteristic protected by law, including disability. Persons with disabilities are eligible for admission, as long as, they can carry out classroom, laboratory and internship assignments; pass written, oral and practical examinations; and meet all of the requirements of the program and generally accepted requirements of the profession, with or without reasonable accommodation. Western Tech will make reasonable accommodations for disabilities. Applicants and students who require accommodation should contact the Campus President and submit a written request for accommodation.

## **CERTIFICATE OF COMPLETION IN ADVANCED WELDING TECHNOLOGY COURSES 1-14**

**1370 CLOCK HOURS**

**49.5 SEMESTER CREDIT UNITS (TWC &  
THECB)**

**49.5 SEMESTER CREDIT HOURS  
(ACCSC)**

### **EDUCATIONAL OBJECTIVES**

The objective of the Advanced Welding Technology program is to train the student as a qualified welder. The qualified welder is capable of interpreting welding blueprints, cutting and welding with oxyacetylene, and plate welding with Shielded Metal Arc Welding (SMAW), Gas Tungsten Arc Welding (GTAW), Gas Metal Arc Welding (GMAW), Innershield (IS), and Flux Core Arc Welding (FCAW). In addition, students will learn skills for pipe lay-out & fit-up, flange applications, rolling offset & pipe blueprint reading.

Those who complete the program successfully will be prepared to work at an entry-level position as structural or pipe welders in various welding environments such as construction companies, shipyards, factories, fabrication companies, welding shops and other enterprises.

### **CERTIFICATIONS**

(6) STRUCTURAL CERTS. - 2G,3G,4G

(POSITIONS) SMAW (STICK) 3/8" PLATE 'OPEN  
V GROOVE'

(2) PIPE CERTS. - 6G (45\*POSITION) SMAW  
(STICK) - 4" SCH. 40 PIPE (45\*POSITION)

COMBINATION: SMAW (STICK) / GTAW (TIG)-  
4" SCH. 40 PIPE

**NOTE:** The Advanced Welding program requires that all "Structural" certification tests be passed as a prerequisite for the "Pipe" welding portion of the program. WTC Welding certifications will only be awarded upon completion of the program in its entirety.

### **TIME CODES**

The following time code is used on all courses to illustrate the amount of time students will spend in class or lab per course and the subsequent number of credit hours awarded.

44/48/4.0

Theory hours per course /

Lab hours per course /

Semester Credit Hours

### **NOTE:**

The sequential order of classes may differ from that included in the program outline below.

## PROGRAM OUTLINE: ADVANCED WELDING TECHNOLOGY

#	COURSE	TITLE	HRS.	THEORY/ LAB/ INTERNSHIP	SEMESTER CREDIT UNIT
1	OR 101	Orientation	60	12/48	2.0
2	BP 102	Blueprint Reading Fundamentals	120	24/96	4.5
3	BP 103	Blueprint Structural Shapes & Symbols	120	24/96	4.5
4	BP 104	Blueprint General Abbreviations	40	8/32	1.5
5	BP 105	Blueprint Pipe Welding Symbols	80	16/64	3.0
6	ME 106	Metallurgy & Fundamentals of GTAW, GMAW & FCAW/IS	120	24/96	4.5
7	PI 107	Pipe Layout & Fit-up	120	24/96	4.5
8	CW 108	Code Welding	120	24/96	4.5
9	PW 201	Pipe Orientation and Safety	120	24/96	4.5
10	PW 202	Pipe Fitting Layout Formulas	80	16/64	3.0
11	PW 203	Metallurgy Fundamentals, GTAW, GMAW & FCAW Pipe Procedures	120	24/96	4.5
12	PW 204	Code Pipe Welding	120	24/96	4.5
13	EP 102	Employment Preparation	50	20/30	2.0
14	IN 108	Internship	100	0/0/100	2.0
<b>Total Hours – Certificate of Completion in Advanced Welding Technology</b>			<b>1370</b>	<b>264/1006/ 100</b>	<b>49.5</b>

\*\* As a safety precaution, Advanced Welding students will be required to furnish and wear leather boots as a part of their WTC uniform.

### **COURSE 1 OR 101 ORIENTATION 12/48/2.0/2.0**

In this course students are introduced to Welding history, Shop Safety, Shop Math and Measuring, Oxy/Acetylene Welding/Cutting, and GMAW (MIG) Welding. This course is also designed to assist students in developing positive safety and work habits for their entry into the Workforce.

Upon completion of these courses, students will be able to:

1. Comprehend and apply shop math skills
2. Measure in 1/8, 1/16, and 1/32 scales
3. Work safely in a Welding shop environment
4. Cut/Weld using the Oxy-Acetylene process
5. Perform basic welding using the GMAW process

### **COURSE 2 BP 102 BLUEPRINT READING FUNDAMENTALS 24/96/4.5/4.5**

In this course students will become familiar with the basic fundamentals of blueprint reading, understand the use of different engineering drawings and drawing terms, and identify the parts of a drawing. Each student will fabricate and weld an object from a Blueprint and begin using the SMAW welding process.

Upon completion of these courses, students will be able to:

1. Identify all lines used on a blueprint
2. Fabricate from a basic drawing
3. Properly fit - up and tack T joints
4. Weld basic T joints with using SMAW process

### **COURSE 3 BP 103 BLUEPRINT-STRUCTURAL SHAPES AND SYMBOLS 24/96/4.5/4.5**

In this course the student will have the opportunity to learn, identify, and apply the various shapes and welding symbols used in structural blueprints. Students will also learn how to fuse metal in different positions with SMAW and use a Track Torch to bevel plates.



Upon completion of these courses, students will be able to:

1. Recognize various welding symbols
2. Interpret welding symbol meanings
3. Operate an Oxy – Acetylene track torch proficiently
4. Weld in the 1F, 2F and 3F welding positions using the SMAW process

## **COURSE 4**

### **BP 104**

#### **BLUEPRINT GENERAL ABBREVIATIONS**

**8/32/1.5/1.5**

In this course student will use and implement the knowledge gained in BP103 with even more in-depth blueprint training. General Welding abbreviations will be covered with SMAW Structural welding in 2G & 3G positions.

Upon completion of these courses, students will be able to:

1. Identify welding abbreviation meanings
2. Comprehend mid-level blueprints
3. Properly prep and bevel material for V groove welding
4. Weld in the 2G position using the SMAW process

## **COURSE 5**

### **BP 105**

#### **BLUEPRINT PIPE WELDING SYMBOLS**

**16/64/3.0/3.0**

In This course the student will learn additional Pipe welding symbols providing the knowledge necessary to fabricate and execute welds from Blueprints and Shop Drawings. Continued Structural SMAW welding in the 2G, 3G, and 4G positions is the Lab focus. The student will be required to fabricate from Shop Drawings as a part of their grade.

Upon completion of these courses, students will be able to:

1. Comprehend pipe welding symbols
2. Fabricate from basic shop drawings and blueprints
3. Accurately execute welds using a blueprint
4. Weld in the 3G position using the SMAW process

## **COURSE 6**

### **ME 106**

#### **METALLURGY & FUNDAMENTALS OF GTAW, GMAW & FCAW/IS**

**24/96/4.5/4.5**

In this course the students will learn the basics of Metallurgy, i.e. the physical properties of metals, crystalline metal structure and learn the effects of annealing, normalizing and stress relieving. Also, the fundamentals of Gas Metal Arc welding (GMAW), Gas Tungsten Arc welding (GTAW) and Flux Core/ Inner shield arc welding (FCAW/IS) will be introduced.

Upon completion of these courses, students will be able to:

1. Comprehend basic Metallurgy concepts
2. Execute midlevel welds using the GMAW process
3. Execute basic welds using the GTAW process
4. Execute basic welds using the FCAW/IS processes

## **COURSE 7**

### **PI 107**

#### **PIPE LAYOUT & FIT-UP**

**24/96/4.5/4.5**

In this course the student will learn basic Pipe layout and fit up, fabricate and weld 2" & 4" pipe and be able to navigate and use the prescribed formulas in the "Pipe Fitters and Pipe Welder's Handbook". The student will also continue welding with the SMAW process in preparation for the AWS Structural certification tests.

Upon completion of these courses, students will be able to:

1. Perform basic pipe fit-up techniques
2. Use pipe fitting formulas
3. Execute welds on 2" pipe using the SMAW process
4. Execute welds on 4" pipe using the SMAW process

## **COURSE 8**

### **CW 108**

#### **CODE WELDING**

**24/96/4.5/4.5**

In this course the student will learn the use of Code Welding, understand the principles of weld testing and take the prescribed Structural AWS certification tests using the SMAW welding process. Also, a Midcourse review of all previous phases will be administered.

Upon completion of these courses, students will be able to:

1. Comprehend the principles of Code Welding
2. Understand AWS Certification testing techniques
3. Fit-up, tack and weld structural test plates
4. Pass AWS structural welding tests using the SMAW process

## **COURSE 9**

### **PW 201**

#### **PIPE ORIENTATION & SAFETY**

**24/96/4.5/4.5**

In this course the student will learn the requirements of Field Welding operations and the safety procedures for Excavation/Trench, Fall Protection and Confined Space safety. This phase will introduce the techniques required for "American Welding Society" (AWS) Certification pipe welding and SMAW welding will be introduced on pipe.

Upon completion of these courses, students will be able to:

1. Follow OSHA Trench, Fall Protection, and Confined Space Entry procedures
2. Accurately prep and fit-up 4" pipe
3. Tack weld 4" pipe
4. Weld 4" pipe in the 1G position using the SMAW process

**COURSE 10**  
**PW 202**  
**PIPE FITTING LAYOUT FORMULAS**  
**16/64/3.0/3.0**

In this course the student will learn the application of formulas, layout procedures, trade math, and continue with more advanced pipe fit-up techniques. The 6G pipe position using SMAW will be introduced for Certification practice.

Upon completion of these courses, students will be able to:

1. Demonstrate advanced pipe layout formulas
2. Execute advanced pipe fit-up procedures
3. Weld 4" pipe in the 2G position using the SMAW process
4. Pass a 1G position pipe certification test using the SMAW process

**COURSE 11**  
**PW 203**  
**METALLURGY FUNDAMENTALS,**  
**GTAW, GMAW & FCAW PIPE**  
**PROCEDURES**  
**24/96/4.5/4.5**

In this course the student will learn Metallurgy of Exotic metals, how to apply Interpass heat and use advanced fit-up techniques including flange applications. The phase will also cover advanced GTAW pipe welding and the GMAW / FCAW pipe processes will be introduced.

Upon completion of these courses, students will be able to:

1. Understand the crystalline structure of metal
2. Comprehend the importance of Interpass welding temperatures
3. Select proper filler material for exotic metals
4. Fit-up and weld pipe flanges accurately
5. Weld pipe using the GTAW, GMAW & FCAW processes

**COURSE 12**  
**PW 204**  
**CODE PIPE WELDING**  
**24/96/4.5/4.5**

In this course the student will be introduced to Pipe Code welding procedures and begin the AWS pipe certification process with SMAW and SMAW/GTAW (6G) on 4" schedule 40 pipe. This phase will also have a review of all previous phases and a comprehensive Final Exam will be administered.

Upon completion of these courses, students will be able to:

1. Pass a comprehensive course Final Exam
2. Understand "PI 1104 Code" pipe certification procedures
3. Pass a 6G position pipe certification test using the SMAW process
4. Pass a 6G position pipe certification test using the SMAW/GTAW processes

**COURSE 13**  
**EP 102**  
**EMPLOYMENT PREPARATION**  
**20/30/2.0/2.0**

In this course students will be prepared for the job-seeking process. Resume construction, job application completion and interviewing techniques will be the focus. Students will undergo mock (practice) interviews and the appropriate attire and mannerisms for successful interviewing will be covered.

Upon completion of these courses, students will be able to:

1. Create a Welding resume'
2. Execute employment searches
3. Express the technical aspects of welding in verbal and written form
4. Prepare and successfully interview for an employment position

**COURSE 14**  
**IN 108**  
**INTERNSHIP**  
**0/0/100/2.0/2.0**

In this course students will experience the daily routines of a Welding/Fabrication shop or 'On site' work situations. The student will have the opportunity to apply the skills and knowledge acquired in the Advanced Welding program and gain real world work experience in the Welding Industry.

Upon completion of these courses, students will be able to:

1. Perform welding and related tasks in a professional manner
2. Demonstrate communication skills and teamwork in the workplace
3. Maintain accurate work records and time sheets
4. Follow directions, policies and employee guidelines as mandated

## COMMERCIAL DRIVER TRAINING

Available at 9624 Plaza Circle Campus



Individuals portrayed in photos are actual students, graduates or employees of Western Tech

### CAREER OPPORTUNITIES IN COMMERCIAL DRIVER TRAINING

Employment of heavy truck and Semi truck drivers is projected to grow 5 percent from 2014 to 2024, about as fast as the average of all occupations. The economy depends on truck drivers to transport freight and keep supply chains moving. As the demand for goods increases, more truck drivers will be needed. Trucks transport most of the freight in the United States, so, as households and businesses increase their spending, the trucking industry will grow. The number of heavy trucks on the road has not reached prerecession levels, despite the increasing demand for freight transportation. To meet the demand, companies are starting to invest in new trucks that are more fuel efficient and easier to drive. For example, some new heavy trucks are equipped with automatic transmissions, blind-spot monitoring, and variable cruise control. Demand for truck drivers is expected to remain strong in the oil and gas industries as more drivers are needed to transport materials to and from extraction sites. (Source D.O.L. Occupational Outlook Handbook, 2016-2017 Edition)

The median annual wage for heavy truck and Semi truck drivers was \$41,340 in May 2016. The median wage is the wage at which half the workers in an occupation earned more than that amount, and half earned less. The lowest 10 percent earned less than \$26,920, and the highest 10 percent earned more than \$63,140. In May 2016, the median annual wages for heavy and tractor-trailer truck drivers in the top industries in which they worked were as follows:

- General Freight Trucking: \$43,520
- Specialized Freight Trucking: \$41,650
- Wholesale Trade: \$40,330

Drivers of heavy trucks and Semi truck usually are paid by how many miles they have driven, plus bonuses. The per-mile rate varies from employer to employer and may depend on the type of cargo and the experience of the driver. Some long-distance drivers, especially owner-operators, are paid a share of the revenue from shipping.

Labor Market Information (2014 thru 2024 Projections)

#### Texas Labor Market Information

Texas Employment 2014:	187,610
Projected Texas Employment 2024:	226,580
Absolute Change 2014-2024:	38,970
Percent Change 2014-2024:	20.8%
Average Hourly Wage 2014:	\$20.59
Average Openings per year due to Growth:	7085

#### National Labor Market Information

National Employment 2014:	1,797,700
Projected National Employment 2024:	131,600
Absolute Change 2012-2024:	12,300
Percent Change 2012-2022:	5%
Average Hourly Wage 2014:	\$20.32
Average Openings per year for Replacement:	N/A

Source: The Labor Market & Career Information Department (LMCI) of the Texas Workforce Commission [www.lmci.state.tx.us](http://www.lmci.state.tx.us)

## ENTRANCE REQUIREMENTS FOR APPLICANTS PURSUING THE COMMERCIAL DRIVER TRAINING PROGRAM

The Texas Department of Motor Vehicles has published requirements for Applicants interested in obtaining a Commercial Driver's License (CDL):

1. Applicants must be a minimum of 18 years of age\*
2. Applicants must be a minimum of 21 years of age for Interstate Licensing. (Note: New Mexico Residents must be 21 years of age in order to obtain a CDL license from New Mexico)\*\*
3. Applicants must possess a valid driver's license from the USA for at least six (6) months prior to their admission into the program.
4. Applicants must meet the requirements of the Motor Carrier Federal Regulations, Part 391.11(b)(2) which states, drivers "...must read and speak the English language sufficiently to converse with the general public, to understand traffic signs and signals in English."
5. Applicants must possess and present a social security identification card.
6. Training is provided with trucks equipped with a ten-speed manual drive transmission

### ADDITIONAL INFORMATION

Applicants must meet the requirements for licensure as a Commercial Driver established by the Texas Department of Transportation Federal Motor Carrier Safety Regulations (FMCSR) and TX DOT:

- \* a) Applicants for a Texas CDL must be a Texas resident for at least 6 months and have a vehicle Registration
- \*\* b) Applicants must be a minimum of 21 years of age for Interstate Licensing. (Note: New Mexico Residents must be 21 years of age in order to obtain a CDL license from New Mexico)
- c) The applicant cannot possess more than one (1) license, cannot have their driving privilege suspended in any state, nor any unpaid traffic tickets in any state. Applicants testing in Texas from out of state, must surrender their auto driver's license and accept a Texas CDL
- d) Applicants must produce vehicle insurance and registration on his/her vehicle(s) that are all registered in his/her name to the DMV

### FOR APPLICANTS THAT ARE UNABLE TO PRODUCE A HIGH SCHOOL DIPLOMA OR GED

(CDT Program Only)

Wonderlic Basic Skills Test (WBST) exam is administered to applicants enrolling in the Commercial Driver Training (CDT) program that have not obtained a high school diploma or GED. They must score a minimum of a 7<sup>th</sup> grade level on Verbal Skills, Quantitative Skills and Skills Composite assessments in order to qualify to be enrolled in the program. If the applicant does not achieve the required score for the program, he/she may elect to re-take the Wonderlic exam. A student may take a second WSBT on the same day, however a substantially different test will be administered. Those wishing to make a third attempt may do so no less than one week after the second attempt. Those wishing to re-take the exam after the third attempt must wait six months before their fourth attempt. If a student does not pass a section, he/she must re-take only the section he/she did not pass.

Wonderlic Cut-Off Scores for Commercial Driver Training (CDT) Program:

Verbal Skills: 211-229 is a 7<sup>th</sup> Grade Level  
Quantitative Skills: 227-240 is a 7<sup>th</sup> Grade Level  
Skills Composite: 211-229 is a 7<sup>th</sup> Grade Level

### Program Costs PRIOR to enrollment into CDT program by the applicant (subject to change)

The following is a list of charges for the CDT program that must be paid by the applicant before being allowed to enroll into the CDT program. Proof of said requirements needs to be provided to the WTC Admissions Representative prior to enrollment.

DOT Physical	\$45.00
DOT Criminal Background/Urinalysis and drug screen	\$45.00
Driving Record (MVR)	\$12.00
CDL Permit and License Fee	\$86.00
TOTAL:	\$188.00

### Background, Driving and Felony Records

Applicants must undergo a background check, to include the driving record. Serious felony charges will prevent the DMV from issuing a CDL. Please check with your admissions representative for the list of those items before choosing to take this program.

Applicants must possess a clear driving record and background check with the following:

- a. No DWI or DUI in the past three (3) years
- b. No careless or reckless driving in the past three (3) years
- c. No more than three (3) moving violations in the last two (2) years
- d. No drug or alcohol related misdemeanors during the previous three (3) years

- e. No felony convictions in the last five (5) years
  - f. No drug or alcohol related felonies within the past ten (10) years
  - g. No felony parole or probation within the past two (2) years
  - h. No felony charges pending. Students may reapply after their case has been adjudicated
- e) Applicants must undergo and pass a Department of Transportation (DOT) physical, to include vision testing and Drug Testing. A “positive” drug test will, if deemed valid after review by a designated medical officer, will result in the student being ineligible for training. Applicants are required to provide the WTC admissions representative with the results.
- f) Applicants must be fingerprinted and have a photo taken
- g) Applicants must release permission to the school to obtain a verifiable Motor Vehicle Report (MVR). For Non-Residents, or in cases where the school cannot accept MVR’s, the applicant must obtain one (1) pre-hire prior to enrollment

**NOTE: Individuals that have gone through the training for the CDL but were unable to obtain a CDL for failure to not produce or pass any of the items listed above, will still be charged for the program in its entirety, or if they fail their driver’s test. Graduates from this program may transfer their credential towards the Diesel Mechanics AOS Degree program for the full 96-hour course exemption.**

## **TECHNICAL STANDARDS AND ESSENTIAL FUNCTIONS**

Western Tech’s Commercial Driver Training program has established technical standards and essential functions for the program as more fully listed below. The ability to meet these standards and essential functions, with or without reasonable accommodation, is required in order to complete the program satisfactorily. Students who are unable to meet these technical standards may not be able to successfully complete the program. Please review the following technical standards and essential functions carefully.

1. The ability to understand course materials and maintain a certain grade/performance level that meets the set academic requirements.
2. Must be able to operate truck equipped with a manual transmission and clutch.
3. The ability to maintain a professional demeanor at all times and interact professionally with fellow students, internship site employees and clientele, administration and faculty.
4. The ability to adhere to a professional dress code acceptable to the profession and as set by Western Tech.
5. The ability to listen, understand, and communicate ideas presented through spoken words and sentences in English.
6. The ability to detect or tell the differences between sounds that vary in pitch and loudness.
7. The ability to see detail at close range (within a few feet of the observer).
8. The ability to sit for long periods of time.
9. The ability to drive at night.
10. The ability to drive long distances and stay alert at all times.
11. The ability to climb steps.
12. The ability to match or detect differences between colors, including shades of color and brightness.
13. Sufficient flexibility to bend, stretch, twist, or reach with your body, arms, and/or legs.
14. The ability to quickly and repeatedly adjust the controls of a vehicle to exact positions.
15. The ability to lift up to 50 lbs.

Western Tech does not discriminate in admission or access to programs on the basis of any characteristic protected by law, including disability. Persons with disabilities are eligible for admission, as long as, they can carry out classroom, laboratory and internship assignments; pass written, oral and practical examinations; and meet all of the requirements of the program and generally accepted requirements of the profession, with or without reasonable accommodation. Western Tech will make reasonable accommodations for disabilities. Applicants and students who require accommodation should contact the Campus President and submit a written request for accommodation.

## **CERTIFICATE OF COMPLETION IN COMMERCIAL DRIVER TRAINING COURSES 1-3**

**200 CLOCK HOURS**

**8.5 SEMESTER CREDIT UNITS (TWC & THECB)**

**200 CLOCK HOURS (ACCSC)**

## **EDUCATIONAL OBJECTIVES**

The Commercial Driver Training offered at Western Technical College is a 200-hour program, conducted in five weeks for day classes and ten weeks for night classes when offered. The program is designed to prepare individuals

with the knowledge base, procedures, and basic skills and abilities so that they will meet the Commercial Driver's License Standards and industry job qualifications as a trainee driver.

Upon completion of the training program, the student is required to obtain his/her CDL in order to complete the program successfully. Graduates will be qualified to obtain their CDL, and as entry-level commercial driver trainees with both short and long-haul trucking companies.

## TIME CODES

The following time code is used on all courses to illustrate the amount of time students will spend in class or lab per course and the subsequent number of credit hours awarded.

44/48/4.0

Theory hours per course /44

Lab hours per course /48

Semester Credit Hours/TWC/THECB/4.0

Semester Credit Hours/ACCSC/4.0

## NOTE:

The sequential order of classes may NOT differ from that included in the program outline below.

## SATISFACTORY PROGRESS

**The minimum requirement for a 200-hour program is:**

A cumulative grade average of at least 70% is required for the student to receive the course certificate. Students will receive written notification of their progress at the midpoint and end of each two-week evaluation period. A student who is not making satisfactory progress at the midpoint will be placed on academic probation for the remainder of the progress evaluation period. The school's registrar will advise the student placed on probation prior to the student returning to class. The date, action taken, and terms of probation will be clearly indicated in the student's permanent file. If the student does not achieve satisfactory progress by the end of the probationary period, the student's enrollment will be terminated.

## RE-ENROLLMENT OF TERMINATED STUDENTS

A student whose enrollment was terminated for unsatisfactory progress may reenroll after a minimum of one progress evaluation period. Such reenrollment does not circumvent the approved refund policy. A student who returns after termination of enrollment for unsatisfactory progress will be placed on academic probation for the next grading period. The student will be advised of this action, and it will be documented in the student's file. If the student does not demonstrate satisfactory progress at the end of this probationary period, the student's enrollment will be terminated.

## LEAVES OF ABSENCE FOR 200 HOUR PROGRAM

The school director may grant a leave of absence after determining that good cause is shown. A student may have no more than two leaves of absence in a 12-month calendar period and may be on leave of absence no more than 30 calendar days during that 12-month calendar period. School attendance records will clearly define the dates of the student's leave of absence. A written statement of the reason(s) leave of absence was granted, signed by both the student and the Campus President indicating approval, will be placed in the student's permanent file. A student's enrollment in the program will be terminated if the student fails to return as scheduled from an approved leave of absence.

## GRADUATION REQUIREMENT

To receive a Certificate of Completion for this program, a student must maintain a cumulative grade average of 70 and obtain a Commercial Driver License by the final day of the program session, depended on driving test scheduling availability.

WTC works hard to ensure students are prepared to challenge the CDL exams through the Texas Department of Safety. The Department allows examinees up to three chances to test in each section which are made up of the "*The Pre-Trip, The Backing Skills and The Driving Skills.*" When students fail to pass an exam, WTC has provided additional time for practice which requires the help of instructor(s), trucks, trailers, and fuel costs at no additional charge. The use of these resources has caused a strain on WTC's resources, therefore effective immediately, after any CDT student fails three road test exams, they will be required to pay Western Technical College an additional \$250.00 to cover the additional costs involved with practicing maneuvers and use of equipment and additional road test.

## PROGRAM OUTLINE: COMMERCIAL DRIVER TRAINING

#	COURSE	TITLE	HRS.	THEORY/ LAB	SEMESTER CREDIT UNIT
1	PCDT 101	Practical Application to Truck Driving	80	75/5	5.0
2	PCDT 102	Basic Vehicle Operations/Range Training	40	13/27	1.0
3	PCDT 103	Advanced Vehicle Operations/Road Training	80	5/75	2.5
<b>Total Hours – Certificate of Completion in Commercial Driver Training</b>			<b>200</b>	<b>93/107</b>	<b>8.5</b>

### PCDT 101

#### **PRACTICAL APPLICATIONS TO TRUCK DRIVING** **75/5/5.0/ (PREREQUISITES – NONE)**

This course introduces students to the rules, regulations and procedures that govern and regulate the trucking industry. During the first week of training, students will study and prepare for the required knowledge tests, which will be taken at the Department of Transportation. Students will receive their driving permit once all endorsement tests have been successfully completed. During the Second week training, students will demonstrate the correct use and inspection of each vehicle control, instrument and component. Students will describe and/or demonstrate the methods and procedures for correct cargo handling and documentation, accident reporting, logbook entries, and trip planning. They will also learn about the culture of the trucking industry to prepare themselves and their families for life on the road. Additionally, students will receive training on the recognition and prevention of human trafficking.

Student can expect 20 hours of homework during this course.

Upon completion of this course, the student will be able to:

1. Inspect a vehicle, complete industry forms
2. Prepare for a trip
3. Recognize and take actions to prevent human trafficking
4. Become certified under the National Safety Council Professional Truck Driver Defensive Driving Course

### COURSE 2

#### PCDT 102

#### **BASIC VEHICLE OPERATIONS/RANGE TRAINING** **13/27/1.0**

Range training provides a secure environment for students to learn and become proficient in the basic maneuvers and skills needed to safely and effectively control a tractor-trailer. Range instruction will include hands-on training in vehicle inspection procedures, which will prepare the student for the CDL Pre-trip Inspection Skills Test. They will practice maneuvering skills and vehicle controls necessary to pass the CDL Basic Control Skills Test and be successful trainee drivers. (Range 13 hours/Observation 27 hrs.) **Prerequisite is PCDT 101.**

Upon completion of this course, the student will be able to:

1. Students will demonstrate the correct procedures for coupling and uncoupling
2. Backing and hooking up a tractor-trailer unit in order to safely dock
3. Pickup and deliver freight as a working driver

### COURSE 3

#### PCDT 103

#### **ADVANCED VEHICLE OPERATIONS/ROAD TRAINING** **5/75/2.5**

Students must successfully complete CDT 103. During this course of the program, students will be given the opportunity to operate a tractor-trailer in the real-world street and highway environment amongst regular traffic. Road instruction will allow students to develop the skills necessary to prepare for the CDL Road Test conducted by a state examiner, and to safely operate a tractor-trailer on public roadways. **Prerequisite is PCDT 101 and PCDT 102.**

Upon completion of this course, the student will be able to:

1. Drive on public roads
2. Develop the skills necessary to operate to safely operate the tractor trailer
3. Develop skills needed to challenge and pass the CDL road test

# CERTIFICATE OF COMPLETION FOR DIESEL ADVANCED TECHNOLOGY EDUCATION

Available at 9624 Plaza Circle Campus



Individuals portrayed in photos are actual students, graduates or employees of Western Tech.

## CAREER OPPORTUNITIES FOR DIESEL ADVANCED TECHNOLOGY EDUCATION

Diesel service technicians and mechanics held about 263,900 jobs in 2014. Diesel technicians usually work in well-ventilated and sometimes noisy repair shops. They occasionally repair vehicles on roadsides or at worksites. Most diesel technicians work full time. Overtime is common, as many repair shops extend their service hours during evenings and weekends. As more freight is shipped across the country, additional diesel-powered trucks will be needed to carry freight where trains and pipelines are not available or economical. Additionally, diesel cars and light trucks are becoming more popular, and more diesel technicians will be needed to maintain and repair these vehicles. Employment of diesel service technicians and mechanics is projected to grow 12 percent from 2014 to 2024, faster than the average for all occupations. Diesel engine maintenance and repair is becoming more complex as engines and other components use more electronic systems to control their operation. For example, fuel injection and engine timing systems rely heavily on microprocessors to maximize fuel efficiency and minimize harmful emissions. In most shops, workers often use hand-held or laptop computers to diagnose problems and adjust engine functions. (Source: D.O.L. Occupational Outlook Handbook, 2016-2017 Edition).

Labor Market Information (2012 thru 2022 Projections)

### Texas Labor Market Information

Texas Employment 2012:	14,140
Projected Texas Employment 2022:	17,220
Absolute Change 2012-2022:	3,080
Percent Change 2012-2022:	21.80%
Average Hourly Wage 2014:	\$22.17
Average Openings per year due to Replacement:	410
Average Openings per year due to Growth:	310

### National Labor Market Information

National Employment 2012:	119,300
Projected National Employment 2022:	131,600
Absolute Change 2012-2022:	12,300
Percent Change 2012-2022:	10.30%
Average Hourly Wage 2014:	\$23.42
Average Openings per year due to Replacement:	Not Available
Average Openings per year due to Growth:	Not Available

Source: The Labor Market & Career Information Department (LMCI) of the Texas Workforce Commission  
[www.lmci.state.tx.us](http://www.lmci.state.tx.us)



## **VOLVO/ MACK Truck-DATE program is Corporate training-based program.**

### **DATE Program Eligibility**

New students enrolling into the Diesel Technology Degree program.

To be eligible to participate in the Volvo / Mack Truck DATE courses the student must meet the following criteria;

1. Have and maintain a 3.0 or higher cumulative GPA throughout the Diesel Degree Program.
2. Have and maintain a 97% or higher attendance rate throughout the Diesel Degree Program.
3. Submit a written application to attend the Volvo / Mack Truck DATE courses during ninth basic core course.
4. Pass the application interview during the tenth basic core course and be accepted.

For returning Western Tech Diesel Program Alumni

Alumni of the Western Tech Diesel Mechanics Program to be eligible to attend the Standalone Volvo / Mack Truck DATE program must meet the following criteria;

1. Be a graduate of the Western Tech Diesel Mechanics Program within the last five years.
2. Be in good Financial standing with Western Tech.
3. Be in good standing with Federal Student Loans. (If applicable).
4. Have graduated with a 3.0 or higher cumulative GPA throughout the Diesel Program.
5. Maintain a 97% or higher attendance rate throughout the Diesel Program.
6. Submit a written application to attend the Volvo / Mack Truck DATE program.
7. Pass the application interview and be accepted into the program.

Note: Students that fail to maintain the minimum 3.0 GPA and 97% attendance requirements after being accepted into the Volvo/Mack Truck DATE Program are subject to being removed from the Volvo/ Mack Truck DATE program.

## **EXPERIENCED INSTRUCTIONAL STAFF**

Our instructors are required to have recent and sufficient field experience and training before joining the Western Tech team. They share insights with our students that might otherwise take years to learn. We continually update our instructors with seminars and workshops to keep them abreast of new technology. In turn, they pass this knowledge on to our students. All of Western Tech's automotive instructors are required to be ASE Certified. A large percentage of the instructional staff is Master Certified in all areas of Medium/Heavy Diesel Trucks. DATE instructors are factory training in Volvo/Mack Professional level technicians.

## **ENTRANCE REQUIREMENTS FOR APPLICANTS PURSUING THE DIESEL ADVANCED EDUCATION PROGRAM**

### **Hybrid Program/Courses**

Students who enroll in the Certificate of Completion for the Diesel Advanced Technology Education Program will receive training through a hybrid delivery system, that is, a portion of their training is provided in a combination of classes being offered both on-ground and online. Specifically, this program will provide 80% of the training and education on-ground and 20% online.

Hybrid courses are web-based and delivered over the Internet using Western Tech's Learning Management System (Canvas). The system provides both synchronous and asynchronous tools used for on-line delivery. The on-line content of the course is covered by using a variety of on-line educational activities such as discussion boards, chat sessions, conference sessions, case studies, lab simulations, and quizzes. In a hybrid program, the face to face schedule is set on specific dates and times of the week, while the on-line portion of the class is organized for the student to have the flexibility to complete the on-line classroom activities based on their personal/work schedules.

Regardless of the mode of delivery, students entering this program can expect the same level of support as on-ground students to include tutoring services, technical support, employment preparation and assistance with job leads, and access to the school's library.

**Participation in online classes is vital to successful program completion. Students are provided with a computer that meets the requirements of the hybrid program. Students must have Internet access from somewhere outside the school in order to fulfill course requirements and succeed in their classes. In addition, students must have a minimum level of comfort with technology, as they may find themselves needing to access course work online for as much as half of the time the class is in session.**

For that reason, all prospective students considering enrollment in any of the hybrid programs are required to take a short "Suitability for Distance Education" survey before they enroll in school. The survey is designed to identify the prospective student's level of proficiency in the use of technology. Students can expect support in the form of training tailored to their identified needs so that they can handle the demands of the Learning Management System that houses much of their work.

### **Driver's License Requirement**

To be accepted into the Diesel Advanced Technology Education program, in addition to the general admissions requirements and enrollment procedure, a prospective student must possess a valid driver's license before being allowed to start class.

## **ENTRANCE REQUIREMENTS FOR CANDIDATES INTERESTED IN PURSUING THE CDL COURSE IN THE DIESEL ADVANCED TECHNOLOGY EDUCATION PROGRAM**

The Texas Department of Motor Vehicles has published requirements for candidates interested in obtaining a Commercial Driver's License (CDL).

1. Candidates that are 18-20 years of age, can qualify for an Intrastate CDL;
2. Candidates 21 years of age or older may apply for an Interstate CDL;
3. Candidates must possess and present a current driver's license from any state. However, candidates must surrender their auto driver's license and accept a Texas CDL;
4. Candidates must undergo a background check. Serious felony charges will prevent the DMV from issuing a CDL. Please check with your admissions representative for the list of those items before choosing to take this course;
5. Candidates must possess and present a social security identification card;
6. Candidates must produce vehicle insurance and registration on his/her vehicle(s) that are all registered in his/her name;
7. The applicant must undergo a Department of Transportation (DOT) physical;
8. DOT Drug Test (must return clean);
9. The applicant must pass a vision exam;
10. The applicant must be fingerprinted and have a photo taken;

**NOTE: Individuals that have gone through the training for the CDL but were unable to obtain a CDL for failure to note produce or pass any of the items listed above, will still be charged for the course in its entirety. Also, students pursuing a CDL in the Diesel Advanced Technology Education program are required to undergo a background check before internship.**

## **TECHNICAL STANDARDS AND ESSENTIAL FUNCTIONS**

Western Tech's Diesel Mechanics program is a hybrid program. It has established technical standards and essential functions for the program as more fully listed below. The ability to meet these standards and essential functions, with or without reasonable accommodation, is required in order to complete the program satisfactorily. Please review the following technical standards and essential functions carefully.

1. The ability to understand course materials and maintain a certain grade/performance level that meets the set academic requirements.
2. The ability to maintain a professional demeanor at all times and interact professionally with fellow students, internship site employees and clientele, administration and faculty.
3. The ability to adhere to a professional dress code acceptable to the profession and as set by Western Tech.
4. The ability to listen, understand, and communicate ideas presented through spoken words and sentences.
5. The ability to detect or tell the differences between sounds that vary in pitch and loudness.
6. The ability to see detail at close range (within a few feet of the observer).
7. The ability to match or detect differences between colors, including shades of color and brightness.
8. Sufficient flexibility to bend, stretch, twist, or reach with your body, arms, and/or legs.
9. The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions.
10. Sufficient finger dexterity and steadiness to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects.
11. Sufficient manual dexterity, strength, and steadiness to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.
12. The ability to coordinate two or more limbs while sitting, standing, or lying down.
13. The ability to use your abdominal and lower back muscles to support and balance part of your body repeatedly or continuously over time without 'giving out' or fatiguing. Work may be done up to 6 feet off the ground.
14. The ability to lift up to 50 lbs.
15. The ability to utilize computers and perform basic computer functions with programs such as Word, Outlook, and Excel.
16. Must be able to utilize E-Books.

Western Tech does not discriminate in admission or access to programs on the basis of any characteristic protected by law, including disability. Persons with disabilities are eligible for admission, as long as, they can carry out classroom, laboratory and internship assignments; pass written, oral and practical examinations; and meet all of the requirements of the program and generally accepted requirements of the profession, with or without reasonable

accommodation. Western Tech will make reasonable accommodations for disabilities. Applicants and students who require accommodation should contact the Campus President and submit a written request for accommodation.

## **CERTIFICATE OF COMPLETION IN DIESEL ADVANCED TECHNOLOGY EDUCATION COURSES 1-12**

**672 CLOCK HOURS**

**28.0 SEMESTER CREDIT UNITS (TWC & THECB)**

**28.0 SEMESTER CREDIT HOURS (ACCSC)**

### **EDUCATIONAL OBJECTIVES**

The objective of the Certificate of Completion in Diesel Advanced Technology Education is to prepare the student for entry-level employment as a Volvo/Mack Truck diesel technician with the basic knowledge and skills to diagnose malfunctions, perform preventative maintenance and make necessary repairs on the following systems: diesel engines, suspension and steering, air brakes, electrical/electronics, drive train, heating ventilation and air conditioning.

The student who completes the program will be prepared to work as an entry-level diesel service technician in medium/heavy-duty Volvo/Mack Truck dealerships, diesel repair facilities, service and fleet maintenance facilities.

### **TIME CODES**

The following time code is used on all courses to illustrate the amount of time students will spend in class or lab per course and the subsequent number of credit hours awarded.

24/24/2.0/2.0

Theory hours per course /

Lab hours per course /

Semester Credit Hours

## PROGRAM OUTLINE: CERTIFICATE IN DIESEL ADVANCED TECHNOLOGY EDUCATION

#	COURSE NUMBERS FOR VOLVO/MACK ELECTIVES	VOLVO/MACK COURSE TITLE	HRS.	THEORY/ LAB	PERCENTAGE ON CAMPUS/ONLINE	SEMESTER CREDIT UNIT
1	VMVF 201	Vehicle Familiarization	48	24/24	80/20	2.0
2	VMCM 202	Computer Navigation	48	24/24	80/20	2.0
3	VME 203	Volvo/Mack Electronics	48	24/24	80/20	2.0
4	VMAD & SRS 204	Aftertreatment Devices & Secondary Restraint Systems	48	24/24	80/20	2.0
5	VMA 205	Volvo/Mack Advanced Diagnostics I & II	96	40/56	80/20	4.0
6	VMEN 206	Volvo/Mack Engines	48	24/24	80/20	2.0
7	VMH 207	Volvo/Mack HVAC	48	24/24	80/20	2.0
8	VMPT 208	Volvo Mack Powertrains	48	24/24	80/20	2.0
9	VMB 209	Volvo/Mack Brake Systems	48	24/24	80/20	2.0
10	VMSS 210	Volvo/Mack Steering & Suspension	48	24/24	80/20	2.0
11	VMAD 211	Volvo/Mack Advanced Diagnostics III	48	24/24	80/20	2.0
12	CDL 212	CDL Training	96	40/56	00/00	4.0
<b>Or</b>						
12	DTW 212	Basic Cutting & Welding	96	40/56	00/0	4.0
<b>Total Hours-Certificate in Diesel Advanced Technology Training</b>			<b>672</b>	<b>320/352/00</b>		<b>28.0</b>

### **COURSE 1 Volvo/Mack VMVF 201 VEHICLE FAMILIARIZATION 24/24/2.0**

This course introduces students to industry and OEM information based on Mack Trucks and Volvo Trucks, model identification, and product specific truck theory. During this course, the student will learn the history of Mack Trucks and Volvo Trucks. Students will learn how to correctly perform preventative maintenance procedures on Mack Trucks and Volvo Trucks, systems and components. Students will be taught the proper procedure to follow when inspecting Mack Trucks and Volvo Trucks. Students will gain knowledge and build skills in time management, warranty, safety, basic shop management and organizational skills.

Throughout the shop/lab time the student will apply the recommended Mack Truck and Volvo Truck procedures and learn how to identify and use Mack and Volvo service tools and equipment. Students will identify specific Mack and Volvo engines, transmissions and truck models. Students will also participate in organization and workflow management while in a shop environment. The student can expect 12 hours of homework during this course. This course includes OEM factory training modules.

Upon completion of this course, the student will be able to:

1. Demonstrate knowledge of the history of Volvo Trucks and Mack Trucks and be able to identify various models of each brand.
2. Visually inspect frames, tires, and exterior components.
3. Inspect and recommend repairs for truck systems.
4. Demonstrate the ability to follow all lab safety procedures and use lab tools.
5. Perform preventative maintenance inspections.

## **COURSE 2**

### **Volvo/Mack**

### **VMCM 202**

### **COMPUTER NAVIGATION**

#### **24/24/2.0**

This course introduces students to using basic computer skills needed to open the Mack and Volvo Truck Dealer Portals (TDP) to view OEM information based on model and vehicle identification number. Students will learn how to access all technician support portals within TDP including, Mack and Volvo Impact, E-media, Electronics Schematics Viewer, VMAC, Mack Electronic Information Systems (EIS), MV Assist, E-Service, and Learning Management System (LMS). Training will be given on how to properly access the Premium Tech Tool (PTT) and Premium Tech Tool 2.0 (PTT 2.0). Student will learn how to identify various sections of PTT including, VCADS, Guided Diagnostics, and Impact for PTT. Students will learn how to properly link diagnostic computer system with truck computer systems. Students will follow all lab safety procedures, proper use of tools and demonstrate the ability to exercise time management and professionalism. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Demonstrate the ability to apply basic computer skills.
2. Demonstrate the ability to properly access the Trucks Dealer Portal (TDP)
3. Demonstrate the ability to use the service manuals within Trucks Dealer Portal for troubleshooting, diagnosing, and repairing vehicle faults.
4. Demonstrate the ability to use Electronic Schematics Viewer
5. Demonstrate the ability to use Mack Electronic Information Systems (EIS), MV Assist, E-Service, and Learning Management System (LMS)

## **COURSE 3**

### **Volvo/Mack**

### **VME 203**

### **VOLVO/MACK ELECTRONICS**

#### **24/24/2.0**

In this course the student will review what electricity is and how it is used within the vehicle, the differences between voltage, amperage, and current. Various circuit types including simple, series, parallel, and series-parallel circuits. Identifying proper volt drops and amperage draws for a starting and charging circuit. The student will also review how to read and interpret wiring schematics and identifying proper wiring and harness repairs on the vehicle. The student will learn how to identify Volvo Trucks specific and Mack Trucks specific Engine Control Module configurations and the three-module design used by Volvo Trucks and Mack Trucks. The student will also learn how to determine the function of the sensors, controls, and actuators of Mack and Volvo Engine platforms. Identify and use vehicle data link communication, multiplexing, and customer programming. The student will follow all lab safety procedures and use of lab tools and exercise time management and professionalism.

Throughout the shop/lab time the student will apply the recommended Mack Truck and Volvo Truck procedures to diagnose and repair Basic Electrical problems, Mack and Volvo Electrical components to include Engine Control Module, the sensors, controls, and actuators of Mack and Volvo engines. Students will use Mack and Volvo Impact, E-media, Electronics Schematics Viewer, VMAC, Mack Electronic Information Systems (EIS). Students will also participate in organization and workflow management while in a shop environment. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Demonstrate the ability to apply basic computer skills.
2. Demonstrate the ability to properly access the Trucks Dealer Portal (TDP)
3. Demonstrate the ability to use the service manuals within Trucks Dealer Portal for troubleshooting, diagnosing, and repairing vehicle faults.
4. Demonstrate the ability to use Electronic Schematics Viewer
5. Demonstrate the ability to use Mack Electronic Information Systems (EIS), MV Assist, E-Service, and Learning Management System (LMS)
6. Identify Volvo Trucks specific and Mack Trucks specific Engine Control Module configurations.
7. Identify the three-module design used by Volvo Trucks and Mack Trucks
8. Be able to determine the function of the sensors, controls, and actuators of Mack and Volvo Engine platforms.
9. Identify vehicle data link communication, multiplexing, and customer programming.
10. Demonstrate the ability to follow all lab safety procedures and use of lab tools.
11. Demonstrate the ability to exercise time management and professionalism.

## **COURSE 4**

### **Volvo/Mack**

### **VMAD&SRS 204**

### **AFTERTREATMENT DEVICES & SECONDARY RESTRAINT SYSTEMS**

#### **24/24/2.0**

In this course the student will be given instruction on Diesel Particulate Filter (DPF) systems & Secondary Restraint Systems on Mack Trucks and Volvo Trucks. Student will learn how to identify catalyzed and non-catalyzed Diesel Particulate Filter systems, the components specific to catalyzed and non-catalyzed DPF systems, how to properly diagnose, repair and maintain DPF and be able to describe the process of regeneration and what chemical changes are occurring in the DPF unit. Students will also learn 2010 Emissions systems on Mack Trucks and Volvo Trucks, how to identify 2010 model year and newer exhaust after treatment system (EATS) components, the regeneration and sublimation process for the diesel particulate filter (DPF) and the selective catalyst reduction (SCR) system, what environmental contamination is reduced, diesel exhaust fluid (DEF) and the proper handling procedures, how to service, diagnose and repair the vehicle EATS system. Students will also learn how to identify the models that have SRS, what the safety advantages of the SRS are when used with the seatbelts to understand the dangers associated with working on SRS systems and be able to perform correct troubleshooting procedures using test resistors, a multi-meter, and VCADS. Students will demonstrate the ability to follow all lab safety procedures and use of lab tools.

Throughout the shop/lab time the student will apply the recommended Mack Truck and Volvo Truck procedures to diagnose and repair aftertreatment devices, catalyzed and non-catalyzed Diesel Particulate Filter systems, diagnose, repair and maintain DPF systems. Students will also diagnose, repair and maintain 2010 and newer after treatment system (EATS) components, regeneration of diesel particulate filter (DPF) and the selective catalyst reduction (SCR) systems. Use diesel exhaust fluid (DEF) and demonstrate the proper handling procedures. Students will also diagnosis and repair Mack and Volvo Secondary Restraint Systems

Students will also participate in organization and workflow management while in a shop environment. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Demonstrate the ability to use the service manuals within Trucks Dealer Portal for troubleshooting, diagnosing, and repairing vehicle faults.
2. To identify catalyzed and non-catalyzed Diesel Particulate Filter systems.
3. Identify the components specific to catalyzed and non-catalyzed DPF systems.
4. Demonstrate the ability to properly diagnose, repair and maintain DPF.
5. Be able to describe the process of regeneration and what chemical changes are occurring in the DPF unit.
6. Identify 2010 model year and newer exhaust after treatment system (EATS) components.
7. Identify the regeneration and sublimation process for the diesel particulate filter (DPF) and the selective catalyst reduction (SCR) system.
8. Be able to explain what environmental contamination is reduced.
9. Be able to identify diesel exhaust fluid (DEF) and the proper handling procedures for the product.
10. Demonstrate the ability to service, diagnose and repair the vehicle EATS system.
11. Demonstrate the ability to follow all lab safety procedures and use of lab tools.
12. Be able to identify the models that have SRS and if the vehicle is so equipped.
13. Identify the safety advantages of the SRS when used with the seatbelts.

14. Understand the dangers associated with working on SRS systems.
15. Be able to perform correct troubleshooting procedures using test resistors, a multi-meter, and VCADS.

**COURSE 5**  
**VOLVO/MACK**  
**VMA 205**  
**VOLVO/MACK ADVANCED DIAGNOSTICS I & II**  
**40/56/4.0**

In this course the student will be given instruction on general and advanced diagnostic troubleshooting practices, procedures, and techniques in a shop environment. Student will learn how to identify fault codes on a vehicle using Mack Trucks and Volvo Trucks proprietary diagnostic software, how to use TDP and PTT during troubleshooting procedures, how to identify HD-OBD and how it will be used in Mack Trucks and Volvo Trucks, J1939, and J1587/1708 data link systems as well as multiplexing, the use of oscilloscopes for electrical fault troubleshooting. Students will also learn how to use an oscilloscope to test injectors, cam and crank sensing timing, and data link troubleshooting. Students will demonstrate the ability to follow all lab safety procedures and use of lab tools.

Throughout the shop/lab time the student will apply the recommended Mack Truck and Volvo Truck procedures for general and advanced diagnostic troubleshooting, identify fault codes using Mack Trucks and Volvo Trucks proprietary diagnostic software use TDP and PTT during troubleshooting, diagnosis J1939, and J1587/1708 data link systems and multiplexing systems use oscilloscopes to troubleshoot electrical faults. Students will also participate in organization and workflow management while in a shop environment. The student can expect 24 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Demonstrate the ability to use the service manuals within Trucks Dealer Portal for troubleshooting, diagnosing, and repairing vehicle faults.
2. Be able to describe and use the general diagnostics and advanced diagnostics in a shop environment.
3. Be able to successfully identify fault codes on a vehicle using Mack Trucks and Volvo Trucks
4. Be able to demonstrate the use of TDP and PTT during troubleshooting procedures.
5. Be able to identify HD-OBD and how it will be used in Mack Trucks and Volvo Trucks
6. Demonstrate an understanding of the ISO, J1939, and J1587/1708 data link systems as well as multiplexing.
7. Be able to identify an oscilloscope and how it is used for electrical fault troubleshooting and usage on injectors, cam and crank sensing timing, and data link troubleshooting.
8. Demonstrate the ability to follow all lab safety procedures and use of lab tools.
9. Demonstrate the ability to exercise time management and professionalism.

**COURSE 6**  
**Volvo/Mack**  
**VMEN 206**  
**VOLVO/MACK ENGINES**  
**24/24/2.0**

In this course the student will be given instructions on how to identify and explain the components of a Volvo D-series and/or Mack MP-series engine. Students will learn how to disassemble, inspect and overhaul a Volvo or Mack engine. Students will also learn the ability to properly identify parts failure and how to properly research parts needed to repair the engine to working order as needed.

Throughout the shop/lab time the student will apply the recommended Mack Truck and Volvo Truck procedures and special tools for engine overhaul, parts failure analyzes and correct repair parts selection. Students will also participate in organization and workflow management while in a shop environment. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Demonstrate the ability to use the service manuals within Trucks Dealer Portal for troubleshooting, diagnosing, and repairing vehicle faults.
2. Be able to identify and explain the components of a Volvo D-series and/or Mack MP-series engine.
3. Demonstrate the ability to overhaul a Volvo or Mack engine.
4. Demonstrate the ability to properly identify parts failure.
5. Be able to properly research parts needed to repair the engine to working order as needed.
6. Demonstrate the ability to follow all lab safety procedures and use of lab tools.
7. Demonstrate the ability to exercise time management and professionalism

**COURSE 7**  
**Volvo/Mack**  
**VMH 207**  
**VOLVO/MACK HVAC**  
**24/24/2.0**

In this course the student will be given instruction on Mack and Volvo HVAC component location and function during normal operation, how to locate and operate the cab and sleeper HVAC controls during the servicing procedure and how to service, troubleshoot and repair the vehicle's HVAC system for the cab and sleeper using a/c recovery/recycling equipment.

Throughout the shop/lab time the student will apply the recommended Mack Truck and Volvo Truck procedures and special tools for HVAC system diagnosis and repair. Students will also participate in organization and workflow management while in a shop environment. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Demonstrate the ability to use the service manuals within Trucks Dealer Portal for troubleshooting, diagnosing, and repairing vehicle faults.
2. Be able to identify component location and function during normal operation of the HVAC system.
3. Demonstrate the ability to locate and operate the cab and sleeper HVAC controls during the servicing procedure.
4. Demonstrate the ability to service, troubleshoot and repair the vehicle's HVAC system for the cab and sleeper using a/c recovery/recycling equipment.
5. Demonstrate the ability to follow all lab safety procedures and use of lab tools.
6. Demonstrate the ability to exercise time management and professionalism.

**COURSE 8**  
**Volvo/Mack**  
**VMPT 208**  
**VOLVO MACK POWERTRAINS**  
**24/24/2.0**

In this course the student will be given instruction on Mack and Volvo I-shift or M-drive transmissions, how to service, troubleshoot, and repair transmissions (M-Drive and I-Shift) using Mack and Volvo specific electronic resources, how to use PTT and VCADS to properly actuate the automated transmission diagnostic tools, and how to correctly identify a Mack top-load differential assembly. Students will also learn how to service, troubleshoot, and repair Mack differential and power divider assemblies and completely disassemble and reassemble the Mack differential using the specified repair manual.

Throughout the shop/lab time the student will apply the recommended Mack Truck and Volvo Truck procedures and special tools for transmission and differential diagnosis and repair. Students will also participate in organization and workflow management while in a shop environment. The student can expect 12 hours of homework during this course. This course includes OEM factory training modules.

Upon completion of this course, the student will be able to:

1. Demonstrate the ability to use the service manuals within Trucks Dealer Portal for troubleshooting, diagnosing, and repairing vehicle faults.
2. Correctly identify an I-shift or M-drive transmission.
3. Be able to service, troubleshoot, and repair transmissions (M-Drive and I-Shift) using Mack and Volvo specific electronic resources.



4. Be able to use PTT and VCADS to properly actuate the automated transmission diagnostic tools.
5. Correctly identify a Mack top-load differential assembly.
6. Be able to demonstrate the ability to service, troubleshoot, and repair Mack differential and power divider assemblies.
7. Completely disassemble and reassemble the Mack differential using the specified repair manual.
8. Demonstrate the ability to follow all lab safety procedures and use of lab tools
9. Demonstrate the ability to exercise time management and professionalism.

**COURSE 9**  
**VOLVO/MACK**  
**VMB 209**  
**VOLVO/MACK BRAKE SYSTEMS**  
**24/24/2.0**

In this course the student will be given instruction on Mack and Volvo specific Mechanical and electronic braking systems. The student will learn details about the air braking systems used on Mack Trucks and Volvo Trucks, how to service, troubleshoot, repair and adjust as necessary the vehicle's brakes, and what type of ABS system is in use on an individual truck. Students will also learn how to test, repair or replace sensors and about the different inputs used by the ABS control to provide enhanced antilock braking and how to use handheld computer system for servicing and repairing the ABS system.

Throughout the shop/lab time the student will apply the recommended Mack Truck and Volvo Truck procedures and special tools for brake system and ABS systems diagnostics and repairs. Students will also participate in organization and workflow management while in a shop environment. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Demonstrate the ability to use the service manuals within Trucks Dealer Portal for troubleshooting, diagnosing, and repairing vehicle faults.
2. Be able to identify the air braking systems used on Mack Trucks and Volvo Trucks.
3. Demonstrate the ability to service, troubleshoot, repair, and adjust as necessary the vehicle's brakes.
4. Be able to identify what type of ABS system is in use on an individual truck.
5. Be able to identify additional sensor inputs used by the ABS control to provide enhanced antilock braking.
6. Demonstrate the use of a handheld computer system for servicing and repairing the ABS system.
7. Demonstrate the use of the Bendix Acom system for servicing and repairing the ABS system.
8. Demonstrate the ability to follow all lab safety procedures and use of lab tools.
9. Demonstrate the ability to exercise time management and professionalism.

**COURSE 10**  
**VOLVO/MACK**  
**VMSS 210**  
**VOLVO/MACK STEERING & SUSPENSION**  
**24/24/2.0**

In this course the student will be given instruction on Mack and Volvo specific steering and suspension systems. The student will learn how to service and adjust as necessary air ride suspension systems and steel leaf spring systems, how to identify, troubleshoot, and diagnose steering and stability system issues and how to correct alignment angles of drive and steer axle assemblies. The student will also learn how to identify tire wear patterns and how steering and suspension systems can have this effect.

Throughout the shop/lab time the student will apply the recommended Mack Truck and Volvo Truck procedures and special tools for steering and suspension systems diagnostics and repairs, alignment of tires and correction of tire wear problems. Students will also participate in organization and workflow management while in a shop environment. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Demonstrate the ability to use the service manuals within Trucks Dealer Portal for troubleshooting, diagnosing, and repairing vehicle faults.
2. Have the ability to identify and explain Mack steering and suspension systems found on Mack Trucks.

3. Demonstrate the ability to service and adjust as necessary air ride suspension systems and steel leaf spring systems.
4. Be able to identify, troubleshoot, and diagnose steering and stability system issues.
5. Be able to identify the correct alignment angles of drive and steer axle assemblies.
6. Be able to identify tire wear patterns and how steering and suspension systems can have this effect.
7. Demonstrate the ability to follow all lab safety procedures and use of lab tools.
8. Demonstrate the ability to exercise time management and professionalism.

## **COURSE 11**

### **Volvo/Mack**

#### **VMAD 211**

### **VOLVO/MACK ADVANCED DIAGNOSTICS III**

**24/24/2.0**

In this course the student will be given a review on previously learned general and advanced diagnostic troubleshooting practices, procedures, and techniques, the student will also learn how to use the general diagnostics and advanced diagnostics in a shop environment, how to successfully identify fault codes on a vehicle using Mack Trucks and Volvo Trucks proprietary diagnostic software, and how to the use of TDP and PTT during troubleshooting procedures. The student will learn how to identify HD-OBD and how it will be used in Mack Trucks and Volvo Trucks, an understanding of the ISO, J1939, and J1587/1708 data link systems as well as multiplexing and detailed use of oscilloscope usage on injectors, cam and crank sensing timing, and data link troubleshooting.

Throughout the shop/lab time the student will apply the recommended Mack Truck and Volvo Truck procedures and special tools for diagnostic troubleshooting practices, procedures, and techniques and correction of vehicle fault codes. Students will also participate in organization and workflow management while in a shop environment. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Demonstrate the ability to use the service manuals within Trucks Dealer Portal for troubleshooting, diagnosing, and repairing vehicle faults.
2. Be able to describe and use the general diagnostics and advanced diagnostics in a shop environment.
3. Be able to successfully identify fault codes on a vehicle using Mack Trucks and Volvo Trucks proprietary diagnostic software.
4. Be able to demonstrate the use of TDP and PTT during troubleshooting procedures.
5. Be able to identify HD-OBD and how it will be used in Mack Trucks and Volvo Trucks
6. Demonstrate an understanding of the ISO, J1939, and J1587/1708 data link systems as well as multiplexing.
7. Demonstrate oscilloscope usage on injectors, cam and crank sensing timing, and data link troubleshooting.
8. Demonstrate the ability to follow all lab safety procedures and use of lab tools.
9. Demonstrate the ability to exercise time management and professionalism.

## **COURSE 12**

### **OPTION #1**

#### **CDL 212**

### **CDL TRAINING**

**40/56/4.0**

The student will receive entry-level training in commercial vehicle operation and driving with classroom and behind-the-wheel instruction. This will include laws relating to intrastate commercial motor vehicle operations; pre-trip inspection, vehicles safety and operational equipment. Coupling and uncoupling of combination units, placing the commercial motor vehicle in safe operation, the use of controls and emergency equipment. The student will be trained on inspection of mechanical components, defensive driving techniques, cargo loading, securing load, documentation, map reading, DOT logbooks, trip planning, accident and fire prevention, reporting, hazardous material transportation and documentation. The students will also be given demonstration and skill development of basic maneuvers of driving a combination vehicle. Driving proficiency development will include vehicle control, backing, visual search, shifting, turning, space and speed management, and hazard perception. Successful completion of this class should prepare the student to pass the Commercial Driver's License Class B(CDL) skill examination.

Classroom and behind-the-wheel instruction will consist of: laws relating to either interstate and/or intrastate commercial motor vehicle operations; pre-trip inspection of commercial motor vehicles and both safety and operational equipment; coupling and uncoupling of combination units, if the commercial motor vehicle to be driven

includes such units; placing the commercial motor vehicle in operation; use of the commercial motor vehicle's controls and emergency equipment; operation of the inner-city and interstate highway traffic and passing; turning, backing, and parking the commercial motor vehicle; braking and slowing the vehicle by means other than application of the brakes; and completing driver's daily log books. Students that select this option must meet all state and Federal requirements related to obtaining a Class B CDL.

**OR**

**COURSE 12**

**OPTION #2**

**DTBCW 204**

**BASIC CUTTING AND WELDING**

**40/56/4.0**

During this course, the student will be taught how to set-up the oxyacetylene process for cutting and welding. The student will learn the basic techniques for basic fillet welds. Safety precautions will be strictly enforced.

The shop/lab work will consist of the student applying the recommended shop and personal safety procedures, the student will practice metal cutting and horizontal welding.

Upon completion of this course, the student will be able to:

1. Fully understand the importance of shop and equipment safety.
2. Breakdown and set-up oxygen and acetylene cutting and welding torches.
3. Fuse metal in the horizontal position using the shielded metal arc welding process.

## MASSAGE THERAPY

Available at 9451 Diana Drive Campus



Individuals portrayed in photos are actual students, graduates or employees of Western Tech.

### CAREER OPPORTUNITIES IN MASSAGE THERAPY

Massage therapists held about 160,300 jobs in 2016. Thirty-nine percent of therapists were self-employed in 2016. As an increasing number of states adopt licensing requirements and standards for therapists, the practice of massage is likely to be respected and accepted by more people as a way to treat pain and to improve overall wellness. Employment of massage therapists is projected to grow 26 percent from 2016 to 2026, much faster than the average for all occupations. Massage also offers specific benefits to particular groups of people whose continued demand for massage services will lead to overall growth for the occupation. (Source: D.O.L. Occupational Outlook Handbook, 2017-2019 Edition)

#### Texas Labor Market Information

Texas Employment 2016:	11,356
Projected Texas Employment 2026:	14,954
Absolute Change 2012-2026:	3,598
Percent Change 2012-2026:	31.68%
Average Hourly Wage 2016:	\$19.17
Average Openings per year due to Replacement:	472
Average Openings per year due to Growth:	1692

#### National Labor Market Information

National Employment 2016:	160,300
Projected National Employment 2026:	202,400
Absolute Change 2012-2026:	42,100
Percent Change 2012-2026:	26%
Average Hourly Wage 2016:	\$21.39
Average Openings per year due to Replacement:	N/A
Average Openings per year due to Growth:	N/A

Source: The Labor Market & Career Information Department (LMCI) of the Texas Workforce Commission  
[www.lmci.state.tx.us](http://www.lmci.state.tx.us)

Because many therapists work part time, yearly earnings can vary considerably, depending on the therapist's schedule. Generally, massage therapists earn some portion of their income as gratuities. For those that work in a hospital or other clinical setting, however, tipping is not common.

## ENTRANCE REQUIREMENTS FOR APPLICANTS PURSUING THE MASSAGE THERAPY PROGRAM

1. All students starting the massage therapy program are highly recommended to attend the 1-day orientation prior to starting the Massage Therapy program. Dates are provided by admissions representatives.
2. Admission into the Massage Therapy program requires proof of negative current Tuberculosis test (less than 1 year). Immunizations are not a requirement for admission into this program. All other general requirements apply.

## POLICIES & STANDARDS SPECIFIC TO THE MASSAGE THERAPY PROGRAM

### Student/Teacher Ratio

The pupil-teacher ratio; is not to exceed 24 students to 1 instructor. No more than 3 students can work from 1 station for lab courses.

### Leave of Absence (LOA)

Students requesting a leave of absence must do so in writing. LOAs' must be approved by program director and/or Campus President. A leave of absence for reasonable purposes acceptable to the massage therapy educational program shall not exceed the lesser of 30 school days or 60 calendar days. A student shall be granted only one leave of absence for each 12-month period. If the LOA was in excess of 20% of a course(s) (not necessarily the progress report period), the student may be required to retake the course(s) missed. There may be an additional cost to retake the course. LOA's or absences equaling less than 15% of a single course, require the student to make up each and every hour (where applicable) in order to meet the prescribed minimum state requirements from the program's regulatory body, the Texas Department of Licensing and Regulation (TDLR). LOAs', retaking courses or change of schedules may affect the student's graduation date. This may also require the student to change class schedules for the remainder of the training until completion of the program if courses are available within a reasonable amount of time.

### Absences and Make up Time

All absences, regardless of the reason, must be made up. Make up time is completed under the supervision of an instructor during an *already scheduled class and the subject must be related to the subject matter missed*. A "Make up Time Form" will be used to track and log make up any hours missed. Hands on courses require the student making up time to provide massage by securing help from a fellow massage therapy student to serve as a model for learning purposes.

**Saturdays** may be available for make-up time only during scheduled internships that are in progress and must be approved by attending faculty. Saturday make up time must be approved by a supervising instructor.

**\*Student is responsible for scheduling and completing all make up hours. All standard make up time policies to WTC apply. The following policies are specific to massage therapy.**

**The following grade make up policies are specific to massage therapy:**

1. Tests, midterms and finals missed due to absence may be made up *on the date* a student returns to class for a maximum grade of 70%.
2. Oral presentation assignment(s) missed due to an absence may be made up on the date a student returns to class for a maximum score of 70. Instructor's approval is required.
3. Quizzes, group activity participation/presentations or homework assessments missed will receive a grade of "0" and cannot be made up.
4. Homework not turned in due to an absence or a tardy may be turned in for a maximum score of 50% on the date of student's return to class with instructor's approval.
5. Students who miss a test, assigned oral presentations or homework assignments due to military duty, jury duty or a death in the immediate family, will be allowed to make-up a test, oral presentation or turn in a homework assignment for full credit. Documentation justifying absence is required to receive full credit. All previous policies apply.

### Conduct Policy

All massage therapy students are required to use professional conduct as described in the Western Tech Student Handbook. Due to the nature of the Massage Therapy program, all massage therapy students must also adhere by the following conduct standards which include, but are not limited to following:

- The student shall not make comments or jokes of a deviant and/or sexual nature. There is a zero-tolerance policy. Students violating this policy will be dropped from the program without exception.
- Because Massage Therapy is a health care career, and students train using the human body, the student shall refer to the human body in a professional manner using proper terminology. The student shall also refrain from making comments of any kind in reference to the physical status and or appearance whether complimentary or derogatory about any other student, faculty, staff member, any other employee of Western Tech, internship clients or guests of the College.
- Students shall use confidentiality standards in accordance to professional health care environments regarding other students and/or internship clients.

- Students shall display professional demeanor, language, student to student/instructor interaction and conduct that that fosters a safe, productive and ethical learning environment for themselves and all students, employees and guests of Western Tech. other students enrolled in the program.
- Students shall not violate professional, ethical and safety standards of the massage therapy field to include ethical standards as set by Western Tech and Texas Department of Licensing and Regulation (TDLR).

Students who violate these program specific conduct policies are subject to disciplinary action which can result in suspension up to termination.

### **Health and Hygiene**

In addition to standard WTC Health and Hygiene policies, massage therapy students must maintain fingernails trimmed at active length no longer than the fingertips. Acrylic nails, nail polish or clear coating of any kind are NOT allowed in the program.

Students visiting WTC outside regularly scheduled class hours for tutoring, seminars, exam reviews, make-up time, workshops, or other functions, are required to maintain professional attire/uniforms and clean personal hygiene.

### **Internship**

During new student orientation, as well as at least 2 weeks prior to internship, students are informed of internship available schedules. All students must attend a mandatory internship orientation where they will provide appointment availability. Appointment availability encompasses both scheduled appointments and availability for walk-in appointments. Students' schedules are created utilizing electronic scheduling software. Each student will be assigned a personal account which will allow them to log in see availability, appointments as well as internship productivity.

Due to the nature of the internship portion of the program and for purposes of creating a "real world" training setting, students who accumulate more than one late arrival or absence to a scheduled appointment or availability start time will face disciplinary action resulting in a suspension, up to termination. This will be handled on a case by case basis. Student availability schedules are prepared and implemented with reasonable notice to students. It is the student's responsibility to stay informed and compliant of scheduled internship dates, times, appointments, changes and meet the agreed on scheduled availability requirements. All student internship schedule changes must be approved by the internship coordinator, instructor and/or program director.

Internship 101 and Internship 102 are scheduled courses within the program. Clinical appointment times are scheduled during these courses and are also available outside of regularly scheduled class times to include Saturdays as directed by the internship coordinator, instructor or program director. This ensures that students have ample time to complete their internship training requirements prior to graduation. It is the student's responsibility to complete their internship training using all options available. Internship must be completed prior to the completion of the program and is a requirement for graduation. Student competency and internship grades will include a minimum of 2 instructor hands-on evaluations throughout internship as well as professionalism, performance and other grades as assigned by instructors. If students do not complete internship during the scheduled internship courses, the student will receive an "I" (Incomplete) as a grade until such time that the student completes all internship requirements during available schedules. Attendance and completion of internship is measured in "hands-on hours completed", not merely "present on campus". If a student receives a grade below 60% for either Internship 101 or 102, the student must start the phase over. In turn, this may affect the student's graduation date.

### **Massage Therapy Program Graduation and Licensing Examination Requirements**

1. The Massage Therapy Internship is a requirement for completion of the program for all students enrolled in the program, unless exempt by the Texas Department of Licensing and Regulation (TDLR) due to previous completion at another approved school or institution. All transcripts are reviewed by the Campus President for monetary purposes only. Please see Transfer Credit Section.
2. After having completed no less than 500 hrs. of training, students are required to take the MBLEX (Massage and Bodywork Licensing Examination) prior to graduation. If the student is not successful in passing the examination but has taken the exam prior to the last date of class of the program, the student has met this requirement. If a student was awarded credit by TDLR for previous education and has met the state's minimal educational requirements, the student is eligible to take the licensing examination.
3. Students must complete the online Canvas course and a mock exam prescribed by the department with a minimum passing score of 80% prior to being registered to take the MBLEX
4. Applicants submitting applications for licensure or renewals must submit fingerprints for a national criminal history record review. The applicant is responsible for paying the fee associated with this review to the fingerprint service vendor used by Texas Department of Public Safety.

### **Transfer Credit**

Individuals wishing to enroll in the Massage Therapy program who have prior training or education credits applicable to the State's educational requirements for licensure must submit official transcripts from previous-approved massage therapy program(s), colleges or universities directly to the Texas Department of Licensing and Regulation (TDLR). Notification of credit transfer eligibility will be sent directly to the person applying by the Texas Department of Licensing and Regulation (TDLR). Individuals must then present credit eligibility results to Western

Tech prior to enrollment for evaluation. It is the applicant's responsibility to submit an application of previous education to the Texas Department of Licensing and Regulation (TDLR) Massage Therapy Licensing Program prior to enrolling at Western Tech.

## **CONTACT INFORMATION FOR THE TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR)**

For more information about Massage Therapy, email TDLR at [CS.MassageTherapy@tdlr.texas.gov](mailto:CS.MassageTherapy@tdlr.texas.gov) or contact us at:

Texas Department of Licensing and Regulation  
Massage Therapy  
PO Box 12057  
Austin, TX 78711

Telephone: (512) 463-6599  
Toll-Free (in Texas): (800) 803-9202  
Fax: (512) 463-9468  
Relay Texas-TDD: (800) 735-2989  
Website: <https://www.license.state.tx.us/mas/mas.htm>

## **TEXAS DEPARTMENT OF LICENSING AND REGULATION (TDLR) GRIEVANCE POLICY**

### **117.110. Complaints**

*(New Section adopted effective November 1, 2017, 42 TexReg 4991)*

- (a) Any person may file a complaint with the department alleging that a massage therapist, massage school, massage therapy instructor, massage establishment, continuing education provider, or another person or business has violated the Act or this chapter.
- (b) A person wishing to file a complaint against a massage therapist, massage school, massage therapy instructor, massage establishment, continuing education provider, or another person or business shall notify the department at Texas Department of Licensing and Regulation, Massage Therapy Program, P.O. Box 12157, Austin, Texas 78711, (512) 539-5600, or [www.tdlr.texas.gov](http://www.tdlr.texas.gov).

### **117.65. Massage School Conduct and Grievance Policy**

*(New Section adopted effective November 1, 2017, 42 TexReg 4991)*

- (a) A massage school shall develop and implement a written policy pertaining to the conduct of students. The policy shall include:
  - (1) conditions for dismissal; and
  - (2) conditions for re-entrance of those students dismissed for violating the conduct policy.
- (b) Each massage school shall establish a written grievance policy and procedure that is disclosed to all students at the time of enrollment.
- (c) The grievance policy and procedure shall:
  - (1) attempt to resolve disputes between students, including drops and graduates, and the school or instructor;
  - (2) require that adequate records be maintained of grievances and resolutions;
  - (3) require that every effort to resolve grievances and complaints is made; and
  - (4) prohibit a massage school from disciplining or retaliating against a student for filing a complaint with the department

## **CANCELLATION & REFUND POLICY**

- A. A full refund of all monies paid by a student will be made if:
  - 1. The student cancels the enrollment agreement within 72 hours (until midnight of the third day excluding Saturdays, Sundays, and legal holidays) after the enrollment contract is signed by the prospective student;
  - 2. The enrollment of the student was procured as the result of any misrepresentation in advertising, in promotional materials of the massage therapy educational program or by the owner, the massage school, or massage therapy instructor; or
  - 3. The student was not provided ample opportunity to read the information provided in §140.341 (a) of The Texas 25 Administrative Code.
- B. After expiration of the 72-hour cancellation privilege, or if the student fails to enter, withdraws from, or is terminated from the program at any time prior to completion the refund policy is:
  - 1. Refunds for each program will be based on the program time expressed in clock hours;
  - 2. Refunds must be consummated within 30 days after the earliest of:
    - a. The effective date of termination if the student is terminated;
    - b. The date of receipt of written notice from the student of withdrawal; or
    - c. 10 instructional days following the first day of the program if the student fails to enter;

3. If tuition is collected in advance of the first day of the program, and if, after expiration of the 72-hour cancellation privilege, the student does not enter the program, not more than \$200 shall be retained;
4. If a student enters a massage therapy educational program and is terminated or withdraws, the minimum refund of the tuition will be:
  - a. During the first week or one-tenth of the program, whichever is less, 90% of the remaining tuition;
  - b. After the first week or one-tenth of the program, whichever is less, but within the first three weeks of the program, 80% of the remaining tuition;
  - c. After the first three weeks of the program, but within the first quarter of the program, 75% of the remaining tuition;
  - d. During the second quarter of the program, 50% of the remaining tuition; e.
  - e. During the third quarter of the program, 10% of the remaining tuition;
  - f. During the last quarter of the program, the student may be considered obligated for the full tuition;
5. Refunds of items of extra expense to the student, such as instructional supplies, books, student activities, laboratory fees, service charges, rentals, deposits, and all other such ancillary miscellaneous charges, where these items are separately stated and shown in the pre-enrollment information, will be made in a reasonable manner;
6. If a program is discontinued by the school and this prevents the student from completing the program:
  - a. All tuition and fees paid shall be refunded if the student is not provided with a transcript of all successfully completed hours within 30 days of discontinuance of the program; or
  - b. In the event, an additional or changed location is 10 miles or more from the previously approved location of instruction and an enrolled student is unable to complete the program at the additional or changed location as determined by the department:
    - i. All tuition and fees paid shall be refunded if the student is not provided with a transcript of all successfully completed hours within 30 days of the change of location; or
    - ii. All unearned tuition and fees shall be refunded if a transcript of all successfully completed hours is provided within 30 days of the change of location.
7. If a student did not meet the requirements of a program and the student does not complete the program for any reason, all tuition and fees shall be refunded

*\*In all refund computations, leaves of absence, suspensions, school holidays, days when classes are not offered, and summer vacations shall not be counted as part of the elapsed time for purposes of calculating of a student's refund.*

#### **Addition to the Massage Therapy Program's Cancellation and Refund Policy**

Students who decide to leave their program within the first 14 school days of starting their program will be entitled to a full tuition refund, less administrative fees not to exceed \$100, and will be eligible for a full refund of tools, and supplies (including uniforms) if returned to Western Tech in good condition. Any balances that remain for non-returned items will be billed to the student, and any balance owed needs to be paid within 3 months to avoid the account from being sent to collections.

#### **TECHNICAL STANDARDS AND ESSENTIAL FUNCTIONS**

Western Tech's program of Massage Therapy has established technical standards and essential functions for the program as more fully listed below. The ability to meet these standards and essential functions, with or without reasonable accommodation, is required in order to complete the program satisfactorily. Please review the following technical standards and essential functions carefully.

1. The ability to understand course materials and maintain a certain grade/performance level that meets the set academic requirements.
2. The ability to maintain a professional demeanor at all times and interact professionally with fellow students, internship clients, college administration, faculty and staff.
3. The ability to listen, understand and communicate ideas presented through spoken words and sentences.
4. The ability to adhere to a professional dress code acceptable to the profession and as set by Western Tech.
5. The ability to lift a minimum of 50lbs.
6. The ability to carry, move and adjust a massage table and massage chair.
7. The ability to assist clients and patients in clinical settings in getting on and off tables, transfer to and off from wheelchairs and or other assistive medical equipment without limitation.
8. The ability to stand, use both upper limbs to perform body work for a minimum of one hour and a maximum of 6 hours with minimal breaks.
9. Satisfactory visual acuity for reading and documentation of patient treatment, reading the Massage Therapist's plan of care, and measuring patient range of motion using a variety of measuring devices.



10. Sufficient manual dexterity to perform fine motor tasks such as; palpation, assessments, massage and related techniques for all portions of the program.
11. Sufficient flexibility to bend, stretch, twist, or reach with your body, arms, and/or legs.
12. For Internship 101, Internship 102 & clinical practicum, the ability to stand and perform manual massage techniques for a sustained duration of time of no less than 4 hours and no more than 8 hours per day. Students should be able to apply sustained industry-standard levels of pressure using thumbs, fingers, wrists, forearms and hands for up to 2 hours at a time with no breaks.
13. The ability to provide and receive light therapeutic and deep tissue massage, massage that affects circulatory and lymphatic systems, sports massage and all modalities included in the training on all parts of the body involved in the training without obstacles to include facial hair.
14. Working or laying on a therapeutic table in both prone and supine position, for a period no less than 1 hour, and up to 2 hours.
15. The ability to provide and receive hydrotherapy treatments (i.e. hot packs, ice packs, thermo-wraps, steam, contrast baths, therapeutic body wraps).
16. The ability to perform light to medium low impact cardiac and strength building exercise.
17. Because massage therapy is a health care service and learning are done using the human body, the student must be able to participate in all areas of training, including but not limited to receiving massage therapy services in clinical settings. Please be advised, this involves disrobing and receiving massage services from fellow students and licensed program instructors while covered with professional massage therapy draping. Students will be required to work on clients of both genders without discrimination and limitations.
18. The ability to record client histories, to provide routine safety instructions, and conduct a safe and professional massage session with little or no supervision.
19. The ability to implement sanitation standards along with universal precautions in health care to include fingernail length acceptable to the program faculty and program director.
20. The ability to remove all body piercings located in areas where therapeutic massage is applied i.e. facial & body piercings etc.

**MASSAGE THERAPY PROGRAM  
COURSES 1-14  
750 CLOCK HOURS  
26.0 SEMESTER CREDIT HOURS  
(ACCSC)**

**EDUCATIONAL OBJECTIVES**

This program provides the student with the necessary entry level and advanced skills for competency, confidence and achievement in the field of massage therapy. By introducing foundations in business, ethics, professionalism and entrepreneurial paradigms, students also gain understanding of both technical and business strategies required in the field. In addition, students are also trained and can receive certification in first aid & cardiopulmonary resuscitation (BLS/CPR) for healthcare providers.

The student will also develop an extensive knowledge base of critical hands on skills and will gain real world experience through a comprehensive clinical internship. Students will also get extensive training in advanced clinical techniques and practices, which are essential for working in areas of pain management, rehab as well as manual soft tissue therapies related to Sports and Athletics. Nutritional and Wellness paradigms will also be explored. Advanced Spa and hydrotherapy skills will also be presented which can help graduates surpass entry level knowledge and skills, making the student better prepared to become commercially viable for employment and entrepreneurship as a self-employed Licensed Massage Therapist. It is also the objective of the school to instill within each student a sincere and practical commitment to practice with utmost professional and ethical standards.

Upon successful completion of this program, and successful passing of the Massage and Bodywork Licensing Examination, the student will be able to apply

for licensure with the Texas Department of Licensing and Regulation (TDLR). Licensed graduates are able to work as an entry-level Massage Therapist in various environments such as massage clinics, wellness centers, spas, fitness centers, chiropractic clinics and can also strive to become self-employed as an independent therapist or a business owner.

**EXPECTED STUDENT OUTCOMES**

Western Technical College's expected student outcomes for the massage therapy graduate will be as follows. The graduate will:

1. Be prepared to practice in a variety of healthcare and wellness settings.
2. Be able to practice within the laws and regulations of the state of Texas.
3. Be eligible to take an approved state licensure exam.
4. Be able to apply knowledge and skills to assist in treatment of clients and patients independently and/or under the direct supervision of a health care provider or employer.
5. Be able to apply business practices required for daily operations of self-employment, contract or employer relationships.
6. Be prepared to communicate (oral, written and non-verbal communication skills) to clients, patients, colleagues, and other members of the healthcare community.
7. Adhere to professional, legal and ethical standards as set forth by the Texas Massage Therapy Act.
8. Be able to educate others (clients, patients, caregivers, staff and healthcare professionals) using effective client education and professional education methods.

9. Be able to participate in activities that address quality of service
10. Be able to practice in a safe manner to minimize risk to clients, clients, self and others.
11. Be able to deliver client and patient care that reflects respect for individual and cultural differences.
12. Be able to demonstrate a commitment to professional and personal growth and advocate the profession through involvement.
13. Be able to document client treatment in a timely and effective manner.
14. Be able to perform assessment techniques within the knowledge and limits of practice. Monitoring and modifying the plan of care.
15. Be able to communicate with primary care providers (where applicable) in a timely manner by reporting patient/client progress or concerns.
16. Be able to participate in client follow up, in person, by telephone, email and print.

### TIME CODES

The following time code is used on all courses to illustrate the amount of time students will spend in class or lab per course and the subsequent number of credit hours awarded.

44/48/4.0/3.0

Theory hours per course /

Lab hours per course /

Semester Credit Units (TWC & THECB)/

Semester Credit Hours (ACCSC)

**This program is not regulated or approved by the Texas Workforce Commission, Career School and Colleges. The Massage Therapy Program is approved and regulated by the Texas Department of Licensing and Regulation (TDLR).**

## PROGRAM OUTLINE: MASSAGE THERAPY

#	COURSE	TITLE	HRS.	THEORY/ LAB	ACCSC SCH
1	MT AP101	Anatomy & Physiology (50 Hrs. Anatomy & 25 Hrs. Physiology)	75	65/10	3.0
2	HH102	Health & Hygiene	20	10/10	0.5
3	TM103	Therapeutic Massage I	100	30/70	3.5
4	PATH104	Pathology	40	40/00	1.5
5	HYDRO105	Hydrotherapy	20	10/10	0.5
6	TM203	Therapeutic Massage II	100	30/70	3.5
7	KN106	Kinesiology	50	35/15	2.0
8	BE107	Business & Ethics	45	35/10	2.0
9	INT101	Internship	50	0/0/50	1.0
10	INT102	Advanced Internship	50	0/0/50	1.0
11	AP102	Advanced Anatomy & Physiology	60	50/10	2.5
12	ATCP202	Advanced Techniques & Clinical Practices	70	20/50	2.5
13	SPA205	Spa Techniques & Industry Practices	55	15/40	2.0
14	EP101	Employment Preparation	15	15/0	0.5
<b>Total Hours – Certificate of Completion in 750 Hour Advanced Massage Therapy</b>			<b>750</b>	<b>355/295/100</b>	<b>26.0</b>

### COURSE 1

#### MT AP 101

#### ANATOMY AND PHYSIOLOGY

#### 75 HRS (50HRS ANATOMY/25HRS PHYSIOLOGY)

#### 65/10/3.0

During the first several days of class, the students will receive a general school and program orientation, to include training on how to utilize the Learning Resource Center. This course will introduce the student to the Anatomy and the Physiology of the human body's internal and external systems. Beginning with cell and tissue development, the student will begin to understand how body systems relate and rely on one another. Anatomical and medical terminology will also be studied throughout the course to strengthen the student's ability identify body landmarks, positions, locations, and structures as well as communicate with other healthcare providers. This intensive course will help prepare students to piece together how massage therapy is interlaced with the fundamentals of anatomy and physiology.

Upon completion of this course, the student will be able to:

1. Explain the basic function of the body systems.
2. Locate the basic landmarks on bony prominences.
3. Locate superficial muscles.

### COURSE 2

#### HH 102

#### HEALTH AND HYGIENE

#### 20 HRS

#### 10/10/0.5

In Health and Hygiene, the student will learn safe and sanitary practices as applied in healthcare settings by using universal precautions. Topics include hand washing techniques, infections, sterilization, virus and bacteria. The student will be introduced to health and wellness strategies beneficial to Massage Therapists. CPR/BLS for Healthcare Providers and First Aid using the American Heart Association model are also part of this course. In addition, the student will explore the dynamics of human relationships critical to working with clients of diverse backgrounds.

Upon completion of this course, the student will be able to:

1. Use universal precautions as needed.

2. Explain the basics of contamination and cross-contamination.
3. Have completed a course in CPR and First Aid
4. List the different agents used to disinfect massage equipment.
5. Implement wellness and exercise models.
6. Utilize skills important to positive human interactions.

## **COURSE 3**

### **TM 103**

#### **THERAPEUTIC MASSAGE I**

**100 HRS**

**30/70/3.5**

In this course, the student will be introduced to the fundamental theory and practice of Swedish massage. Students will also learn to identify indications, contraindications, benefits and effects of massage along with identifying and applying therapeutic massage techniques such as effleurage (stroking), petrissage (kneading), tapotement (percussion), compression, vibration, friction, nerve stroke, and Swedish gymnastics. Students will gain perspectives of health care and explore the diverse population of clients that can be encountered including geriatric, pre-natal, pediatric and clients with special needs. Competence will be measured by hands on skills, professional conduct and communication along with knowledge in theory and practice of massage therapy. Proper draping technique, body mechanics, range of motion and therapeutic exercise will be carried throughout the program to develop good sound practices habits. This course requires the student's full participation in serving as a model and receiving therapeutic massage, as well as serving as a student therapist by applying and providing massage therapy techniques. Learning and working with the human anatomy requires all students to completely disrobe (with proper draping) while serving as models to allow for a real-world learning experience. Safe and proper draping is utilized at all times during hands on practical application.

Upon completion of this course, the student will be able to:

1. Apply proper draping techniques.
2. List and define the 6 major strokes (techniques) used in Swedish Massage.
3. Apply fundamental therapeutic massage techniques.
4. Perform range of motion exercises.
5. List the indications and contraindications for massage.
6. Identify diverse populations and variety of massage therapy throughout the world.

## **COURSE 4**

### **PATH 104**

#### **PATHOLOGY**

**40 HRS**

**40/0/1.5**

During this course, students will explore the causes and nature of disease and its effects on the human body. By gaining solid fundamental knowledge in this area, the student will be able to identify situations where massage therapy may be indicated and contraindicated. This is a critical skill all massage therapists must develop to ensure proper and safe applications of massage therapy protocols amongst diverse populations of clients.

Upon completion of this course, the student will be able to:

1. Identify and explain how pathological processes affect the practice of massage therapy.
2. Explain pathologies of the different systems of the anatomy.
3. Make informed decisions on massage therapy protocols.
4. Communicate with other health care providers.

## **COURSE 5**

### **HYDRO105**

#### **HYDROTHERAPY**

**20 HRS**

**10/10/0.5**

Hydrotherapy is the use of water in three forms; liquid, solid and vapor. The student will gain theoretical understanding as well as hands on skill by applying a variety of modalities such as ice massage, hot packs, and other water-based treatments and protocols. Students will also learn contraindications of hydrotherapy and different areas of its use. In addition, basic spa therapies will be explored.

Upon completion of this course the student will be able to:

1. Define cryotherapy and thermotherapy.
2. Understand the indication and contraindication of hot and cold applications.
3. Identify basic spa therapies.

**COURSE 6**  
**TM203**  
**THERAPUTIC MASSAGE II**  
**100 HRS**  
**30/70/3.5**

By continuing to build on Swedish massage skills, during this course the student will begin use a more superior level of massage therapy. By applying techniques, body mechanics and table mechanics used in therapeutic deep pressure/deep tissue applications, the student will gain a higher level of skill and knowledge. Students will also explore the fundamentals of pain patterns, deep tissue muscle constrictions and myofascial dysfunction. Students will also be introduced to chair massage. Competence will be measured by hands on skills, professional conduct and communication along with knowledge in theory and practice of massage therapy. This course requires the student's full participation in serving as a model and receiving therapeutic massage, as well as serving as a student therapist Learning and working with the human anatomy requires all students to completely disrobe (with proper draping) while serving as a model to allow for a real-world learning experience. Safe and proper draping is utilized at all times during hands on practical application.

Upon completion of this course the student will be able to:

1. Identify and use proper body mechanics for deep pressure massage.
2. Use elevated massage skills for a more therapeutic approach.
3. Explain the fundamentals of pain patterns and myofascial dysfunction.
4. Perform basic chair massage techniques and explain settings where chair massage is utilized.

**COURSE 7**  
**KN106**  
**KINESIOLOGY**  
**50 HRS**  
**35/15/2.0**

Kinesiology is the study of the mechanics of motion with respect to human anatomy. During this course the student will take a closer look at joints and muscles, along with examining how muscles contract and levers function. The student will also be introduced to musculoskeletal assessment, the role of the nervous system, posture, and the gait cycle. Muscle contraction, movement, and correct terminology are at the core of this course.

Upon completing this course, the student will be able to:

1. Describe physiology and category of joints.
2. List the joints of the axial body.
3. Describe structure and function of skeletal muscle tissue.
4. Explain the different contractions of muscles.
5. List and define the major roles of muscles.
6. Describe movement using anatomical terms.

**COURSE 8**  
**BE 107**  
**BUSINESS AND ETHICS**  
**45 HRS**  
**35/10/2.0**

In this course, the fundamentals of starting and operating a massage therapy business will be explored. The student will also gain understanding of the laws that govern the practice of massage therapy as a profession. In addition, a fundamental business plan will be developed by each student. Marketing strategies and business ethics are also discussed. In addition, ethical dilemmas will be explored to help the student better develop sound and ethical professional practices. Because Texas Department of State Health Services requires successful completion of a Jurisprudence exam for licensure as a Massage Therapist, Title 25, Texas Administrative Code, Chapter 140 Subchapter H, will be thoroughly examined. This is the administrative section that regulates the Massage Therapy profession.

Upon completing this course, the student will be able to:

1. Develop a basic business plan.
2. Identify fundamentals of effective business startup, marketing, and massage business management.
3. Define ethics and professionalism as they relate to the field.
4. Explain the administrative rules that regulate massage therapy in Texas and other states requiring licenses.

**COURSE 9**  
**INT 101**  
**CLINICAL INTERNSHIP**  
**50 HRS**  
**0/0/50/1.0**

Internship will place the student in a real world (on campus) clinical experience designed to implement and further develop all of the technical and academic skills learned thus far. Each student will be required to complete a total of forty (40) hands on hours and ten (10) hours of office practices. Hands on skills involve providing therapeutic massage services to the general public and diverse clients in a supervised environment. Office duties include, but are not limited to scheduling and confirming appointments, answering and returning phone calls, maintaining lab areas, lab equipment and linens/towels clean, sanitized and stocked. Because this course requires the student to provide massage services to the general public, exceptional levels of attendance, safety, professionalism and technical skills are required to successfully complete this course. An instructor(s) is available on campus at all times during clinical internship.

Upon completion of this course the student will be able to:

1. Confidently provide a variety of therapeutic massage services.
2. Work with a diverse population of clients.
3. Better develop hands on and office/business skills needed to successfully practice massage therapy competitively and effectively.

**COURSE 10**  
**INT102**  
**ADVANCED INTERNSHIP**  
**50 HRS**  
**0/0/50/1.0**

Advanced Internship is a continuation of INT101, which will help to further develop the student's skills in a real-world setting (on campus). With an additional forty (40) hours of hands on experience, as well as an additional ten (10) hours of office practices, students develop a much more engaging experience in working with a diverse client base. This course helps students further understand and apply all previously addressed topics and skills. Office duties include, but are not limited to scheduling and confirming appointments, answering and returning phone calls, maintaining lab areas, lab equipment and linens/towels clean, sanitized and stocked. Because this course requires the student to provide massage services to the general public, exceptional levels of attendance, safety, professionalism and technical skills are required to successfully complete this course. An instructor(s) is available on campus at all times during clinical internship.

Upon completion of this course the student will be able to:

1. Confidently provide a variety of therapeutic massage services.
2. Work with a diverse population of clients.
3. Better develop hands on and office/business skills needed to successfully practice massage therapy competitively and effectively.
4. Utilize their experience to elevate their knowledge and skills.

**COURSE 11**  
**AP102**  
**ADV ANATOMY AND PHYSIOLOGY**  
**60 HRS**  
**50/10/2.5**

This course (composed of 40 hours of anatomy and 20 hours of physiology) will further explore human anatomy and physiology with emphasis on the central and peripheral nervous systems, and its relationship to internal organs and the musculoskeletal system. This course prepares students to safely and accurately apply advanced therapeutic massage techniques used in pain management. Students will closely examine innervations which encompass this complex body system. Students will also reexamine basic anatomy and physiology in preparation for the MBLEX (Massage Therapy Licensing Examination).

Upon completing this course, the student will be able to:

1. Identify innervations and responses that correspond to the internal organs of the human body.
2. Identify innervations and responses that correspond to the musculoskeletal systems of the human body.
3. Examine the relationship of neuromuscular structures and trigger point therapy.

**COURSE 12**  
**ATCP 202**  
**ADV TECHNIQUES & CLINICAL PRACTICES**  
**70 HRS**  
**20/50/2.5**

This course will focus on advanced clinical massage techniques and practices as they are applied in a professional clinical/therapeutic setting such as pain management massage clinics, chiropractic clinics and other medical settings. By identifying and implementing muscle assessment techniques and targeting trigger points and myofascial pain, the student will examine techniques and protocols related to common areas of pain, including, but not limited to, low back, neck and shoulder pain, tension headaches, upper and lower extremities. Basic sports massage will also be explored along with the very basic foundation of insurance, treatment codes and protocols related to soft tissue therapies. This course requires the student's full participation in serving as a model and receiving therapeutic massage, as well as serving as a student therapist by applying and providing massage therapy techniques. Learning and working with the human anatomy requires all students to completely disrobe (with proper draping) while serving as a model to allow for a "real world" learning experience. Safe and proper draping is utilized at all times during hands on practical application.

Upon completing this course, the student will be able to:

1. Identify myofascial patterns adversely affecting proper muscle function.
2. Use soft tissue therapies to address and reduce chronic pain syndrome caused by myofascial dysfunction.
3. Develop and implement massage therapy session plans to address myofascial dysfunction.
4. Implement clinical practices within the basic administrative aspect of therapeutic settings.

**COURSE 13**  
**SPA205**  
**SPA TECHNIQUES AND INDUSTRY PRACTICES**  
**55 HRS**  
**15/40/2.0**

This course will introduce the student to massage therapy and hydrotherapy treatments as they are used in a professional spa setting. Students will explore and develop skills in spa modalities and techniques along with proper and safe applications. The fundamentals of aroma therapy along with proper and safe applications will be also be explored. The use of steam, body-wraps, massage therapy facials and variations of these and other techniques will be the core focus of this course. Students will identify different types of spa and resort settings where spa techniques are applicable. In addition, students will be introduced to the business and marketing norms of this specialized field. This course requires the student's full participation in serving as a model and receiving therapeutic massage, as well as serving as a student therapist by applying and providing massage therapy techniques. Learning and working with the human anatomy requires all students to completely disrobe (with proper draping) while serving as a model to allow for a real-world learning experience. Safe and proper draping is utilized at all times during hands on practical application.

Upon completion of this course the student will be able to:

1. Safely perform various spa treatments.
2. Identify contraindications.
3. Safely demonstrate and apply the fundamentals of stone massage.
4. Develop an awareness of various types of business practices and employment options within the spa industry.

**COURSE 14**  
**EP 101**  
**EMPLOYMENT PREPARATION**  
**15 HRS**  
**15/0/0.5**

This course is designed to prepare students for the job seeking process. Students will be required to demonstrate personal and job-related behavioral skills both orally and in written format. Resume' completion and a review of the proper completion of the employment application will be covered. Appropriate attire, persuasive interviewing techniques and mannerisms will be covered. Students will be required to undergo a mock interview with an employer from their field of study. This interview may be videotaped and later critiqued with the student. Students must receive a passing grade in EP 101 in order to qualify for graduation.

Upon completion of this course the student will be able to:

1. Appropriately complete an application for employment.
2. Create an effective resume'.
3. Interview in a professional manner.
4. Demonstrate their knowledge in responding to interview questions appropriately.
5. Conduct a self-directed job search.
6. Understand employer expectations.

## MEDICAL BILLING AND CODING

Available at 9451 Diana Drive Campus



Individuals portrayed in photos are actual students, graduates or employees of Western Tech.

### CAREER OPPORTUNITIES IN MEDICAL BILLING & CODING

Medical records and health information technicians held about 188,600 jobs in 2014. Medical records and health information technicians, commonly referred to as *health information technicians*, organize and manage health information data by ensuring that it maintains its quality, accuracy, accessibility, and security in both paper files and electronic systems. They use various classification systems to code and categorize patient information for insurance reimbursement purposes, for databases and registries, and to maintain patients' medical and treatment histories. Employment of health information technicians is projected to grow 15 percent from 2014 to 2024, much faster than the average for all occupations. (Source: D.O.L. Occupational Outlook Handbook, 2016-2017 Edition). Medical billers and coders will typically obtain, record and update personal and financial information, schedule appointments, and verification and coordination of insurance. Obtain revenue by recording and collecting patient charges, acquire pre-authorization for procedures.

Labor Market Information (2012 thru 2022 Projections)

#### Texas Labor Market Information

Texas Employment 2012:	16,460
Projected Texas Employment 2022:	21,330
Absolute Change 2012-2022:	4,870
Percent Change 2012-2022:	29.60%
Average Hourly Wage 2014:	\$18.06
Average Openings per year due to Replacement:	435
Average Openings per year due to Growth:	485

#### National Labor Market Information

National Employment 2012:	186,300
Projected National Employment 2022:	227,500
Absolute Change 2012-2022:	41,100
Percent Change 2012-2022:	22.10%
Average Hourly Wage 2014:	\$18.68
Average Openings per year due to Replacement:	Not Available
Average Openings per year due to Growth:	Not Available

Source: The Labor Market & Career Information Department (LMCI) of the Texas Workforce Commission  
[www.lmci.state.tx.us](http://www.lmci.state.tx.us)



## **ENTRANCE REQUIREMENTS FOR APPLICANTS PURSUING THE MEDICAL BILLING & CODING PROGRAM**

### **Hybrid Program/Courses**

Students who enroll in the Medical Billing and Coding program will receive training through a hybrid delivery system, that is, a portion of their training is provided in a combination of classes being offered both on-ground and online. Specifically, this program will provide 50% of the training and education on-ground and 50% online.

Hybrid courses are web-based and delivered over the Internet using Western Tech's Learning Management System (Canvas). The system provides both synchronous and asynchronous tools used for on-line delivery. The on-line content of the course is covered by using a variety of on-line educational activities such as discussion boards, chat sessions, conference sessions, case studies, lab simulations, and quizzes. In a hybrid program, the face to face schedule is set on specific dates and times of the week, while the on-line portion of the class is organized for the student to have the flexibility to complete the on-line classroom activities based on their personal/work schedules.

Regardless of the mode of delivery, students entering this program can expect the same level of support as on-ground students to include tutoring services, technical support, employment preparation and assistance with job leads, and access to the school's library.

**Participation in online classes is vital to successful program completion. Students are provided with a computer that meets the requirements of the hybrid program. Students must have Internet access from somewhere outside the school in order to fulfill course requirements and succeed in their classes. In addition, students must have a minimum level of comfort with technology, as they may find themselves needing to access course work online for as much as half of the time the class is in session.**

For that reason, all prospective students considering enrollment in any of the hybrid programs are required to take a short "Suitability for Distance Education" survey before they enroll in school. The survey is designed to identify the prospective student's level of proficiency in the use of technology. Students can expect support in the form of training tailored to their identified needs so that they can handle the demands of the Learning Management System that houses much of their work.

### **Immunization Requirements for MBC students ONLY**

MB&C will only require students to have a TB (Tuberculosis) test administered before Internship.

### **Typing Test**

Applicants entering into the school's Medical Billing & Coding program must exhibit a typing proficiency of 25 words per minute and 98% accuracy.

## **POLICIES & STANDARDS SPECIFIC TO THE MEDICAL BILLING & CODING PROGRAM**

### **Health and Hygiene**

Medical Billing and Coding students are required, for health and hygiene reasons, to have clean, trimmed fingernails, active length (no longer than ¼").

### **TECHNICAL STANDARDS AND ESSENTIAL FUNCTIONS**

Western Tech's Medical Billing & Coding program is a hybrid program. It has established technical standards and essential functions for the program as more fully listed below. The ability to meet these standards and essential functions, with or without reasonable accommodation, is required in order to complete the program satisfactorily. Please review the following technical standards and essential functions carefully.

1. The ability to understand course materials and maintain a certain grade/performance level that meets the set academic requirements.
2. The ability to maintain a professional demeanor at all times and interact professionally with fellow students, internship site employees and clientele, administration and faculty.
3. The ability to adhere to a professional dress code acceptable to the profession and as set by Western Tech.
4. The ability to listen, understand, and communicate ideas presented through spoken words and sentences.
5. Satisfactory visual acuity for reading and documenting patient charts and creating patient accounts.
6. The ability to tolerate sitting and/or standing for extended periods of time without a break.
7. Students shall use confidentiality standards in accordance to professional health care environments about other students and/or internship patients.
8. Students shall display professional demeanor, language, student to student/instructor/ or Western Tech personal interaction and conduct that fosters a safe, productive and ethical learning environment for themselves and other students enrolled in the program other employees of Western Tech.
9. Students shall not violate professional, ethical and safety standards.

10. The ability to utilize computers and perform basic computer functions with programs such as Word, Outlook, and Excel.
11. Must be able to utilize E-Books.

Western Tech does not discriminate in admission or access to programs on the basis of any characteristic protected by law, including disability. Persons with disabilities are eligible for admission, as long as, they can carry out classroom, laboratory and internship assignments; pass written, oral and practical examinations; and meet all of the requirements of the program and generally accepted requirements of the profession, with or without reasonable accommodation. Western Tech will make reasonable accommodations for disabilities. Applicants and students who require accommodation should contact the Campus President and submit a written request for accommodation.

## **ERTIFICATE OF COMPLETION IN MEDICAL BILLING AND CODING COURSES 1-11**

**1060 CLOCK HOURS**

**44.5 SEMESTER CREDIT UNITS (TWC & THECB)**

**39.0 SEMESTER CREDIT HOURS (ACCSC)**

### **EDUCATIONAL OBJECTIVES**

The Medical Billing & Coding Program is designed to prepare the individual for entry-level employment as a records coder, claims examiner, medical biller or related occupation in private health care practices, clinics, hospitals, government agencies, skilled nursing facilities, insurance companies, consulting firms and other health care facilities.

Our Medical Billing & Coding Program teaches students how to evaluate coding and billing practices and provides tools for developing compliance programs that will help minimize the risk of investigation.

The program balances knowledge of medical science, technical skills and coding experience with assessment evaluation by professional coding specialists who care about your success. Our practical approach takes students through a careful step-by-step study of what medical coders and billers need to get the job done right.

### **CERTIFICATION AND EXAMINATION**

The student will sit for the following certification examinations through the National Healthcare Association (NHA)

- NHA – CEHRS – Certified Electronic Health Records Specialist

The student will be able to sit for either the American Academy of Professional Coders (AAPC), American Health Information Management Association (AHIMA).

- AAPC – CPC-A – Professional Coder Apprentice
- AHIMA – CCS-P – Certified Coding Specialist Physician

### **TIME CODES**

The following time code is used on all courses to illustrate the amount of time students will spend in class or lab per course and the subsequent number of credit hours awarded.

44/48/4.0/3.0

Theory hours per course /

Lab hours per course /

Semester Credit Units (TWC & THECB)/

Semester Credit Hours (ACCSC)

## PROGRAM OUTLINE: MEDICAL BILLING AND CODING

#	COURSE	TITLE	HRS.	THEORY/ LAB	PERCENTAGE ON CAMPUS/ONLINE	TWC/THC/B SCU	ACCSC SCH
1	MTAP 100	Medical Terminology / Anatomy & Physiology	100	62/38	50%/50%	5.0	4.0
2	MOA 100	Medical Office Administration	100	55/45	50%/50%	5.0	4.0
3	ICPT 100	Introduction to Coding Principles & Theory	100	54/46	50%/50%	5.0	4.0
4	HC 100	Health Claims	100	65/35	50%/50%	5.0	4.0
5	HC 200	Health Claims	100	35/65	50%/50%	4.0	4.0
6	ACPT 200	Advanced Coding Principles & Theory	100	20/80	50%/50%	3.5	3.5
7	DC 100	Diagnostic Coding	100	63/37	50%/50%	5.0	4.0
8	AACPT 300	Advanced Coding Principles & Theory	100	45/55	50%/50%	4.5	4.0
9	EP101	Employment Preparation	15	15/0	50%/50%	1.0	0.5
10	MRC 100	Medical Record Coder	85	15/70	50%/50%	3.0	3.0
11	IN108	Internship	160	0/0/160	00/00	3.5	4.0
<b>Total Hours – Certificate of Completion in Medical Billing &amp; Coding</b>			<b>1060</b>	<b>429/471/ 160</b>		<b>44.5</b>	<b>39.0</b>

### **COURSE 1 MEDICAL TERMINOLOGY / ANATOMY & PHYSIOLOGY 62/38/5.0/4.0**

During the first several days of class, the students will receive a general school and program orientation, to include training on how to utilize the Learning Resource Center. This course will acquaint the students with the meaning and pronunciation of medical terms, including prefixes, root words, and suffixes. The students learn provider and medical abbreviations as well as disease, physiology and treatment methodology. The students will also learn the names, pronunciation and locations of all body systems and their principal parts.

The major instructional units will stress the following body systems: cardiovascular, integumentary, urinary, musculoskeletal, respiratory, nervous, digestive, reproductive, endocrine, eyes, ears, nose and throat.

Upon completion of this course, the student will be able to:

1. Define, interpret, and use the medical terminology in a variety of allied health fields.
2. Develop a critical understanding of the structure of the Digestive, Urinary, Nervous, Cardiovascular, Blood, Respiratory, Lymphatic, Musculoskeletal, Endocrine, Female and Male organs as a prerequisite to comprehending its function.

3. Define and know the possible causes of disease.

### **COURSE 2 MEDICAL OFFICE ADMINISTRATION 55/45/5.0/4.0**

The course is designed to meet the needs of the beginning student by introducing him/her to the basic principles of insurance terminology, health insurance and medical billing. In addition, the student will continue to learn A&P and begin medical coding.

Students will be taught fundamentals of Medical Billing & Coding to provide them with the importance of written communication skills, accounts receivable, management, supportive documentation, and customer service. Introduction into the use of different types of medical billing forms will be covered. Students will also learn cost containment programs, traditional insurance carriers and private plans to include managed care, and fraud guidelines.

Students will work with Word 2010 for basic business letters, editing documents, and applying font styles, sizes and emphasis on text in a document.

A requirement to create a proper APA formatted research paper will be covered during these projects. The students will also start grammar exercises to improve the ability to correspond in the medical business world.

Upon completion of this course, the student will be able to:

1. Research and apply knowledge of insurance rules and regulations for major insurance programs in the local or regional area.
2. Claims submission using CMS-1500 for private insurance plans.
3. Understand and comply with managed care plan coverage and the benefits and eligibility requirements of each.

### **COURSE 3**

#### **INTRODUCTION TO CODING PRINCIPLES & THEORY**

#### **54/46/5.0/4.0**

The major theme of this course is the theoretical aspect of medical record coding. Introduction to ICD-10-CM (International Classification of Diseases, 10<sup>th</sup> Revision, Clinical Modification), basic coding rules and conventions, sequencing codes and other coding principles. Introduction to CPT (Current Procedural Terminology) Coding System Structure of the two levels of CPT, general guidelines for using CPT and HCPCS (Health Care Procedural Coding System), basic steps to assign CPT and HCPCS and understanding the sequencing and linking requirements.

During this course the students will become familiar with the terminology in the procedure and diagnostic coding systems to use them efficiently and provide accurate descriptions of services rendered and maximize payment from insurance companies. The practical application is designed to provide the student the practical experience necessary to understand and code CPT.

Students will continue their education in basic principles of insurance as well as in Anatomy and Physiology during this phase.

Upon completion of this course, the student will be able to:

1. Apply coding conventions when assigning ICD-10-CM volume 1 and 2
2. Apply coding conventions when assigning Medicare, Medicaid, Military Carriers, Workers Comp and Disability Insurance.
3. Assign CPT Level I Codes and Modifiers
4. Assign Level II, National Codes and Modifiers.

### **COURSE 4**

#### **HEALTH CLAIMS**

#### **65/35/5.0/4.0**

This course is designed to provide the student with the understanding and practical skills necessary to abstract from the medical record relevant information for completing the CMS-1500 claim form. Students will recognize general guidelines for completing forms for different carriers to include Medicare, Medicaid, and Workers' Compensation for physician services, DXL, surgery, anesthesia and coordination of benefits. Students will have the opportunity to simulate the entire claims examination process in a group and individual setting. This course will provide the student with the skills needed to understand and process the insurance claims for physician services, x-ray and laboratory services. This course also provides the student with the skills necessary to understand COB (Coordination of Benefits) in organizing the difference between primary

and secondary payers, organize the order of benefit rules and rights. The student will also learn to determine coordination of benefits as they apply to managed care, Preferred Provider Organizations, and Health Maintenance Organizations.

This course will teach the student the knowledge necessary to optimize payment in a timely and cost-efficient manner. The students will also be taught the difference between clean, pending, rejected, incomplete and invalid claims and recognize and describe the reasons why claims are rejected. They will also record proper information in financial records or on the patient's ledger card after claim submission. This course will also provide the student with the skills necessary to understand and complete the UB-04 (Uniformed Bill Inpatient and Outpatient) claim form and to know when it may or may not be used to minimize their chances of rejection by insurance companies.

This course will give the students the opportunity to understand medical reports and how they relate to billing forms. Also, they will learn to recognize triage, operative, diagnostic and medical history report.

Students will continue their education in Anatomy and Physiology during this phase.

Upon completion of this course, the student will be able to:

1. Translate medical reports and their relation to billing forms.
2. Abstract from the patient record relevant information for completing the CMS-1500 claim form.
3. Recognize and apply proper guidelines for completing the CMS-1500 forms.
4. Edit and complete insurance claims in both hospital inpatient and outpatient settings to minimize the chance of rejection by insurance carriers.
5. Comply with National Correct Coding Initiative.

### **COURSE 5**

#### **HEALTH CLAIMS**

#### **35/65/4.0/4.0**

Students will have the opportunity to manipulate industry related practice management software familiarize themselves with today's computerized work environment which must be completed during the course, through a structured self-paced program.

Students will be training for Electronic Health Records. Students will also continue their education in Anatomy and Physiology during this phase.

Upon completion of this course, the student will be able to:

1. Possess a working knowledge of the computerized electronic health record.
2. Train on Electronic Health Records
3. Process and Post payments
4. Eligible to sit for the Certified Electronic Health Records Specialist exam.

**COURSE 6  
ADVANCED CODING PRINCIPLES &  
THEORY  
20/80/3.5/3.5**

Students will learn the importance of capturing all aspects of Inpatient and Outpatient billing, which will give the students an understanding of procedures performed, services rendered, additional supplies, drugs, etc. that may be used in the medical practice.

Students will continue their education in Anatomy and Physiology during this phase.

Upon completion of this course, the student will be able to:

1. The student will understand the procedures and services offered in an Inpatient and Outpatient setting.
2. The student will be able to review and code from the operative, laboratory, and radiology reports.
3. The student will understand how to abstract relevant information from the physician's progress notes in a medical chart.
4. The student will be applying all coding guidelines and regulations set forth by CMS.

**COURSE 7  
DIAGNOSTIC CODING  
63/37/5.0/4.0**

In this course he/she will also have the practical application of diagnostic coding from various medical records. The student will apply advanced anatomy and physiology with pathophysiology as it applies to the appropriate diagnostic codes.

Students will continue their education in Anatomy and Physiology during this phase.

Upon completion of this course, the student will be able to:

1. The student will understand the procedures and services offered with Ambulance and DME.
2. Interpret medical documentation to extract all appropriate diagnostic code.

**COURSE 8  
ADVANCED CODING PRINCIPLES &  
THEORY  
45/55/4.5/4.0**

In this course the student will learn the coding of more complex diagnostic and procedural statements. Clinical information regarding specific disease processes will be covered, as well as diagnostic and procedural terminology which builds upon previous knowledge of the basic principles and conventions of the ICD-10-CM, CPT and HCPCS.

Students will understand how to use the medical record to provide necessary information essential to the assignment of accurate codes. They will recognize when multiple coding is required, when it is not recommended, and when it should not be used.

At the conclusion of this course, the student will understand the theory, function, and application of multiple coding and sequencing of codes.

Upon completion of this course, the student will be able to:

1. Apply instructional notations and conventions of the ICD-10-CM (two volumes), CPT and HCPCS classification systems, ability to follow the detail guidelines related to their use in assigning single and sequence multiple diagnosis and procedure codes for appropriate reimbursement and data collection.
2. Assign ICD-10-CM codes to the highest level of specificity.
3. Review the medical record and abstract information to identify diseases and procedures.

**COURSE 9  
EMPLOYMENT PREPARATION  
15/0/1.0/0.5**

This course is designed to prepare students for the job-seeking process. Students will be required to demonstrate personal and job-related behavioral skills both orally and in written format. Résumé construction will be covered. Appropriate dress, persuasive interviewing techniques and mannerisms will be covered. Students will be required to undergo a "mock" interview with an employer from their field of study. Students must receive a passing grade in EP 101 to qualify for graduation. A total of 15 clock hours of instruction is committed to EP 101 and can be delivered at any time during the student's training. The course may include employers/alumni visiting the school and addressing students about relevant issues in their chosen fields of study.

Upon completion of this course, the student will be able to:

1. Appropriately complete an application for employment.
2. Create an effective résumé.
3. Interview in a professional manner.
4. Demonstrate his/her knowledge in responding to interview questions appropriately.
5. Conduct a self-directed job search.
6. Understand employer expectations.

**COURSE 10  
MEDICAL RECORD CODER  
15/70/3.0/3.0**

This course will provide the student with the understanding and practical skills necessary to process claims.

Practical work experience will consist of coding and billing compliance for Medical Practices. Review current practices with respect to the ICD-10-CM diagnosis and CPT procedure coding and modifier knowledge for the generation of medical visit APC's. This will include review of the charge capture process within the organizations.

Students will explore the Medicare Rebates PQRS (Physician Quality Reporting System), the measures, and how to apply and what information is needed.

In addition, the student will learn detailed instructions in test taking strategies, as well as timed practical experience needed to sit for any billing and coding national certification exam. Students will also learn how to correctly abstract claims, which is finding errors on claims that have been processed and denied.

Students will learn how to effectively audit medical charts.

**COURSE 11**  
**IN108**  
**INTERNSHIP PROGRAM**  
**0/0/160/3.5/4.0**

Students must satisfactorily complete all 9 courses and EP101 before being placed in an internship participating site. Students must also provide proof of negative current Tuberculosis test (less than 1 year). The internship participation enables the student to apply the knowledge and skills learned throughout the theoretical and clinical setting in the work environment. The student, with no financial remuneration, is placed in a

doctor's office, clinic or hospital and is closely supervised to ensure that the school's objectives are being met. Internship Program is 160 hours in length.

Furthermore, the student will sit for the following certification examinations through the National Healthcare Association (NHA). The student will also be able to sit for the American Academy of Professional Coders (AAPC) CPC-A – Professional Coder Apprentice and/or the American Health Information Management Association (AHIMA) CCS-P – Certified Coding Specialist Physician.

For more information regarding the consequences of outdated immunizations visit:  
[www.dshs.state.tx.us/immunize/](http://www.dshs.state.tx.us/immunize/)

# MEDICAL CLINICAL ASSISTANT

Available at 9451 Diana Drive Campus & 9624 Plaza Circle Campus



Individuals portrayed in photos are actual students, graduates or employees of Western Tech.

## CAREER OPPORTUNITIES IN MEDICAL/ CLINICAL ASSISTANT

Employment of medical assistants is projected to grow 29 percent from 2016 to 2026, much faster than the average for all occupations. The growth of the aging baby-boom population will continue to increase demand for preventive medical services, which are often provided by physicians. As a result, physicians will hire more assistants to perform routine administrative and clinical duties, allowing the physicians to see more patients. Employment of medical assistants held about 634,400 in 2016. By 2026 projected employment is about 818,400.

Medical assistants typically do the following: Record patient history and personal information, Measure vital signs, such as blood pressure, Help physicians with patient examinations, Give patients injections or medications as directed by physicians and as permitted by state law, Schedule patient appointments, Prepare blood samples for laboratory tests, Enter patient information into medical records. Medical assistants take and record patients' personal information. They must be able to keep that information confidential and discuss it only with other medical personnel who are involved in treating the patient. Electronic health records (EHRs) are changing some medical assistants' jobs. More and more physicians are adopting EHRs, moving all their patient information from paper to electronic records. Assistants need to learn the EHR software that their office uses. Medical assistants should not be confused with physician assistants, who examine, diagnose, and treat patients under a physician's supervision.

In larger practices or hospitals, medical assistants may specialize in either administrative or clinical work.

(Source: D.O.L. Occupational Outlook Handbook, last modified April 2019).

### Texas Labor Market Information

Texas Employment 2012: 51,560  
Projected Texas Employment 2022: 67,960  
Absolute Change 2012-2022: 16,400  
Percent Change 2012-2022: 31.80%  
Average Hourly Wage 2014: \$13.53  
Average Openings per year due to Replacement:

985

Average Openings per year due to Growth:  
1,640

Source: The Labor Market & Career Information Department (LMCI) of the Texas Workforce Commission  
[www.lmci.state.tx.us](http://www.lmci.state.tx.us)

### Labor Market Information (2016 thru 2026 Projections)

#### National Labor Market Information

National Employment 2016: 634,400  
Projected National Employment 2026: 818,000  
Absolute Change 2016-2026: 183,900  
Percent Change 2016-2026: 29.00%  
Average Hourly Wage 2018: \$16.16  
Average Openings per year due to Replacement:

Not Available

Average Openings per year due to Growth:  
Not Available

## ENTRANCE REQUIREMENTS FOR APPLICANTS PURSUING THE MEDICAL/CLINICAL ASSISTANT

### Hybrid Program/Courses

Students who enroll in the Medical / Clinical Assistant program will receive training through a hybrid delivery system, that is, a portion of their training is provided in a combination of classes being offered both on-ground and online. Specifically, this program will provide 80% of the training and education on-ground and 20% online.

Hybrid courses are web-based and delivered over the Internet using Western Tech's Learning Management System (Canvas). The system provides both synchronous and asynchronous tools used for on-line delivery. The on-line content of the course is covered by using a variety of on-line educational activities such as discussion boards, chat sessions, conference sessions, case studies, lab simulations, and quizzes. In a hybrid program, the face to face schedule is set on specific dates and times of the week, while the on-line portion of the class is organized for the student to have the flexibility to complete the on-line classroom activities based on their personal/work schedules.

Regardless of the mode of delivery, students entering this program can expect the same level of support as on-ground students to include tutoring services, technical support, employment preparation and assistance with job leads, and access to the school's library.

**Participation in online classes is vital to successful program completion. Students are provided with a computer that meets the requirements of the hybrid program. Students must have Internet access from somewhere outside the school in order to fulfill course requirements and succeed in their classes. In addition, students must have a minimum level of comfort with technology, as they may find themselves needing to access course work online for as much as half of the time the class is in session.**

For that reason, all prospective students considering enrollment in any of the hybrid programs are required to take a short "Suitability for Distance Education" survey before they enroll in school. The survey is designed to identify the prospective student's level of proficiency in the use of technology. Students can expect support in the form of training tailored to their identified needs so that they can handle the demands of the Learning Management System that houses much of their work.

### Transfer Credit-

Medical Clinical Assistant applicants who wish to have their previous education reviewed for transfer credits must provide a check off list or master competency check off list of all their psychomotor and affective competencies, if not applicable applicants must provide a course descriptions from their school outlining their coursework, if not applicable the applicant must perform all psychomotor and affective competencies they want to receive transfer credits for, prior to entering into the program.

### Immunization

In accordance with state law, the following immunizations are required for all students enrolled in health-related courses which will involve them in direct patient contact in medical care facilities or that will require them to come into contact with human biological fluids or tissue.

- **Measles:** proof of two doses of measles vaccine administered on or after the first birthday and at least 30 days apart or proof of immunity.
- **Mumps:** proof of one dose of mumps vaccine administered on or after the first birthday or proof of immunity.
- **Rubella:** proof of one dose administered on or after the first birthday or proof of immunity.
- **Tetanus/diphtheria:** proof of one "booster" dose of tetanus/diphtheria (within 10 years).
- **Hepatitis B virus (HBV):** proof of serologic immunity to HBV or certification of immunization with a complete series of Hepatitis B vaccine. Students will be required to present a letter or other suitable written certification.
- Proof of a current negative TB result (less than one year). Tuberculosis screening is required annually. If an individual tested positive for TB a chest X-ray or TB assessment from a healthcare provider is required.

**Note:** Pregnant females may be required to provide a physician note stating they may receive immunizations and TB testing.

For more information regarding the consequences of outdated immunizations visit:

[www.dshs.state.tx.us/immunize/](http://www.dshs.state.tx.us/immunize/)

### Typing Test

Applicants requesting entry into the Medical / Clinical Assistant program must exhibit a typing proficiency of 35 words per minute (WPM) and 98% accuracy. Applicants, who achieve less than 35 WPM and 98% accuracy, but not less than 20 WPM and 95% accuracy, are allowed entrance into the MCA program provided they are able to elevate their typing speed to 35 WPM and 98% accuracy before they enter internship. Applicants must adhere to the typing remediation requirements of the program.



## **POLICIES & STANDARDS SPECIFIC TO THE MEDICAL / CLINICAL ASSISTANT**

### **Code of Conduct**

It is imperative that when students are working with syringes and/or needle sticks, they dispose of them correctly. Students found to discard syringes or other sharp items in an inappropriate manner and/or inappropriate location such as bathroom trash bins, or any other undesignated bin, will be subject to disciplinary action by Western Tech up to and including suspension and/or expulsion from the program. Students who use syringes for health conditions such as insulin injections are subject to the same disposal requirements.

### **Health and Hygiene**

Medical / Clinical Assistant students are required, for health and hygiene reasons, to have clean, trimmed fingernails, active length (no longer than  $\frac{1}{4}$ " ). Acrylic nails are NOT allowed in the Medical/ Clinical Assistant program.

## **TECHNICAL STANDARDS AND ESSENTIAL FUNCTIONS**

Western Tech's Medical/Clinical Assistant program is a hybrid program with the exception of the following two courses: Employment Preparation, and Internship. Western Tech's Medical / Clinical Assistant program has established technical standards and essential functions for the program as more fully listed below. The ability to meet these standards and essential functions, with or without reasonable accommodation, is required in order to complete the program satisfactorily. Please review the following technical standards and essential functions carefully.

1. The ability to understand course materials and maintain a certain grade/performance level that meets the set academic requirements.
2. The ability to listen, understand and communicate ideas presented through spoken words and sentences.
3. Students shall practice confidentiality standards in accordance to professional health care environment and the ability to maintain a professional demeanor at all times while interacting with fellow students, internship site employees and clientele, administration and faculty.
4. Students shall display professional demeanor, language, and conduct that fosters a safe, productive, and ethical learning environment for them and other students enrolled in the program.
5. The ability to transfer patients safely from a variety of surfaces, i.e.: wheelchairs, beds, etc. and to lift equipment needed for patient care.
6. Sufficient manual dexterity to perform fine motor tasks such as; palpation, measurements, and steadiness, to grasp, manipulate, or assemble needle syringe units, administer safe injections and perform blood draws.
7. Satisfactory visual and hearing acuity for reading, listening, and documenting in patient charts and administering treatment.
8. The ability to tolerate sitting and/or standing for extended periods of time without a break.
9. The ability to provide and receive needle sticks, to include injections, and blood draws without any restriction.
10. The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions.
11. Sufficient finger dexterity and steadiness to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects.
12. Sufficient manual dexterity, strength, and steadiness to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.
13. The ability to use your abdominal and lower back muscles to support and balance part of your body repeatedly or continuously over time without 'giving out' or fatiguing. Work may be done up to 6 feet off the ground.
14. The ability to lift up to 50 lbs.
15. The ability to utilize computers and perform basic computer functions with programs such as Word, Outlook, and Excel.
16. Must be able to utilize E-Books.

Western Tech does not discriminate in admission or access to programs on the basis of any characteristic protected by law, including disability. Persons with disabilities are eligible for admission, as long as, they can carry out classroom, laboratory and internship assignments; pass written, oral and practical examinations; and meet all of the requirements of the program and generally accepted requirements of the profession, with or without reasonable accommodation. Western Tech will make reasonable accommodations for disabilities. Applicants and students who require accommodation should contact the Campus President and submit a written request for accommodation.

## **MISSION STATEMENT OF THE MEDICAL / CLINICAL ASSISTING**

The mission of Medical /Clinical Assistant faculty and staff at Western Technical College is to prepare competent entry level medical assistants with the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains needed in the medical community.

The Medical / Clinical Assisting at Western Technical College has a site visit scheduled for pursuing initial accreditation by CAAHEP. The step in the process is neither a status of accreditation nor a guarantee that accreditation will be granted."

### **Commission on Accreditation of Allied Health Education Programs**

25400 US Highway 19 N., Suite 158

Clearwater, FL 33763

727-210-2350

[www.caahep.org](http://www.caahep.org)

## **CERTIFICATE OF COMPLETION IN MEDICAL / CLINICAL ASSISTANT**

### **COURSES 1-9**

### **900 CLOCK HOURS**

### **38.0 SEMESTER CREDIT UNITS (TWC & THECB)**

### **31.5 SEMESTER CREDIT HOURS (ACCSC)**

## **EDUCATIONAL OBJECTIVES**

This program will cross train students for multiple skills areas, so they can become more employable. Students will receive 900 hours of comprehensive training in medical terminology, anatomy and physiology, concepts of effective communication; basic finances, third-party reimbursement, procedural and diagnostic coding, legal and ethical implications, applied mathematics, infection control, nutrition; electronic health records charting, patient data collection, clinical duties with special focus on phlebotomy, EKG, hemodialysis are incorporated into the training as well the completion of 168 hours of internship.

Our goal is to train students to be able to have the qualifications and training that allows them the option of what type of clinical setting they would like to work primarily in: physician office, clinics and/or hospitals. They will gain expertise to provide effective clinical and administrative skills.

Upon satisfactory completion of the training, students will be qualified to assume entry-level positions as a Medical / Clinical Assistant performing the medical procedures, lab techniques and front office duties described above.

## **CERTIFICATION EXAMINATION**

Upon successful completion of the Medical/ Clinical Assistant Program, students will receive a Certificate of Completion. Students will be eligible to take the following certification examinations through the National Health Career Association (NHA):

- Certified Phlebotomy Technician
- Certified Electrocardiograph Technician
- Certified Clinical Medical Assistant
- Certified Medical Administrative Assistant

## **NOTE:**

Students that fail the EKG and/or the Phlebotomy certification(s) will have to repeat the course(s).

## **TIME CODE**

The following time code is used on all courses to illustrate the amount of time students will spend in class or lab per course and the subsequent number of credit hours awarded.

44/48/4.0/3.0

Theory hours per course /

Lab hours per course /

Semester Credit Units (TWC & THECB)/

Semester Credit Hours (ACCSC)

## PROGRAM OUTLINE: MEDICAL / CLINICAL ASSISTANT

#	COURSE	TITLE	HRS	THEORY/ LAB	PERCENTAGE ON CAMPUS/ONLINE	TWC/THE CB SCU	ACCSC SCH
1	AP101	Anatomy & Physiology / Medical Terminology	96	50/46	80%/20%	4.5	4.0
2	CL101	Clinical I	96	46/50	80%/20%	4.5	3.5
3	MF102	Medical /Clinical Assistant Fundamentals	96	46/50	80%/20%	4.5	3.5
4	CL103	ECG/CPR	96	46/50	80%/20%	4.5	3.5
5	IB103	Medical Insurance / Bookkeeping & Billing	96	46/50	80%/20%	4.5	3.5
6	HM104	Fundamentals of Hemodialysis	96	50/46	80%/20%	4.5	4.0
7	CL102	Phlebotomy	126	60/66	80%/20%	6.0	5.0
8	EP 101	Employment Preparation	30	15/15	100%/00	1.5	1.0
9	INT 105	Internship	168	0/0/168	00/00	3.5	3.5
<b>Total Hours- Certificate of Completion in Medical Clinical Assistant</b>			<b>900</b>	<b>359/373/168</b>		<b>38.0</b>	<b>31.5</b>

**Note:** Students are required to demonstrate proficiency in both the psychomotor and affective competencies during each course. An inability to achieve the required level of competency will prevent the student from passing the course even if the overall grade for the course is "passing". Example: If a student has an overall score of 75% in the course but fails a psychomotor or affective competency, she/he will have to repeat the course.

### COURSE 1

#### AP 101

#### ANATOMY & PHYSIOLOGY MEDICAL TERMINOLOGY

#### 50/46/4.5/4.0

The student will develop a critical understanding of anatomical structures and functions of the digestive, urinary, female & male reproductive, cardiovascular, respiratory, blood, lymphatic & immune, nervous, integumentary, and the endocrine systems. The student will learn primary medical terms, word parts, word roots, prefixes, suffixes, pronunciation, and determining meanings of the basic word parts, spelling, diagnosis procedures and medical specialities. The student will dissect various organs. We will also introduce proper handwashing techniques.

Upon completion of this course, the student will be able to:

1. Become acquainted with terms that describe positions, directions, planes, and cavities of the body.
2. Name the organs of each system and describe their locations and functions.
3. Describe various pathological conditions affecting each system.
4. Detail the meanings of combining forms, prefixes, and suffixes of the system's terminology.
5. List and explain some clinical procedures, lab tests, and abbreviations that pertain to the systems.
6. Build and analyze medical terms.

### COURSE 2

#### CL 101

#### CLINICAL I

#### 46/50/4.5/3.5

During this course, the importance of infection control, medical asepsis and sterilization methods will be practiced. The student will take measurements and vital signs. The student will learn how to take medical history, prepare patients for examinations and how to assist a physician and the patient with those examinations. The principles of pharmacology and how to dispense medication under the direct supervision of a physician will be discussed. Hands-on clinical training will be incorporated.

Upon completion of this course, the student will be able to:

1. Apply principles of aseptic technique and infection control; use of the autoclave.
2. Obtain body measurements and vital signs.
3. Provide instructions and teaching for health maintenance and disease prevention.
4. Prepare and administer medications.
5. Assist with physical examinations and minor surgery.
6. Identify and care for instruments used in surgery.
7. Demonstrate professionalism in Allied Health.
8. Obtain medical history and screen patients.

### **COURSE 3**

#### **MF 102**

#### **MEDICAL CLINICAL ASSISTANT FUNDAMENTALS**

**46/50/4.5/3.5**

This course will acquaint the student with basic concepts of working in a medical office to include professional and career responsibilities. The student will develop interpersonal communication through telephone procedures, appointment setting and learning receptionist duties. The student will learn to maintain and file drug and prescription records. The student will also gain first-hand knowledge of written communication consisting of written correspondence, processing mail and telecommunication and professional reports. The student will learn professionalism skills in the allied health professions.

Upon completion of this course, the student will be able to:

1. Understand interpersonal communication
2. Perform appointment scheduling.
3. Create a patient file including SOAP notes.
4. Maintain and file medical records.
5. Perform oral and written communication.
6. Demonstrate proper telephone etiquette.
7. Understand employer expectations.

### **COURSE 4**

#### **CL 103**

#### **ECG/CPR**

**46/50/4.5/3.5**

This course will introduce the student to Electrocardiography (ECG). The basic principles of the cardiovascular system will be taught in this course. Students will learn how to set up and operate ECG equipment. Patient instruction and procedural considerations will be addressed. The student will also be instructed on the lead systems and placement and identifying rhythms. The student will learn the importance of quality assurance and continual quality improvement. CPR and First Aid Training are given during this course. Spirometry, peak-flow, nebulizer treatment will be taught during this course. Topics related to maintaining health such as nutrition, exercise, and self-examination techniques, rehabilitation and healthy living are discussed.

Upon completion of this course, the student will be able to:

1. Perform an ECG.
2. Identify normal and abnormal heart rhythms.
3. Detect and distinguish arrhythmias.
4. Perform CPR and First Aid training following the American Heart Association guidelines.
5. Perform spirometry and peak flow.
6. Understand employer expectations.
7. Identify principle of body ergonomics,
8. Describe dietary nutrients, dietary needs and health concerns

### **COURSE 5**

#### **IB 103**

#### **MEDICAL INSURANCE / BOOKKEEPING & BILLING**

**46/50/4.5/3.5**

This course will acquaint the student with the skills and knowledge of financial management and health insurance as they relate to daily functions in a medical office. The student will learn the basic aspects of filing accurate claim forms for insurance reimbursement. ICD-10, CPT and HCPCS coding systems will be introduced. Records management to include patients' medical records through manual and electronic charting. Students will complete online HIPAA training and may receive certificate of completion.

Upon completion of this course, the student will be able to:

1. Obtain reimbursement through accurate claim submission using the CMS-1500 claim form.
2. Perform basic procedural and diagnostic coding.
3. Demonstrate accounts receivable and accounts payable procedures.
4. Use a physician's fee schedule.
5. Understand legal guidelines/requirements for healthcare and principles of medical ethics decision making.
6. Understand employer expectations.
7. Understand HIPAA guidelines.

### **COURSE 6**

#### **HM 104**

#### **FUNDAMENTALS OF HEMODIALYSIS**

**50/46/4.5/4.0**

This course is designed to provide the student with the principles of renal dialysis, the normal operation of dialysis equipment and the procedure for performance of renal dialysis. This course includes the study of the anatomy and physiology of the kidney and hands-on dissection of an actual kidney. The course will introduce the student to the technical aspects of preparing, operating, monitoring, and maintaining dialysis equipment. Attention is given to medications routinely used in renal dialysis and the role of the dialysis technician. Patient needs and safety issues are addressed. End-stage renal disease, methods for patient assessment and documentation, patient comfort and transfer are also discussed during this course. Students are introduced to the standards and regulations pertinent to water treatment and other quality control issues. Theoretical information is supplemented with clinical observation and practice.

Upon completion of this course, the student will be able to:

1. Understand infection control in the dialysis setting.
2. Understand the anatomy and function of the kidney.
3. Understand the fluid dynamics, osmosis, diffusion, and ultra-filtration.
4. Set up an arterial-venous blood line.
5. Understand nutrition and renal diet.
6. Prepare the dialysate.
7. Understand pre-assessment and post-patient assessment.
8. Understand complications during the dialysis application.

## **COURSE 7**

### **CL 102**

#### **PHLEBOTOMY**

**60/66/6.0/5.0**

This course will introduce the student to phlebotomy including basic human anatomy and physiology, anatomy and physiology of the circulatory system, phlebotomy equipment, and phlebotomy techniques and safety. The student will learn customer service and patient compliance. Specimen considerations and preparation and handling, as well as special procedures and challenges will also be taught in this course. The student will learn sample consideration, preparations, and handling. Customer service, compliance with legal and ethical issues will be addressed.

Upon completion of this course, the student will be able to:

1. Review and understand anatomy and physiology.
2. Perform capillary and veni-punctures.
3. Use methods of quality control in the lab and demonstrate proper documentation.
4. Collect and process blood, urine, and other specimen for testing.
5. Understand and implement CLIA and OSHA guidelines.
6. Obtain various specimen for microbiological, serology, hematology testing, screen and follow-up test results.

## **COURSE 8**

### **EP 101**

#### **EMPLOYMENT PREPARATION**

**15/15/1.5/1.0**

This course is designed to prepare students for the job-seeking process to include demonstration of personal and job-related behavioral skills. Resume construction, appropriate dress, persuasive interviewing techniques and mannerism will be covered. Students will be required to undergo a “mock” interview with the employer from their field of study. Furthermore, students will prepare through mock certification testing for their national certification exam. Students must receive a passing grade in EP 101 to qualify for graduation. Prerequisites: AP 101, CI 101, MF 102, CI 102, IB 103, CI 103, HM 104.

Upon completion of this course, the student will be able to:

1. Create an effective resume
2. Interview in a professional manner
3. Demonstrate his/her knowledge in responding to interview question appropriately
4. Conduct a self – directed job search

## **COURSE 9**

### **INT 105**

#### **INTERNSHIP**

**0/0/168/3.5/3.5**

Students must satisfactorily complete all 8 core courses, which are administered throughout the program before being placed in an internship participating site. Internship enables the student to apply the knowledge and skills learned throughout the theoretical and clinical setting in the work environment. The student, with no financial remuneration, is placed in a medical office or clinic and is closely supervised to ensure that the school’s objectives are being met. Internship is 168 hours in length.

Upon completion of this course, the student will be able to:

1. Demonstrate effective customer service skills.

2. Recognize improvement in performance and knowledge.
3. Understand that there is more than one way of acceptable performance.
4. Apply technical skills learned in the classroom in both the administrative and clinical areas.
5. Obtain a satisfactory grade on their final evaluation.
6. Learn how to properly interact with patients.
7. Establish a network of support through colleagues.
8. Understand legal guidelines/ requirements for healthcare and principles of medical ethics and decision making.
9. Understand concepts of mental health and applied psychology.
10. Recognize and respond to verbal and nonverbal communication.
11. Demonstrate proper telephone etiquette to include triaging and responding appropriately to emergency calls.
12. Check patients in for office visits; establish, maintain and file patient medical records; and schedule appointments.
13. Understand and demonstrate the concept of Electronic Health Records.
14. Update resume, final copy turned in to Program Director and Career services.

# ASSOCIATE OF OCCUPATIONAL STUDIES IN AUTOMOTIVE TECHNOLOGY

Available at 9624 Plaza Circle Campus



Individuals portrayed in photos are actual students, graduates or employees of Western Tech

## CAREER OPPORTUNITIES IN AUTOMOTIVE TECHNOLOGY

Automotive service technicians and mechanics held about 739,900 jobs in 2014. Numerous openings will be in automobile dealerships and independent repair shops, and about 1 in 10 automotive service technicians and mechanics were self-employed in 2014. Employment of automotive service technicians and mechanics is projected to grow 5 percent from 2014 to 2024, about as fast as the average for all occupations. The number of vehicles in use continues to rise, and more entry-level service technicians will be needed to perform basic maintenance and repair, such as replacing brake pads and changing oil. New technologies, however, such as electric vehicles, may limit future demand for automotive service technicians and mechanics because they will be more reliable and thus require less maintenance and repair. Of these workers, those who have completed formal postsecondary training programs or achieved ASE certification should enjoy the best job prospects. (Source: D.O.L. Occupational Outlook Handbook, 2016 - 2017 Edition).

Labor Market Information (2012 thru 2022 Projections)

### Texas Labor Market Information

Texas Employment 2012:	51,540
Projected Texas Employment 2022:	60,680
Absolute Change 2012-2022:	9,140
Percent Change 2012-2022:	17.70%
Average Hourly Wage 2014:	\$18.85
Average Openings per year due to Replacement:	1,305
Average Openings per year due to Growth:	915

### National Labor Market Information

National Employment 2012:	701,100
Projected National Employment 2022:	761,500
Absolute Change 2012-2022:	60,400
Percent Change 2012-2022:	8.60%
Average Hourly Wage 2014:	\$19.22
Average Openings per year due to Replacement:	Not Available
Average Openings per year due to Growth:	Not Available

Source: The Labor Market & Career Information Department (LMCI) of the Texas Workforce Commission  
[www.lmci.state.tx.us](http://www.lmci.state.tx.us)

## CUSTOM TRAINING GROUP

A tremendous opportunity awaits Western Tech Automotive Graduates!

With today's shortage of skilled automobile and diesel technicians, some manufacturers are willing to provide outstanding benefits to attract new employees. Manufacturers are promoting FREE training, education and placement with five luxury automotive and diesel manufacturers.

If minimum qualifications are met, students who complete Western Tech's Automotive Technology program may be accepted for one of the following manufacturer's training programs: **AUDI** TTC, **VOLKSWAGEN** VSTT, **BMW** STEP, **MERCEDES-BENZ** ELITE, **VOLVO**.

## HOW TO PARTICIPATE IN MANUFACTURER TRAINING PROGRAMS

Participation in these programs is available to graduates of Western Tech's Automotive Technology Program. Graduates must pass a written test and an interview with the Custom Training Group (CTG). Only students with outstanding attendance records, grades, and attitudes are allowed to take the test. If selected, the student's tuition is paid by the manufacturer. After completing the training, CTG assists the graduates by sending out blanket résumés to all of its participating dealerships. It's really a great opportunity for the students, and we at Western Tech are proud to be involved with CTG.

## ASE EDUCATION FOUNDATION ACCREDITED PROGRAM IN AUTOMOTIVE TECHNOLOGY



Education Foundation

### WHAT DOES ASE MASTER LEVEL ACCREDITED IN AUTOMOTIVE MEAN?

ASE Education Foundation Master Level Accredited in Automotive means that Western Tech's Automotive Technology program has been accredited by ASE Education Foundation, in the following nine subject areas:

- A1. Engine Repair
- A2. Automatic Transmission/Transaxle
- A3. Manual Drive Train and Axles
- A4. Suspension and Steering
- A5. Brakes
- A6. Electrical/Electronic Systems
- A7. Heating and Air Conditioning
- A8. Engine Performance

### HOW DID WESTERN TECH'S AUTOMOTIVE PROGRAM BECOME ASE EDUCATION FOUNDATION ACCREDITED?

Western Tech completed an extensive evaluation and application process. Upon ASE Education Foundation review, an evaluation team conducted an on-site inspection of our campus to review the curriculum, teaching techniques, equipment and training aids, task sheets, tools, budget, and safety measures. Western Tech remains one of the few private career schools in the nation to be ASE Education Foundation Master LEVEL ACCREDITED in Automotive.

### HOW DOES A WESTERN TECH GRADUATE BENEFIT FROM AN ASE EDUCATION FOUNDATION MASTER LEVEL ACCREDITED PROGRAM?

To become ASE Certified, a person must have two years' work experience and pass ASE certification examinations. A graduate of the school's ASE Master Level Accredited program is able to substitute the training for one year of work experience toward ASE's two-year work requirement. In addition, information covered in the curriculum helps to prepare students to take the ASE examinations.

### EXPERIENCED INSTRUCTIONAL STAFF

Our instructors are required to have recent and sufficient field experience and training before joining the Western Tech team. They share insights with our students that might otherwise take years to learn. We continually update our instructors with seminars and workshops to keep them abreast of new technology. In turn, they pass this knowledge on to our students. All of Western Tech's automotive instructors are required to be ASE Certified. A large percentage of the instructional staff is Master Certified in all areas of the automobile.



## ASE EDUCATION FOUNDATION MASTER LEVEL ACCREDITED

Western Tech is one of the few private career schools in the nation to offer an automotive program that is Master Level Accredited by the ASE Education Foundation.

## FIAT CHRYSLER AUTOMOTIVE (FCA), MOPAR CAP LOCAL SCHOOL TRAINING

There is great demand for *high quality and skilled* automotive technicians. This demand has outpaced the number of technicians the regular OEM programs can produce and FCA (Fiat Chrysler Automobiles) is the first to look at high quality colleges to help their local dealers find the technicians they need. The foundational training that you receive in class paired with the factory FCA training sets you apart from the other applicants in the industry, whether applying at a FCA dealer or not. The fact that you will be able to show success and completion in actual dealership OEM training demonstrates your ability to learn and a solid baseline of technical knowledge. These credentials make you employable, more so than just a college education alone. Together they prepare you for success right now and into the future. Chrysler modules are a *required* part of the program, and accounts for 10% of the student's grade. Successful graduates upon leaving the program who has completed Level 0 and 1 can then begin working at an FCA dealership *at a Level 2 status*, and complete 80-90% of the warranty work that comes in while continuing to be trained in Level 2. This is the great value in the CAP Local program. Even if the graduate does not choose an FCA dealership, the OEM training they have received will look good on a resume and demonstrates their ability to complete factory training.

## ENTRANCE REQUIREMENTS FOR APPLICANTS PURSUING THE AUTOMOTIVE TECHNOLOGY PROGRAM

### Hybrid Program/Courses

Students who enroll in the Associate of Occupational Studies in Automotive Technology program will receive training through a hybrid delivery system, that is, a portion of their training is provided in a combination of classes being offered both on-ground and online. Specifically, this program will provide 80% of the training and education on-ground and 20% online.

Hybrid courses are web-based and delivered over the Internet using Western Tech's Learning Management System (Canvas). The system provides both synchronous and asynchronous tools used for on-line delivery. The on-line content of the course is covered by using a variety of on-line educational activities such as discussion boards, chat sessions, conference sessions, case studies, lab simulations, and quizzes. In a hybrid program, the face to face schedule is set on specific dates and times of the week, while the on-line portion of the class is organized for the student to have the flexibility to complete the on-line classroom activities based on their personal/work schedules.

Regardless of the mode of delivery, students entering this program can expect the same level of support as on-ground students to include tutoring services, technical support, employment preparation and assistance with job leads, and access to the school's library.

**Participation in online classes is vital to successful program completion. Students are provided with a computer that meets the requirements of the hybrid program. Students must have Internet access from somewhere outside the school in order to fulfill course requirements and succeed in their classes. In addition, students must have a minimum level of comfort with technology, as they may find themselves needing to access course work online for as much as half of the time the class is in session.**

For that reason, all prospective students considering enrollment in any of the hybrid programs are required to take a short "Suitability for Distance Education" survey before they enroll in school. The survey is designed to identify the prospective student's level of proficiency in the use of technology. Students can expect support in the form of training tailored to their identified needs so that they can handle the demands of the Learning Management System that houses much of their work.

### Driver's License Requirement

To be accepted into the Automotive Technology program, in addition to the general admissions requirements and enrollment procedure, a prospective student must possess a valid driver's license before being allowed to start class.

## TECHNICAL STANDARDS AND ESSENTIAL FUNCTIONS

Western Tech's Automotive Technology program is a hybrid program. It has established technical standards and essential functions for the program as more fully listed below. The ability to meet these standards and essential functions, with or without reasonable accommodation, is required in order to complete the program satisfactorily. Please review the following technical standards and essential functions carefully.

1. The ability to understand course materials and maintain a certain grade/performance level that meets the set academic requirements.
2. The ability to maintain a professional demeanor at all times and interact professionally with fellow students, internship site employees and clientele, administration and faculty.
3. The ability to adhere to a professional dress code acceptable to the profession and as set by Western Tech.
4. The ability to listen, understand, and communicate ideas presented through spoken words and sentences.
5. The ability to detect or tell the differences between sounds that vary in pitch and loudness.
6. The ability to see detail at close range (within a few feet of the observer).
7. The ability to match or detect differences between colors, including shades of color and brightness.
8. Sufficient flexibility to bend, stretch, twist, or reach with your body, arms, and/or legs.

9. The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions.
10. Sufficient finger dexterity and steadiness to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects.
11. Sufficient manual dexterity, strength, and steadiness to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.
12. The ability to coordinate two or more limbs while sitting, standing, or lying down.
13. The ability to use your abdominal and lower back muscles to support part of your body repeatedly or continuously over time without 'giving out' or fatiguing.
14. The ability to lift up to 50 lbs.
15. The ability to utilize computers and perform basic computer functions with programs such as Word, Outlook, and Excel.
16. Must be able to utilize E-Books.

The College does not discriminate in admission or access to programs on the basis of any characteristic protected by law, including disability. Persons with disabilities are eligible for admission, as long as, they can carry out classroom, laboratory and internship assignments; pass written, oral and practical examinations; and meet all of the requirements of the program and generally accepted requirements of the profession, with or without reasonable accommodation. Western Tech will make reasonable accommodations for disabilities. Applicants and students who require accommodation should contact the Campus President and submit a written request for accommodation.

## **AOS DEGREE IN AUTOMOTIVE TECHNOLOGY**

### **COURSES 1-20**

### **1524 CLOCK HOURS**

### **63.0 SEMESTER CREDIT UNITS (TWC & THECB)**

### **63.0 SEMESTER CREDIT HOURS (ACCSC)**

#### **EDUCATIONAL OBJECTIVES**

The objective of the Automotive Technology Program is to train the student as an entry level automotive technician by providing them with the skills and knowledge to repair today's highly technical automobiles. The student will be trained in automotive electronics and computer systems, diagnosis, engine rebuild, fuel and emission systems, air conditioning, brakes, steering and suspension, and drive trains. Students will learn the soft skills needed to be successful in the automotive workplace to include applied math, business writing and psychology. Graduates of this program will be prepared for entry level positions as technicians or in independent auto

repair shops, automotive dealerships, tune-up shops and fleet vehicle maintenance.

#### **TIME CODES**

The following time code is used on all courses to illustrate the amount of time students will spend in class or lab per course and the subsequent number of credit hours awarded.

44/48/4.0

Theory hours per course /

Lab hours per course /

Semester Credit Hours

#### **NOTE:**

The sequential order of classes may differ from that included in the program outline below.

#### **GRADUATION REQUIREMENT**

Students graduating from this program must pass at least one professional ASE exam prior to their scheduled graduation date and students must actively participate in all assigned MOPAR modules.

**PROGRAM OUTLINE: ASSOCIATE OF OCCUPATIONAL STUDIES IN AUTOMOTIVE TECHNOLOGY**

#	COURSE NUMBERS FOR AUTOMOTIVE TECHNOLOGY	AUTOMOTIVE TECHNOLOGY COURSE TITLE	COURSE NUMBERS FOR ELECTIVES	PERFORMANCE TUNING COURSE TITLE	HOURS	THEORY/ LAB	PERCENTAGE ON CAMPUS/ ONLINE	SEMESTER CREDIT UNITS
1	FSE 101	Fuel Systems & Emission Controls			96	40/56	80/20	4.0
2	COMM 100	Human Communications			48	48/0	80/20	3.0
3	ES 102	Basic Electronics			96	40/56	80/20	4.0
4	MATH 101	Applied Mathematics			48	48/0	80/20	3.0
5	AD 103	Automotive Diagnosis			96	40/56	80/20	4.0
6	EN 104	Automotive Engine Fundamentals I.			48	24/24	80/20	2.0
7	EN 105	Automotive Engine Fundamentals II.			48	24/24	80/20	2.0
8	BR 106	Automotive Brakes			96	40/56	80/20	4.0
9	PT 107	Powertrain & Transfer Case			96	40/56	80/20	4.0
10	SAS 108	Suspension & Steering I.			48	24/24	80/20	2.0
11	SAS 109	Suspension & Steering II.			48	24/24	80/20	2.0
12	ATT 110	Automatic Transmissions & Transaxle			96	40/56	80/20	4.0
13	AC 111	Automotive Air Conditioning			96	40/56	80/20	4.0
14	HYB 200	Hybrid, Electric & Fuel Cell	PTPE 200	Brake Performance Enhancements	48	24/24	80/20	2.0
15	LDEA 201	Light Duty Diesel Engine & Accessories	PTSE 201	Suspension Enhancements	48	24/24	80/20	2.0
16	FMD 202	Diesel Fuel & Emissions	PTEM 202	Engine Management Systems	96	40/56	80/20	4.0
17	AGFS 203	Advance Gas Fuel Systems	PTEP 203	Engine PC Programming	48	24/24	80/20	2.0
18	ADE 204	Advanced Electronics	PTFI 204	Forced Inductions	48	24/24	80/20	2.0

19	BWE 102	Business Writing Essentials			48	48/0	80/20	3.0
20	CIN 205	Capstone & Internship			228	16/32/180	00/00	6.0
<b>Total Hours-AOS Degree in Automotive Technology</b>					<b>1524</b>	<b>672/672/180</b>		<b>63.0</b>

## **COURSE 1**

### **FSE 101**

#### **FUEL SYSTEMS AND EMISSION CONTROLS**

##### **40/56 4.0**

The student will be introduced to the fundamentals of design, construction, and operation of the internal combustion, spark ignition engine's basic fuel and emission control systems. Automotive safety and the basic engine theories and laws, which govern the formulas concerning force, work, torque, and power, will be covered. This course will cover the fundamental principles of the following systems: electronic fuel injection, air intake, idle speed control, spark timing control, positive crankcase ventilation, intake manifold heat control, fuel pumps, fuel tanks, lines, and filters. This course has three Chrysler modules.

During shop/lab work, the student will apply the recommended safety procedures relating to the subject matter. The student is required to identify and use the proper automotive electronic fuel injection and emission control systems service tools and equipment. The student must perform diagnostic evaluation, service, and repairs on each of the systems covered during the course.

Upon completion of this course, the student will be able to:

1. Diagnose, service, and repair vehicles with hot or cold no-start, hard start, poor drivability, incorrect idle speed, flooding, hesitation, surging, stalling, dieseling, and emission problems on vehicles with electronic fuel injection systems.
2. Inspect, test, and replace mechanical and electrical fuel pumps, and pump control systems.
3. Inspect, test, service, and replace positive crankcase ventilation (PCV) filter/breather cap, valves, hoses, tubes, and orifices.
4. Diagnose and repair emissions and drivability problems caused by failure of the exhaust gas recirculation valve systems.
5. Perform exhaust system back pressure test.
6. Inspect and test components of the intake air temperature control systems.
7. Inspect and test electronic fuel injection system components.

## **COURSE 2**

### **COMM 100**

#### **HUMAN COMMUNICATIONS**

##### **48/0/3.0**

The Human Communication course serves to introduce the student to basic principles of human communication and apply those principles of effectively communication in the work environment. This course is designed to develop the students written and verbal communication. This course is designed to address the need employers have for skilled employees who are proficient at problem-solving, who possess communication and soft skills. The student will be required to work on developing their soft skills and will be required to participate in group discussion, group presentations, and individual presentations, and individual presentation on real-world practical applications. This course has no Chrysler modules

Upon completion of this course, the student will be able to do the following:

1. Discuss the importance of human relations to organization and careers.
2. Discuss ways to behave ethically at work.
3. Describe characteristics and roles of effective team members.
4. Explain the importance of workplace etiquette.
5. Describe ways to improve written and verbal communication.
6. Describe ways to improve soft skills in the workplace.

## **COURSE 3**

### **ES 102**

#### **BASIC ELECTRONICS**

##### **40/56/4.0**

This course will introduce the student to the fundamental principles of the automobile's electrical and electronic systems. The course covers the various types of electrical circuits and how they operate, as well as the theories and laws which dictate electrical circuit behavior. The student will also learn the fundamentals of design, construction, and operation of electrical components, meters, wiring, and circuit diagrams. The student will learn the concepts and

functions of the body control module (BCM), advanced lighting circuits, electronic and conventional analog instrumentation, indicator lights, warning lights, electrical accessories and direct current motors. Starting and charging systems will also be covered. This course includes two Chrysler modules.

Shop/Lab work will consist of applying the recommended automotive shop and personal safety procedures and learning how to correctly identify and use electrical /electronic system service tools and equipment to diagnose and repair the electrical / electronic systems and their corresponding components. The student will learn to read and interpret electrical wiring diagram circuits and perform diagnosis, service, and repairs on the following systems: starting, charging, electrical accessories advanced lighting systems, electronic instrumentation, chassis electronic controls and body computers.

Upon completion of this course, the student will be able to:

1. Check basic and complex electrical circuits with a test light and digital multi-meter and be able to determine needed repairs.
2. Check voltage and voltage drop in electrical circuits using a digital multi-meter (DVOM) and determine necessary repairs.
3. Measure and diagnose the causes of abnormal key-off battery drain, find shorts, grounds, opens, and resistance problems in electrical circuits and determine necessary repairs.
4. Perform battery capacity and state of charge test and determine necessary repairs. Diagnose charging system concerns that cause an undercharge, no start or an overcharged condition.
5. Perform starter current draw and circuit voltage drop test and determine necessary repairs.
6. Inspect and test switches, connectors, relays, and wires of electrical / electronic circuits.
7. Diagnose incorrect operation of motor-driven accessory-driven circuits and repair as needed.
8. Use wiring diagrams to diagnose electrical/electronic circuit problems.

## **COURSE 4**

### **MATH 101**

#### **APPLIED MATHEMATICS**

**48/0/3.0**

The Applied Mathematics course will refamiliarize the students with basic applied mathematics functions and concepts as they apply in the automotive field. The student will work on decimals, common fractions, ratios and proportions, and percentages as they apply to the automotive field. The math course will improve the student's ability to navigate through some complex formulas in this field and touch on a few elements of the automotive business. This course includes one Chrysler module.

Upon completion of this course, the student will be able to do the following:

1. Perform the basic arithmetic operations of addition, subtraction, multiplication, and division of whole numbers
2. Perform the basic arithmetic operations using common fractions and decimal fractions
3. Calculate simple percentages
4. Calculate discount, profit and loss, and commissions
5. Calculate interest and taxes
6. Calculate and convert between English linear and metric measurements
7. Calculate ratios and proportions
8. Use formulas for measuring area, volume, and horsepower
9. Calculate circuit parameters using Ohm's Law

## **COURSE 5**

### **AD 103**

#### **AUTOMOTIVE DIAGNOSIS**

**40/56/4.0**

This course will review the diagnosis procedures for the basic systems related to the automotive engine. The course will cover the use of diagnostic test tools and scanners to detect and interpret diagnostic trouble codes (DTC) and apply the necessary repairs. The student will be required to use various test equipment to analyze emission levels and determine the cause of abnormal emission readings. The student will practice automotive safety procedures and perform diagnosis on the following engine systems: cooling, lubrication, ignition, emission controls, spark timing controls, intake, and manifold heat controls. Engine tune up procedures will also be covered during this course. This course includes one Chrysler module.

During lab/shop time, the student will learn to apply the recommended automotive shop and personal safety procedures relating to the subject matter. The student will also learn to use automotive emission analyzers and engine oscilloscopes, hand tools and hand-held test equipment to determine general overall engine condition.

Upon completion of this course, the student will be able to:

1. Perform cylinder power balance tests and determine necessary repairs.
2. Perform engine absolute (vacuum/boost) manifold pressure tests and determine necessary repairs.
3. Inspect and test distributors and service as needed.
4. Inspect and test ignition secondary circuit wiring and components and replace as needed.
5. Diagnose engine mechanical, electrical, fuel and emission problems with an oscilloscope and engine diagnostic equipment and determine needed action.

6. Diagnose no starting, drivability, and emission problems on vehicles with Distributor Ignition (DI) systems and determine needed repair.

## **COURSE 6**

### **EN 104**

#### **AUTOMOTIVE ENGINE FUNDAMENTALS**

##### **40/56/4.0**

This course will introduce the student to the theory of operation of the automotive internal combustion spark ignition engine. The student will learn automotive safety practices and laws of physics involved with the automobile's engine operation. The student will be taught the principal operation of a number of engine systems, to include lubrication, cooling, oil, fuel, intake, and exhaust. The student will learn to perform diagnosis, service and repair on these same engine systems. This course includes two Chrysler modules.

Upon completion of this course, the student will be able to:

1. Inspect and test radiator, pressure cap, coolant recovery system, remove and replace radiator assembly.
2. Check oil passage condition.

## **COURSE 7**

### **EN 105**

#### **AUTOMOTIVE ENGINE FUNDAMENTALS**

##### **40/56/4.0**

The student will continue to develop safety practices, diagnostics, and learn to correctly identify and use automotive engine service tools and equipment. Students will learn different engine designs, constructions, and component identification. Engine service, repair, removal and installation procedures are covered along with disassembly, inspection, recondition and assembly of the engine cylinder block and cylinder head assemblies. This course includes three Chrysler modules.

Upon completion of this course, the student will be able to:

1. Inspect and test valve springs for squareness, pressure and free height comparison.
2. Adjust valves (mechanical or hydraulic lifters).
3. Remove and inspect cylinder heads for cracks and check gasket surface areas for warpage, leaks, and passage conditions.
3. Inspect crankshaft for surface cracks and journal damage.

## **COURSE 8**

### **BR 106**

#### **AUTOMOTIVE BRAKES**

##### **40/56/4.0**

During this course the student will be introduced to the basic concepts involved in the brake system. General safety practices, as well as safety procedures specific to brake systems, will be covered. The student will become familiar with how Pascal's law is used to increase force in a hydraulic system. The student will learn the fundamentals of design and operation and perform diagnosis, service and repair on the following systems: master cylinders, power assist units, hydraulic lines and valves, disc, drum, parking and antilock brakes, electrical and electronic brake components. The MSDS (Material Safety Data Sheets) are introduced during this course. This course includes one Chrysler module. During shop time, the student will be required to apply safety practices and procedures.

Upon completion of this course, the student will be able to:

1. Inspect, test, and replace metering (hold-off), proportioning (balance), pressure differential and combination valves.
2. Inspect, test, and replace components of brake warning light systems.
3. Diagnose poor stopping, noise, pulling, grabbing, dragging or pedal pulsation, and determination of repairs.
4. Mount brake drum on lathe and machine braking surfaces.
5. Refinish rotor according to manufacturer's recommendation.
6. Diagnose wheel locking, abnormal pedal feel or pulsation, and noise problems.

## **COURSE 9**

### **PT 107**

#### **POWERTRAIN / TRANSFER CASE**

##### **40/56/4.0**

This course introduces the student to the fundamentals of design, construction, and operation of the automotive powertrain systems which transmit the engine's power to the vehicle's drive wheels. The student will learn the safety procedures and the basic theories that directly relate to the powertrain system such as engine torque and torque multiplication. The student will also learn about the components of the powertrain system and their sub-systems. The principal operation of the following systems will also be covered: clutches, manual transmissions, transaxles, front drive axles, drive shafts, universal joints, differentials, and rear drive axles, advance four-wheel systems, transfer gear case as well as powertrain electrical and electronic systems. This course includes two Chrysler modules. The student

will perform diagnostic service and repair work on these same systems during the shop/lab portion of the course. The student will be required to apply the recommended shop and personal safety procedures related to powertrain systems during the recommended student shop/lab time.

Upon completion of this course, the student will be able to:

1. Diagnose clutch noise, binding, slippage, pulsation, and chatter problems.
2. Diagnose transmission noise, hard shifting, jumping out of gear, and fluid leakage, and determine the necessary repairs.
3. Disassemble, clean, and reassemble transmission components.
4. Diagnose front-wheel drive (FWD) and rear-wheel drive (RWD) shaft and universal/ constant velocity (CV) joint noise and vibration problems and determine the necessary repairs.
5. Inspect, adjust, repair or replace the hydraulic slave and master cylinders, lines, and hoses.
6. Inspect and replace the pressure plate assembly and clutch disc.
7. Diagnose differential noise and determine and perform needed adjustments or repairs.
8. Diagnose transfer gear case noise and determine and perform needed adjustment or repairs.

## **COURSE 10**

### **SAS 108**

#### **SUSPENSION AND STEERING I**

**24/24/2.0**

During this course the student will be introduced to the automotive suspension and steering systems. Automotive safety procedures, lift safety, and the use of precision steering and suspension measuring equipment, will be introduced. Basic theories such as static balance, dynamic balance, and compressibility will be taught followed by an introduction to the fundamentals of design and operation of the following systems: front suspension, rear suspension, wheel bearing, tires, wheels, shock absorbers, struts, steering columns, steering linkage mechanisms, power steering pumps, rack and pinion gears, computer-controlled suspension systems, frames and four-wheel alignment. This course includes one Chrysler module.

Upon completion of this course, the student will be able to:

1. Remove, inspect, and replace MacPherson Strut cartridge, and assemble strut coil spring, insulator, and upper strut bearing mount.
2. Inspect, remove, and replace shock absorbers.
3. Balance wheel and tire assembly (static and dynamic) utilizing the latest computerized balancing machines.

## **COURSE 11**

### **SAS 109**

#### **SUSPENSION AND STEERING II**

**24/24/2.0**

During this course the student will continue to learn the automotive suspension and steering systems including suspension, rear suspension, wheel bearing, tires, wheels, shock absorbers, struts, steering columns, steering linkage mechanisms, power steering pumps, rack and pinion gears, computer-controlled suspension systems, frames and four-wheel alignment. The student will be required to perform diagnosis, service, and repair of these same systems during shop/lab time. Also, during shop/lab, the student will apply the recommended automotive shop and personal safety procedures and learn to identify and use automotive suspension and steering equipment service tools and equipment. This course includes one Chrysler module.

Upon completion of this course, the student will be able to:

1. Diagnose short-and long-arm suspension system noises, body sway, and uneven riding height problems and determine necessary repairs.
2. Diagnose tire wear pattern and determine needed repairs.
3. Perform a total four-wheel alignment utilizing the latest computerized alignment machine.

## **COURSE 12**

### **ATT 110**

#### **AUTOMATIC TRANSMISSION AND TRANSAXLES**

**40/56/4.0**

In this course, the students will learn the fundamentals of design, operation, and construction of the automobile's automatic transmissions and transaxles, which uses a combination of a torque converter and a planetary gear system to change gear ratios automatically. The students will review and practice drive train theory and automatic transmissions and transaxle theories of operation prior to learning the following systems: hydraulic circuits and apply devices, power flow, planetary gears, shafts, torque converter, clutch engagement and the basic transmission and transaxle electrical/electronic components, sensors, and their respective computer-controlled circuits. This course includes two Chrysler modules.

Shop/lab work will consist of applying the recommended automotive shop and personal safety procedures and learning how to correctly identify and use the required service tools and equipment necessary to perform basic diagnosis, service, and repairs on automatic transmission and transaxles.

Upon completion of this course, the student will be able to:

1. Perform lock-up torque converter system tests and determine needed repairs.

2. Inspect, adjust, or replace manual shift valve, throttle linkages or cables and check gear select indicator (as applicable).
3. Explain how Pascal's law applies to the operation of automatic transmissions.
4. Check torque converter stator clutch operation and measure torque converter endplay.
5. Remove, disassemble, clean, inspect, reassemble and reinstall transmissions and transaxles.
6. Inspect, test, and replace electrical/ electronic transmissions and transaxles.
7. Retrieve trouble codes from common electronically controlled automatic transmissions switches and sensors.
8. Diagnose & recondition electronic automatic transmissions/transaxles.

## **COURSE 13**

### **AC 111**

#### **AUTOMOTIVE AIR CONDITIONING**

##### **40/56/4.0**

During the theory portion of Course AC 111, the students will be introduced to the automotive heating and air conditioning systems. The students will learn health and safety practices, the proper use and care of air conditioning tools and equipment, as well as the basic theories, rules and regulations that apply to automotive air conditioning systems. The students will learn the fundamental principles of temperature, pressures and the differences between sensible, latent, and specific heat values before they are taught the fundamentals of design, construction and operation of the air conditioning system, system components, compressors and clutches, case and duct systems, retrofit, system controls, engine cooling and comfort heating systems. This course includes four Chrysler modules.

Shop/lab work will consist of applying the recommended automotive shop and personal safety procedures and learning how to correctly identify and use automotive air conditioning service tools and equipment. Students will diagnose service and repair air conditioning systems, system components, system controls, compressors, clutches, heating and engine cooling systems. Manifold gauge reading and interpretation as well as retrofit from R-12 to R-134A will be performed and covered in detail.

Upon completion of this course, the student will be able to:

1. Conduct a performance test of the A/C system and determine needed repairs.
2. Perform leak test on A/C system and determine needed repairs.
3. Diagnose A/C system problems that cause the protection devices (pressure thermal and PCM) to interrupt system operation and determine needed repairs.
4. Inspect, test, and replace A/C compressor, clutch components, or assembly.
5. Inspect evaporator housing water drain and repair as needed.
6. Diagnose failures in the electrical controls of heating and A/C systems and determine needed repairs.

## **AUTOMOTIVE & LIGHT DUTY DIESEL**

### **COURSE 14**

#### **HYB 200**

#### **HYBRID, ELECTRIC AND FUEL-CELL VEHICLES**

##### **24/24/2.0**

This course will introduce the student to the fundamental principles of the electric battery-operated Hybrid, Electric and Fuel-Cell Vehicles. Prior to the introduction of the theory and operation of the current Hybrid Vehicle Technology, the student will review the basic electrical systems that were formerly covered in course ES-102, Basic Electronics. The student will learn hybrid safety, hybrid benefits and the concepts and basic functions of the following Hybrid Systems: Series, Parallel, and Series Parallel, Mild and Assist. The power-driven operating procedures for the following auxiliary accessory systems: Battery System, Power Brakes, Power Steering, Light Circuits, Electronic Instrumentation, Indicator Lights, Warning Devices and Heating Ventilation and Air Conditioning System will also be discussed in detail. Hydrogen and Prototype Fuel Cell Electric Vehicles and other possible hybrid vehicles will also be discussed. This course includes four Chrysler modules.

Shop/Lab work will consist of applying the recommended automotive shop and personal safety procedures and learning how to correctly identify and use the hybrid vehicle service tools and equipment to diagnose and repair the hybrid systems and its corresponding components.

Upon completion of this course, the student will be able to:

1. List the precautions that must be adhered to when working with or around high voltage electrical systems.
2. Explain how regenerative braking works.
3. Describe the difference between vehicles that are powered by electricity and those that are powered by an internal combustion engine.
4. Describe some precautions that should be followed when troubleshooting and repairing an electric vehicle.
5. Describe how the operation of accessories and auxiliary systems in a hybrid electric vehicle differ from those in an internal combustion engine vehicle and a battery electric vehicle.
6. Explain why high voltage is needed in assist-type vehicles.
7. Describe the special considerations and procedures that must be followed when servicing the different hybrid vehicle systems.



## **PERFORMANCE ELECTIVE**

### **COURSE 14**

#### **PTPE 200**

#### **BRAKE PERFORMANCE ENHANCEMENTS**

#### **24/24/2.0**

During this course, the student will be introduced to the basic concepts involved with the automobile's brake system. The student will be taught how Pascal's law is used to increase force in a hydraulic system, along with the fundamentals of design, construction, and operation of the following brake systems: master cylinders, power assist units, hydraulic lines and valves, disc brake assemblies, parking brake assemblies, anti-lock brake systems, electrical and electronic brake components. The student will be taught the correct procedures needed to customize brake components specifically to produce the best results for a variety of different applications, such as road racing, drag racing and high-performance street cars.

During the lab/shop time, the student will apply the recommended automotive shop and personal safety procedures relating to the topics covered. The student will be taught to identify and use the proper brake service tools and special test equipment necessary to perform diagnosis, service, and repairs on original manufactured and on high performance modified brakes. The student can expect 25 hours of homework during this course.

Upon completion of this course, the student will be able to:

1. Diagnose poor stopping, noise, pulling, grabbing, dragging or pedal pulsation and determine needed repairs.
2. Inspect, test, and replace metering (hold-off), proportioning (balance), pressure differential, and combination valves.
3. Refinish brake rotors according to manufacturer's recommendations.
4. Select, install, and test high performance brake systems.
5. Select, install, and test different types of suspension systems.
6. Design, install, and test different types of high-performance traction combinations
7. Design your own complete braking, suspension, and traction system.

## **AUTOMOTIVE & LIGHT DUTY DIESEL**

### **COURSE 15**

#### **LDEA 201**

#### **LIGHT DUTY DIESEL ENGINES & ACCESSORIES**

#### **40/56/4.0**

This course will introduce the student to the fundamentals of design, construction, theory, and laws of physics involved with the operation of four (4) stroke cycle light duty diesel engines. The student will learn the principle operation and interaction of the major components of 4 stroke diesel engines, such as engine blocks, crankshafts, cylinder heads, and valve train components. The student will learn to perform diagnosis, service, and repairs on these same engine systems. The student will also be introduced to the fundamentals of design, construction, and operation of the diesel engine accessory systems, such as oil lubrication, cooling, fuel, intake, exhaust turbochargers, and superchargers. The student will perform diagnosis, service, and repairs on these same systems. This course includes three Chrysler modules.

During the shop/lab time, the students will apply the recommended diesel shop and personal safety procedures, and they will learn to correctly identify and use diesel engine and accessory service tools, equipment, and repair manuals. Engine removal and installation procedures are covered along with disassembly, reconditioning, and reassembly of the engine block and cylinder heads. The student will also perform diesel engine tune-up procedures and interpret a laboratory oil analysis profile of engine oil. The student can expect 25 hours of homework during this course.

Upon completion of this course, the student will be able to:

1. Remove and inspect cylinder head assembly for cracks, and check gasket surface areas for warpage, leaks, and passage condition.
2. Inspect and test valve spring for squareness, pressure, and free height comparison.
3. Inspect crankshaft for surface cracks and journal damage.
4. Inspect engine block cylinder bores, internal drilled passage for coolant and lubricating oil bores for the crankshaft and camshaft, and the openings for the push rods and cam followers.
5. Adjust valves.
6. Locate typical, cooling system internal leaks and diagnose basic cooling system malfunctions.
7. Inspect, measure, repair and/or replace engine oil pumps, drives, inlet pipes, and screens.
8. Perform oil pressure test and determine necessary.
9. Interpret the results of a laboratory oil analysis profile of engine oil.
10. Perform test procedures on lubrication systems for contamination, oil level, temperature, filtration, and oil consumption; and determine needed repairs.
11. Mix coolant using the correct proportions of water, antifreeze, and supplemental cooling system additives to meet manufacturer recommendations and ambient temperature requirements.
12. Inspect, adjust, and/or replace drive belts

## **PERFORMANCE ELECTIVE**

### **COURSE 15**

#### **PTSE 201**

### **PERFORMANCE SUSPENSION ENHANCEMENTS**

#### **40/56/4.0**

During this course the student will be introduced to the automotive suspension and steering systems. Automotive safety procedures, and the use of precision steering and suspension measuring equipment, will be introduced. Basic theories such as static balance, dynamic balance, and wheel alignment will be taught followed by an introduction to the fundamentals of design and operation of the following systems: front suspension, rear suspension, wheel bearing, tires, wheels, shock absorbers, struts, steering columns, steering linkage mechanisms, power steering pumps, rack and pinion gears, computer-controlled suspension systems, frames and four-wheel alignment. The student will be required to perform diagnosis, service wheel alignment and repair of these same systems during shop/lab time. Also, during shop/lab, the student will apply the recommended automotive shop and personal safety procedures and learn to identify and use automotive suspension and steering equipment service tools and equipment. The student can expect 25 hours of homework during this course.

Upon completion of this course, the student will be able to:

1. Diagnose short-and long-arm suspension system noises, body sway, and uneven riding height problems and determine necessary repairs.
2. Remove, inspect, and replace MacPherson Strut cartridge, and assemble strut coil spring, insulator, and upper strut bearing mount.
3. Inspect, remove, and replace shock absorbers.
4. Balance wheel and tire assembly (static and dynamic) utilizing the latest computerized balancing machines.
5. Diagnose tire wear pattern and determine needed repairs.
6. Perform a total four-wheel alignment utilizing the latest computerized alignment machine.
7. Select the proper wheels and tire combination for different types of driving conditions.

## **AUTOMOTIVE & LIGHT DUTY DIESEL**

### **COURSE 16**

#### **FMD 202**

### **DIESEL FUEL & EMISSION SYSTEMS**

#### **40/56/4.0**

The student will be introduced to the fundamentals of design, construction, and operation of the Dodge, GM, and Ford, diesel engine fuel injection, governors, and emission controls systems. Basic diesel engine theories and laws which govern the formulas concerning force, work, torque, and power will also be covered. This course includes two Chrysler modules.

During the shop/lab time, the student will apply the diesel shop and personal safety procedures and they will learn to correctly identify and use diesel engine fuel service tools and test equipment that are recommended to perform diagnosis, service, and repairs on mechanical and hydraulic diesel fuel injection, governors, fuel pumps, tanks, and emission control systems. The student can expect 25 hours of homework during this course.

Upon completion of this course, the student will be able to:

1. Inspect, repair or replace fuel tanks, vents, cap(s), mounts, valves, crossover, and return lines and fittings.
2. Prime and bleed the fuel system; diagnose, check and repair or replace the primer pump.
3. Inspect diagnosis, test, adjust, repair or replace engine governor systems.
4. Perform an engine inspection, diagnosis, test, and adjust, and time distributor-type or in-line type fuel injection pump and drives.
5. Inspect, diagnosis test, adjust, repair and/or replace the fuel injectors.
6. Diagnosis, test, and service diesel injection systems.

## **PERFORMANCE ELECTIVE**

### **COURSE 16**

#### **PTEM 202**

### **ENGINE MANAGEMENT SYSTEMS**

#### **40/56/4.0**

This course will introduce the student to the basic fundamentals and theory of how to select, install, and calibrate engine management systems, such as piggy-back and stand-alone systems. This course will focus on proper air/fuel ratios and timing maps, specifically for both low and wide-open throttle and will cover the actual "tuning" process. The student will be taught the different fuel and timing parameters for the three different power adders and they will learn how to "make power" using correct air/fuel ratios and ignition timing.

During the shop/lab time, the students will apply hands on training along with the recommended automotive shop and personal safety procedures.

Upon completion of this course, the student will be able to:

1. Select proper management system for specific applications.
2. "Make power" while maintaining reliability when programming a standalone EMS.

**AUTOMOTIVE & LIGHT DUTY DIESEL  
COURSE 17  
AGFS 203  
ADVANCED GAS FUEL SYSTEMS  
24/24/2.0**

The students will review conventional and computer-controlled carburetors, emission control systems, on-board computers and computer input sensors before being introduced to the fundamentals of design, construction and operation of the common components found in most electronic fuel injection (EFI) systems. The students will learn automotive safety practices and the basic theories of the following automotive systems: throttle body, port fuel, sequential fuel injection systems; electronic ignition systems and On-Board Diagnostic II systems (OBDII), turbochargers, and superchargers. This course includes three Chrysler modules.

Shop/lab work will consist of applying automotive shop and personal safety procedures and learning how to correctly identify and use the automotive fuel injection service tools and diagnostic equipment. Students will diagnose service and repair the following systems: electronic fuel injection systems, electronic ignition systems, On-Board Diagnostic II systems (OBDII) and their corresponding sub-systems.

Upon completion of this course, the student will be able to:

1. Connect and prepare a 4 or 5 gas emission analyzer to test exhaust emissions. The student will learn to read and interpret exhaust gas emission readings and determine needed repairs.
2. Inspect and test fuel pressure regulation system components to adjust, repair and/or replace as necessary.
3. Inspect and test fuel injectors and replace as needed.
4. Inspect and test cold enrichment system components and adjust or replace as necessary.
5. Inspect throttle body mounting plates, air induction and filtration system, intake manifold, gaskets and replace as needed.

**PERFORMANCE ELECTIVE  
COURSE 17  
PTEP 203  
ENGINE PC PROGRAMMING  
24/24/2.0**

This course will continue to help the student develop knowledge of engine management systems, such as piggy-back and stand-alone systems with a focus on programming.

During the shop/lab time, the students will apply the recommended automotive shop and personal safety procedures and they will learn to correctly identify and use the special service tools and equipment required to perform diagnosis, service, and repairs on programmable engine systems. The student will select, install, and calibrate an ECU, on the dynamometer, for both low, and wide-open throttle, and max power with maximum reliability.

Upon completion of this course, the student will be able to:

1. Properly install a programmable engine management system using a wide band O2 sensor and/or a dynamometer.

**AUTOMOTIVE & LIGHT DUTY DIESEL  
COURSE 18  
ADE 204  
ADVANCED ELECTRONICS  
24/24/2.0**

The automotive electronics course will introduce the students to the automotive computer systems. The students will learn automotive safety practices, the purpose and function of special computers, electrical/electronic diagnostic test equipment, and the basic theory of computer operation prior to the study of the automotive computer systems. The students will also be taught the fundamentals of design, construction, and basic operation of the following electronic systems: computers and input sensors, distributor and electronic ignitions, fuel pumps, tanks, lines, filters, electronic fuel injection, emission controls, body computer, electronic instrument clusters, vehicle theft security, passive restraint, antilock brake and traction control, computer-controlled suspension, air conditioning, transmissions and transaxles systems. This course includes six Chrysler modules.

Shop/lab work will consist of applying the recommended automotive shop and personal safety procedures and learning how to correctly identify and use automotive computer systems service tools and diagnostic equipment. The students will perform diagnosis, service and repairs on the above-mentioned systems.

The students will operate computer scan tools, digital storage oscilloscopes, engine and emission analyzers and other test equipment that will allow them to monitor the performance of emission system and diagnose component or system failures.

Upon completion of this course, the student will be able to:

1. Diagnose emissions and drivability problems resulting from failure of computerized engine controls with and without stored diagnostic trouble codes and determine needed repairs.
2. Inspect, test, adjust and replace computerized engine control system sensors, actuators, and circuits.
3. Locate and interpret vehicle and major components identification number (VIN, vehicle certification labels and calibration decals)

4. Diagnose no-starting, drivability, and emission problems on vehicles with electronic ignition (distributor less) systems and determine needed repair.
5. Diagnose hot or cold no starting, hard starting, poor drivability, incorrect idle speed, poor idle, flooding, hesitation, surging, engine misfire, power loss, stalling and emission problems on vehicles with injection-type fuel systems and determine needed repairs.

## **PERFORMANCE ELECTIVE COURSE 18**

### **PTFI 203**

#### **FORCED INDUCTIONS**

**24/24/2.0**

This course will provide the students with the basic fundamentals of the three power adders: nitrous, superchargers, and turbochargers. The student will learn the operation and theory of wet and dry nitrous systems, as well as nitrous do's and don'ts, centrifugal and root's type superchargers, and turbocharger selection and sizing, for both journal and ball bearing. This course includes one Chrysler modules.

During the shop/lab time, the students will apply the recommended automotive shop and personal safety procedures and they will learn to correctly identify and use the special service tools and equipment needed to perform diagnosis, service, and repairs on different turbochargers, superchargers, and nitrous systems. They will also use the dynamometer to compare how much power is produced by each system. The student can expect 25 hours of homework during this course.

Upon completion of this course, the student will be able to:

1. Identify, install, and properly test a nitrous oxide system without blowing the engine.
2. Identify, select, and properly install a supercharger system.
3. Identify, select, and professionally install a turbocharger kit.
4. Students will have an in-depth understanding of the three types of power adders and be able to apply each system without damaging the engine.

## **COURSE 19**

### **BWE 102**

#### **BUSINESS WRITING ESSENTIALS**

**48/0/3.0**

The Business Writing Essentials course will teach students the skills required to write business memos, business letters, and technical reports and to do research when necessary. Students will prepare a resume that can be used throughout their program. Team and individual effort will be required for a student to be successful in this course. A formal oral presentation will be required. This course includes one Chrysler module.

Upon completion of this course, the student will be able to do the following:

1. Produce memos, reports, and proposals.
2. Produce a resume.
3. Use the Learning Resource Center.
4. Use proper language, organization, and citation styles to produce written communication.
5. Use proper language, organization, and speaking styles in oral communication.
6. Use peer review and peer editing teamwork to produce polished oral and written communication.

## **COURSE 20**

### **CIN 207**

#### **CAPSTONE AND INTERNSHIP**

**16/32/180/4.0**

In this course, students will be tested with written and hands on ASE based tests to demonstrate their knowledge and understanding of all the courses they have taken within the Automotive Technology Program. After demonstrating their proficiency, they student will be able to apply the knowledge and skills they have learned in a workplace environment in the Western Tech's Automotive Technology Internship Program. The Internship Program will allow students to experience situations that occur during the daily operation of a working shop. Students will be able to apply the knowledge and skills they have learned in previous courses to the workplace environment. Students entering this program must have satisfactorily completed all previous courses of the Automotive Technology Program. "Satisfactorily completed" includes meeting all academic and attendance requirements and having demonstrated entry-level competency in those skills identified as Graduate Warranty Skills.

Each student will be placed in an approved automotive repair, service, or maintenance facility without monetary compensation to continue his/her training alongside experienced automotive technicians. The Internship Coordinator will closely supervise each student's progress for a total of one-hundred eighty (180) hours. Supervision will consist of reviewing student evaluations and scheduled/unscheduled weekly extern site contact. Student evaluations will be completed by the extern site manager or supervisor on a weekly basis.

The Internship Program Coordinator will review the student's weekly evaluation as well as any extern site recommendations with each student individually. During the review, any deficiencies indicated will be addressed with the student. The student will work with the Internship Program Coordinator to establish an individual study program

designed to address and correct the areas that need improvement. The students will follow their individual study program during the weekly classroom sessions until satisfactorily completed. This course includes no Chrysler modules.

The student must successfully complete the Internship Program before they will be allowed to graduate and receive their diplomas. While at the extern site and upon completion of this course, each student will have:

1. Demonstrated entry-level competency of the automotive skills identified as Entry Level Skills in a repair, service, or maintenance environment.
2. Demonstrated various communication skills with management and coworkers while performing the duties of an automotive technician.
3. Demonstrated the ability to work as a team member.
4. Demonstrated the ability to understand and accept the responsibilities of an automotive technician in the workplace.
5. The opportunity to apply their knowledge and skills learned in school at an actual employer's job site.

# ASSOCIATE OF OCCUPATIONAL STUDIES IN DIESEL MECHANICS

Available at 9624 Plaza Circle Campus



Individuals portrayed in photos are actual students, graduates or employees of Western Tech.

## CAREER OPPORTUNITIES IN DIESEL MECHANICS

Diesel service technicians and mechanics held about 263,900 jobs in 2014. Diesel technicians usually work in well-ventilated and sometimes noisy repair shops. They occasionally repair vehicles on roadsides or at worksites. Most diesel technicians work full time. Overtime is common, as many repair shops extend their service hours during evenings and weekends. As more freight is shipped across the country, additional diesel-powered trucks will be needed to carry freight where trains and pipelines are not available or economical. Additionally, diesel cars and light trucks are becoming more popular, and more diesel technicians will be needed to maintain and repair these vehicles. Employment of diesel service technicians and mechanics is projected to grow 12 percent from 2014 to 2024, faster than the average for all occupations. Diesel engine maintenance and repair is becoming more complex as engines and other components use more electronic systems to control their operation. For example, fuel injection and engine timing systems rely heavily on microprocessors to maximize fuel efficiency and minimize harmful emissions. In most shops, workers often use hand-held or laptop computers to diagnose problems and adjust engine functions. (Source: D.O.L. Occupational Outlook Handbook, 2016-2017 Edition).

Labor Market Information (2012 thru 2022 Projections)

### Texas Labor Market Information

Texas Employment 2012:	14,140
Projected Texas Employment 2022:	17,220
Absolute Change 2012-2022:	3,080
Percent Change 2012-2022:	21.80%
Average Hourly Wage 2014:	\$22.17
Average Openings per year due to Replacement:	410
Average Openings per year due to Growth:	310

### National Labor Market Information

National Employment 2012:	119,300
Projected National Employment 2022:	131,600
Absolute Change 2012-2022:	12,300
Percent Change 2012-2022:	10.30%
Average Hourly Wage 2014:	\$23.42
Average Openings per year due to Replacement:	Not Available
Average Openings per year due to Growth:	Not Available

Source: The Labor Market & Career Information Department (LMCI) of the Texas Workforce Commission  
[www.lmci.state.tx.us](http://www.lmci.state.tx.us)

## **DAIMLER TRUCKS NORTH AMERICA (DTNA) GET AHEAD PROGRAM**

Take real web-based factory training that is recognized by Freightliner® and Western Star® Truck Dealerships and Detroit™ Engine Distributors. Western Tech's partnership with DTNA and the DTNA service network offers advanced job opportunities for you. The fifty-five Daimler modules are a requirement of the program and accounts for 20% of the student's grade. It is a dealership-based program.

## **VOLVO-DATE program is Corporate training-based program.**

### **DATE Program Eligibility**

New students enrolling into the Diesel Technology Degree program.

To be eligible to participate in the Volvo / Mack Truck DATE courses the student must meet the following criteria;

1. Have and maintain a 3.0 or higher cumulative GPA throughout the Diesel Degree Program.
2. Have and maintain a 97% or higher attendance rate throughout the Diesel Degree Program.
3. Submit a written application to attend the Volvo / Mack Truck DATE courses during ninth basic core course.
4. Pass the application interview during the tenth basic core course and be accepted.

Note: Students that fail to maintain the minimum 3.0 GPA and 97% attendance requirements after being accepted into the Volvo / Mack Truck DATE courses are subject to being removed from the Volvo / Mack Truck DATE courses. The student may be allowed to continue the Diesel Program by attending the alternative Diesel Technology courses.

For returning Western Tech Diesel Program Alumni

Alumni of the Western Tech Diesel Mechanics Program to be eligible to attend the Standalone Volvo / Mack Truck DATE program must meet the following criteria;

1. Be a graduate of the Western Tech Diesel Mechanics Program within the last five years.
2. Be in good Financial standing with Western Tech.
3. Be in good standing with Federal Student Loans. (If applicable).
4. Have graduated with a 3.0 or higher cumulative GPA throughout the Diesel Program.
5. Maintain a 97% or higher attendance rate throughout the Diesel Program.
6. Submit a written application to attend the Volvo / Mack Truck DATE program.
7. Pass the application interview and be accepted into the program.

Note: Students that fail to maintain the minimum 3.0 GPA and 97% attendance requirements after being accepted into the Volvo/Mack Truck DATE Program are subject to being removed from the Volvo/ Mack Truck DATE program.

## **ASE EDUCATION FOUNDATION ACCREDITED PROGRAM IN DIESEL MECHANIC**



**Education Foundation**

### **WHAT DOES ASE MASTER LEVEL ACCREDITED IN DIESEL MECHANIC MEAN?**

ASE Education Foundation Master Level Accredited in Automotive means that Western Tech's Automotive Technology program has been accredited by ASE Education Foundation, in the following eight subject areas:

### **HOW DID WESTERN TECH'S DIESEL MECHANIC PROGRAM BECOME ASE EDUCATION FOUNDATION ACCREDITED?**

Western Tech completed an extensive evaluation and application process. Upon ASE Education Foundation review, an evaluation team conducted an on-site inspection of our campus to review the curriculum, teaching techniques, equipment and training aids, task sheets, tools, budget, and safety measures. Western Tech remains one of the few private career schools in the nation to be ASE Education Foundation Master LEVEL ACCREDITED in Automotive.

### **HOW DOES A WESTERN TECH GRADUATE BENEFIT FROM AN ASE EDUCATION FOUNDATION MASTER LEVEL ACCREDITED PROGRAM?**

To become ASE Certified, a person must have two years' work experience and pass ASE certification examinations. A graduate of the school's ASE Master Level Accredited program is able to substitute the training for one year of work experience toward ASE's two-year work requirement. In addition, information covered in the curriculum helps to prepare students to take the ASE examinations.

## **EXPERIENCED INSTRUCTIONAL STAFF**

Our instructors are required to have recent and sufficient field experience and training before joining the Western Tech team. They share insights with our students that might otherwise take years to learn. We continually update our instructors with seminars and workshops to keep them abreast of new technology. In turn, they pass this knowledge on to our students. All of Western Tech's automotive instructors are required to be ASE Certified. A large percentage of the instructional staff is Master Certified in all areas of the automobile.

## **ASE EDUCATION FOUNDATION MASTER LEVEL ACCREDITED**

Western Tech is one of the few private career schools in the nation to offer an automotive program that is Master Level Accredited by the ASE Education Foundation.

- T2. Truck Diesel Engines
- T3. Truck Drive Train
- T4. Truck Brakes
- T5. Truck Suspension & Steering
- T6. Truck Electrical & Electronic Systems
- T7. Truck HVAC
- T8. Truck PM
- Truck Hydraulics

## **ENTRANCE REQUIREMENTS FOR APPLICANTS PURSUING THE DIESEL MECHANICS PROGRAM**

### **Hybrid Program/Courses**

Students who enroll in the Associate of Occupational Studies in Diesel Mechanics program will receive training through a hybrid delivery system, that is, a portion of their training is provided in a combination of classes being offered both on-ground and online. Specifically, this program will provide 80% of the training and education on-ground and 20% online.

Hybrid courses are web-based and delivered over the Internet using Western Tech's Learning Management System (Canvas). The system provides both synchronous and asynchronous tools used for on-line delivery. The on-line content of the course is covered by using a variety of on-line educational activities such as discussion boards, chat sessions, conference sessions, case studies, lab simulations, and quizzes. In a hybrid program, the face to face schedule is set on specific dates and times of the week, while the on-line portion of the class is organized for the student to have the flexibility to complete the on-line classroom activities based on their personal/work schedules.

Regardless of the mode of delivery, students entering this program can expect the same level of support as on-ground students to include tutoring services, technical support, employment preparation and assistance with job leads, and access to the school's library.

**Participation in online classes is vital to successful program completion. Students are provided with a computer that meets the requirements of the hybrid program. Students must have Internet access from somewhere outside the school in order to fulfill course requirements and succeed in their classes. In addition, students must have a minimum level of comfort with technology, as they may find themselves needing to access course work online for as much as half of the time the class is in session.**

For that reason, all prospective students considering enrollment in any of the hybrid programs are required to take a short "Suitability for Distance Education" survey before they enroll in school. The survey is designed to identify the prospective student's level of proficiency in the use of technology. Students can expect support in the form of training tailored to their identified needs so that they can handle the demands of the Learning Management System that houses much of their work.

### **Driver's License Requirement**

To be accepted into the Diesel Mechanics program, in addition to the general admissions requirements and enrollment procedure, a prospective student must possess a valid driver's license before being allowed to start class.

## **ENTRANCE REQUIREMENTS FOR CANDIDATES INTERESTED IN PURSUING THE CDL COURSE IN THE DIESEL MECHANICS PROGRAM**

WTC has partnered with Mesilla Valley Transportation in order to provide students in the Diesel Mechanics program an opportunity to obtain their CDL. The Texas Department of Motor Vehicles has published requirements for candidates interested in obtaining a Commercial Driver's License (CDL).

1. Candidates that are 18-20 years of age, can qualify for an Intrastate CDL;
2. Candidates 21 years of age or older may apply for an Interstate CDL;



3. Candidates must possess and present a current driver's license from any state. However, candidates must surrender their auto driver's license and accept a Texas CDL;
4. Candidates must undergo a background check. Serious felony charges will prevent the DMV from issuing a CDL. Please check with your admissions representative for the list of those items before choosing to take this course;
5. Candidates must possess and present a social security identification card;
6. Candidates must produce vehicle insurance and registration on his/her vehicle(s) that are all registered in his/her name;
7. The applicant must undergo a Department of Transportation (DOT) physical;
8. DOT Drug Test (must return clean);
9. The applicant must pass a vision exam;
10. The applicant must be fingerprinted and have a photo taken;

**NOTE: Individuals that have gone through the training for the CDL but were unable to obtain a CDL for failure to note produce or pass any of the items listed above, will still be charged for the course in its entirety. Also, students pursuing a CDL in the Diesel Mechanics program are required to undergo a background check before internship.**

## **TECHNICAL STANDARDS AND ESSENTIAL FUNCTIONS**

Western Tech's Diesel Mechanics program is a hybrid program. It has established technical standards and essential functions for the program as more fully listed below. The ability to meet these standards and essential functions, with or without reasonable accommodation, is required in order to complete the program satisfactorily. Please review the following technical standards and essential functions carefully.

1. The ability to understand course materials and maintain a certain grade/performance level that meets the set academic requirements.
2. The ability to maintain a professional demeanor at all times and interact professionally with fellow students, internship site employees and clientele, administration and faculty.
3. The ability to adhere to a professional dress code acceptable to the profession and as set by Western Tech.
4. The ability to listen, understand, and communicate ideas presented through spoken words and sentences.
5. The ability to detect or tell the differences between sounds that vary in pitch and loudness.
6. The ability to see detail at close range (within a few feet of the observer).
7. The ability to match or detect differences between colors, including shades of color and brightness.
8. Sufficient flexibility to bend, stretch, twist, or reach with your body, arms, and/or legs.
9. The ability to quickly and repeatedly adjust the controls of a machine or a vehicle to exact positions.
10. Sufficient finger dexterity and steadiness to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects.
11. Sufficient manual dexterity, strength, and steadiness to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.
12. The ability to coordinate two or more limbs while sitting, standing, or lying down.
13. The ability to use your abdominal and lower back muscles to support and balance part of your body repeatedly or continuously over time without 'giving out' or fatiguing. Work may be done up to 6 feet off the ground.
14. The ability to lift up to 50 lbs.
15. The ability to utilize computers and perform basic computer functions with programs such as Word, Outlook, and Excel.
16. Must be able to utilize E-Books.

Western Tech does not discriminate in admission or access to programs on the basis of any characteristic protected by law, including disability. Persons with disabilities are eligible for admission, as long as, they can carry out classroom, laboratory and internship assignments; pass written, oral and practical examinations; and meet all of the requirements of the program and generally accepted requirements of the profession, with or without reasonable accommodation. Western Tech will make reasonable accommodations for disabilities. Applicants and students who require accommodation should contact the Campus President and submit a written request for accommodation.

## **AOS DEGREE IN DIESEL MECHANICS**

### **COURSES 1-24**

### **1524 CLOCK HOURS**

### **63.0 SEMESTER CREDIT UNITS (TWC & THECB)**

### **63.0 SEMESTER CREDIT HOURS (ACCSC)**

#### **EDUCATIONAL OBJECTIVES**

The objective of the Associate of Occupational Studies in Diesel Mechanics is to prepare the student for entry-level employment as a diesel technician with the basic knowledge and skills to diagnose malfunctions, perform preventative maintenance and make necessary repairs on the following systems: diesel engines, suspension and steering, air brakes, electrical/electronics, drive train, heating ventilation and air conditioning, and hydraulics.

The student who completes the program will be prepared to work as an entry-level diesel service technician in medium/heavy-duty dealerships, diesel repair facilities, service and fleet maintenance facilities.

#### **TIME CODES**

The following time code is used on all courses to illustrate the amount of time students will spend in class or lab per course and the subsequent number of credit hours awarded.

44/48/4.0

Theory hours per course /

Lab hours per course /

Semester Credit Hours

#### **NOTE:**

The sequential order of classes may differ from that included in the program outline below.

#### **GRADUATION REQUIREMENT**

Students graduating from this program must pass one professional level medium/heavy truck series exam prior to their scheduled graduation date and students must actively participate in all assigned OEM training modules.

**PROGRAM OUTLINE: ASSOCIATE OF OCCUPATIONAL STUDIES IN DIESEL MECHANICS**

#	COURSE NUMBERS FOR VOLVO/MACK ELECTIVES	VOLVO/MACK COURSE TITLE	COURSE NUMBERS FOR DIESEL TECHNOLOGY	DIESEL TECHNOLOGY COURSE TITLE	HRS.	THEORY/ LAB	PERCENTAGE ON CAMPUS/ ONLINE	SEMESTER CREDIT UNITS
1	DTHF 101	Hydraulic Fundamentals			48	48/0	80/20	2.0
2	DTEF 102	Electronic Fundamentals I & II			96	40/56	80/20	4.0
3	AM 101	Applied Mathematics & Precision Measurement			48	48/0	80/20	3.0
4	DTEA 103	Diesel Engines and Engine Accessories, I & II			96	40/56	80/20	4.0
5	DTBH 104	Basic HVAC			48	48/0	80/20	2.0
6	DTBD 105	Basic Drivetrains			48	48/0	80/20	2.0
7	DTID 106	Intro to Diagnostics			48	48/0	80/20	2.0
8	DTBS 107	Basic Steering and Suspension			48	48/0	80/20	2.0
9	DTB 108	Basic Brakes			48	48/0	80/20	2.0
10	COMM 202	Human Communication			48	48/0	80/20	3.0
11	VMVF 201	Vehicle Familiarization	DTPM 201	Preventative Maintenance I	48	0/48	80/20	2.0
12	VMCM 202	Computer Navigation	DTM 202	Preventative Maintenance II	48	0/48	80/20	2.0
13	VME 203	Volvo/Mack Electronics	DTAE 203	Advanced Electronics	48	0/48	80/20	2.0
14	VMAD & SRS 204	Aftertreatment Devices & Secondary Restraint Systems	DTFS 204	Fuel Systems	48	0/48	80/20	2.0
15	VMA 205	Volvo/Mack Advanced Diagnostics I & II	DTES 205	Emission Systems	96	16/80	80/20	4.0
16	VMEN 206	Volvo/Mack Engines	DTAH 206	Advanced Hydraulic	48	0/48	80/20	2.0
17	VMH 207	Volvo/Mack HVAC	DTHV 207	Advanced HVAC	48	0/48	80/20	2.0
18	VMPT 208	Volvo Mack Powertrains	DTAP 208	Advanced Powertrains	48	0/48	80/20	2.0
19	VMB 209	Volvo/Mack Brake Systems	DTB 209	Advanced Brake Systems	48	0/48	80/20	2.0

20	VMSS 210	Volvo/Mack Steering & Suspension	DTSS 210	Advanced Steering & Suspension	48	0/48	80/20	2.0
21	VMAD 211	Volvo/Mack Advanced Diagnostics III	DTAD 211	Advanced PC Diagnostics	48	0/48	80/20	2.0
22	CDL 212	CDL Training			96	16/80	00/00	4.0
<b>Or</b>								
22	DTW 212	Basic Cutting & Welding			96	16/80	00/00	4.0
23	BWE 104	Business Writing			48	48/0	80/20	3.0
24	IN 213	Capstone & Internship			228	16/32/180	00/00	6.0
<b>Total Hours-AOS Degree in Diesel Mechanics</b>					<b>1524</b>	<b>704/640/180</b>		<b>63.0</b>

## **COURSE 1**

### **DTHF 101**

#### **HYDRAULIC FUNDAMENTALS**

##### **48/0/2.0**

During this course the student will be introduced to the fundamentals of design, construction, theory and operation of hydraulic components and systems, to include hydraulic pumps, tanks, hoses, fittings, valves, and actuators.

Throughout the shop/lab time, the students will apply the recommended shop and personal safety procedures and learn how to correctly identify and use special service tools and test equipment required to perform diagnosis, service, and repairs on hydraulic systems. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Identify system type (closed and open); perform system test, diagnosis and determine needed repairs.
2. Read and interpret system diagrams and schematics.
3. Verify placement of equipment/ components safety labels and placards; determine needed action.
4. Check reservoir fluid level, condition, and consumption, and determine needed action.
5. Inspect hoses and connections (length, size, routing, and protection); repair and/or replace as needed.

## **COURSE 2**

### **DTEF 102**

#### **ELECTRONIC FUNDAMENTALS**

##### **40/56/4.0**

This course introduces the student to the fundamental principles of the medium/heavy-duty diesel trucks basic electrical and electronic systems. The course covers the various types of electrical circuits and how they operate, as well as the theories and laws, which dictate electrical circuit behavior. The student will also learn the fundamentals of design, construction, and operation of electrical components, meters, wiring, circuit diagrams, conventional analog instrumentation, indicator lights, warning lights, electrical accessories, and direct current motors. The starting and charging systems will also be covered.

During the shop/lab time, the student will apply the recommended diesel shop and personal safety procedures and they will learn to correctly identify and use the proper service tools and test equipment required to perform diagnosis, service, and repairs on diesel electrical/electronic systems and their corresponding components. The student can expect 25 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

4. Apply Ohms Law to series, parallel, and series-parallel circuits.
5. Check voltage and voltage drop in electrical circuits using a digital multimeter (DVOM) and determine necessary repairs.
6. Diagnose shorts, opens, and resistance problems in electrical circuits and determine necessary repairs.
7. Perform battery capacity and state of charge test and determine necessary repairs.
8. Perform starter current draw and circuit voltage drop test and determine necessary repairs.
9. Diagnose charging system problems that cause an under-charge, a no-charge, or an over-charge condition.

**COURSE 3**  
**MATH 101**  
**APPLIED MATHEMATICS & PRECISION MEASUREMENTS**  
**48/0/3.0**

The Applied Mathematics & Precision Measurements course will refamiliarize the students with basic applied mathematics functions and concepts as they apply in the Heavy Truck field and the use of precision measurement tools. The student will work on decimals, common fractions, ratios and proportions, and percentages as they apply to the Heavy Truck field. The math course will improve the student's ability to navigate through some complex formulas in this field.

This course includes OEM training modules

Upon completion of this course, the student will be able to do the following:

1. Perform the basic arithmetic operations of addition, subtraction, multiplication, and division of whole numbers
2. Perform the basic arithmetic operations using common fractions and decimal fractions
3. Calculate simple percentages
4. Calculate and convert between English linear and metric measurements
5. Calculate ratios and proportions
6. Use formulas for measuring area, volume, and horsepower
7. Use and correctly read precision measurement tools

**COURSE 4**  
**DTEN 103**  
**DIESEL ENGINES & ACCESSORIES I & II**  
**40/56/4.0**

This course will introduce the student to the fundamentals of design, construction, theory, and laws of physics involved with the operation of four (4) stroke cycle diesel engines. The student will learn the principle operation and interaction of the major components of 2 and 4 stroke diesel engines, such as engine blocks, crankshafts, cylinder heads, and valve train components. The student will also be introduced to the fundamentals of design, construction, and operation of the diesel engine accessory systems, such as oil lubrication, cooling, fuel, intake, exhaust turbochargers, superchargers, and engine braking. The student will perform diagnosis, service, and repairs on these same systems.

During the shop/lab time, the students will apply the recommended diesel shop and personal safety procedures, and they will learn to correctly identify and use diesel engine and accessory service tools, equipment, and repair manuals. The student can expect 25 hours of homework during this course.

This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Remove and inspect cylinder head assembly for cracks, and check gasket surface areas for warpage, leaks, and passage conditions.
2. Inspect and test valve spring for squareness, pressure, and free height comparison.
3. Inspect crankshaft for surface cracks and journal damage.
4. Inspect engine block cylinder bores, internal drilled passage for coolant and lubricating oil bores for the crankshaft and camshaft, and the openings for the push rods and cam followers.
5. Adjust valves.
6. Locate typical, cooling system internal leaks and diagnose basic cooling system malfunctions.
7. Inspect, measure, repair and/or replace engine oil pumps, drives, inlet pipes, and screens.
8. Perform oil pressure test and determine necessary repairs.
9. Interpret the results of a laboratory oil analysis profile of engine oil.
10. Perform test procedures on lubrication systems for contamination, oil level, temperature, filtration, and oil consumption; and determine needed repairs.
11. Mix coolant using the correct proportions of water, antifreeze, and supplemental cooling system additives to meet manufacturer recommendations and ambient temperature requirements.
12. Inspect, adjust, and/or replace drive belts.

**COURSE 5**  
**DTCC 104**  
**BASIC HVAC (CLIMATE CONTROL SYSTEMS)**  
**48/0/2.0**

This course will introduce the student to theory, design, construction, and operating principles of the following climate control system components: compressors, clutches, evaporator cores, air ducts and case, refrigerant flow, heater cores. The student will learn the fundamental principles of temperature, pressures and the differences between sensible, latent, and specific heat values.

During the shop/lab time, the student will apply the recommended shop and personal safety procedures and learn how to correctly identify and use air conditioning service tools and equipment, such as refrigerant leak detectors, vacuum pumps, and A/C refrigerant recovery and recycling center machines. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Perform leak test on A/C system and determine needed repairs.
2. Conduct a performance test of the A/C and determine needed repairs.
3. Inspect, test, and replace A/C compressor, clutch components, or assembly.
4. Inspect evaporator housing water drain and repair as needed.

## **COURSE 6**

### **DTDT 105**

#### **BASIC DRIVE TRAINS**

##### **48/0/2.0**

This course will introduce the student to the theory, design, construction, and operating principles of medium/heavy-duty truck drivetrain systems that include manual transmissions, clutches, drive shafts, universal joints and tires/rims. Basic theories such as engine torque multiplication and gear theory will be taught.

During the shop/lab time, the student will apply the recommended shop and personal safety procedures and learn to identify and use service tools and test equipment necessary to perform diagnosis on medium/heavy-duty truck drivetrain systems and related components. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Diagnose clutch noise binding, slippage, pulsation, and chatter problems.
2. Remove and reinstall transmission and components.
3. Inspect, remove, repair or replace drive shaft components.
4. Inspect, adjust, and replace single disc clutch pressure plate and clutch disc.
5. Inspect and replace pilot bearing.
6. Inspect flywheel housing to transmission housing/engine mating surface and measure flywheel housing face and bore run out; determine needed action.

## **COURSE 7**

### **DTID 106**

#### **INTRODUCTION TO DIAGNOSTICS**

##### **48/0/2.0**

During this course, the student will be introduced to the fundamentals and theory of the medium/heavy truck onboard computer systems and diagnostics. To include engine and body computers, input/output sensors, electronic instrumentation,

The shop/lab work will consist of the student is applying the recommended shop and personal safety procedures, to read and interpret wiring diagrams correctly identifying and using the service tools and test equipment to perform diagnosis of on-board computer systems. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Use scan tools and laptop computer to retrieve diagnostic trouble codes.
2. Measure and diagnose the cause(s) of abnormal key-off battery drain and determine needed repairs.
3. Inspect and test switches, connectors, relays and wires of electrical/electronic circuits and determine needed repairs.
4. Diagnose incorrect operation of motor driven accessory circuits and repair as needed.

## **COURSE 8**

### **DTBS 107**

#### **BASIC SUSPENSION AND STEERING**

##### **48/0/2.0**

This course will introduce the students to the fundamentals of design, construction, and theory of the medium/heavy-duty truck front and rear suspensions systems. The student will learn the operation and theory of the wheel bearings, shock absorbers, power steering, spoke disc, dual rims, and tire matching. The student will learn the basic theories of static balance, dynamic balance, and compressibility. The students will perform diagnosis, and service, on these same systems.

During shop/lab time, the students will apply the recommended shop and personal safety procedures and they will learn to correctly identify and use the required medium/heavy-duty truck front and rear suspension systems, service tools, and test equipment. Special emphasis will be placed on wheel/ tire dismounting and mounting. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Adjust sector lash on manual steering gears.
2. Diagnose, remove, and replace tie rod ends, pitman, arms, and idler arms.
3. Drain and flush power steering systems.
4. Inspect, remove, repair or replace front and rear suspension components.

**COURSE 9**  
**DTBS 108**  
**BASIC BRAKES**  
**48/0/2.0**

This course will introduce the student to the fundamentals of design, construction, operation, and theory of the medium/heavy-duty truck air and air/hydraulic brake systems and components, such as: master cylinder, power assist unit, disc drums, wheel bearings, air brake component and their related electrical/electronic subsystem. Trailer braking systems will also be covered. The student will perform diagnosis, and service on these same systems.

During lab/shop time, the student will apply the recommended shop and personal safety procedures, and they will learn to correctly identify and use the required air and air/hydraulic brake systems and components service tools and test equipment required to perform diagnosis, and service on medium/ heavy-duty truck air and air/ hydraulic brake systems. The student will learn how to use and interpret Material Safety Data Sheets (MSDS). The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Remove, replace or repack wheel bearings and seals.
2. Use proper procedures when handling brake fluids.
3. Service brake lines and hoses.
4. Inspect, measure, and service brake system components.
5. Service and adjust parking brake systems.
6. Remove and replace truck wheels.

**COURSE 10**  
**COMM 202**  
**HUMAN COMMUNICATION**  
**48/0/3.0**

The Human Communication course serves to introduce the student to basic principles of human communication and apply those principles of effectively communication in the work environment. This course is designed to develop the students written and verbal communication. This course is designed to address the need employers have for skilled employees who are proficient at problem-solving, who possess communication and soft skills. The student will be required to work on developing their soft skills and will be required to participate in group discussion, group presentations, and individual presentations, and individual presentation on real-world practical applications. Upon completion of this course, the student will be able to do the following:

1. Discuss the importance of human relations to organization and careers.
2. Discuss ways to behave ethically at work.
3. Describe characteristics and roles of effective team members.
4. Explain the importance of workplace etiquette.
5. Describe ways to improve written and verbal communication.
6. Describe ways to improve soft skills in the workplace.

**COURSE 11**  
**Diesel Technology**  
**DTPM 201**  
**PREVENTATIVE MAINTENANCE I**  
**0/48/2.0**

During this course, the student will learn how to correctly perform preventative maintenance procedures on all medium/heavy-duty truck systems. The student will be taught the proper procedure to follow when performing PM inspections, the required forms and state and federal regulations related to on highway vehicle maintenance and inspections. Students will learn basic shop safety practices.

Throughout the shop/lab time the student will apply the recommended shop and personal safety procedures and learn how to identify and use special service tools and equipment required to perform preventative maintenance. on the student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Perform preventative maintenance inspections.
2. Correctly document vehicle condition on the preventative maintenance inspections forms.
3. Understand state and federal on highway vehicle maintenance and inspection requirements.

**COURSE 11**  
**Volvo/Mack**  
**VMVF 201**  
**VEHICLE FAMILIARIZATION**  
**0/48/2.0**

This course introduces students to industry and OEM information based on Mack Trucks and Volvo Trucks, model identification, and product specific truck theory. During this course, the student will learn the history of Mack Trucks and Volvo Trucks. Students will learn how to correctly perform preventative maintenance procedures on Mack Trucks and Volvo Trucks, systems and components. Students will be taught the proper procedure to follow when

inspecting Mack Trucks and Volvo Trucks. Students will gain knowledge and build skills in time management, warranty, safety, basic shop management and organizational skills.

Throughout the shop/lab time the student will apply the recommended Mack Truck and Volvo Truck procedures and learn how to identify and use Mack and Volvo service tools and equipment. Students will identify specific Mack and Volvo engines, transmissions and truck models. Students will also participate in organization and workflow management while in a shop environment. The student can expect 12 hours of homework during this course. This course includes OEM factory training modules.

Upon completion of this course, the student will be able to:

1. Demonstrate knowledge of the history of Volvo Trucks and Mack Trucks and be able to identify various models of each brand.
2. Visually inspect frames, tires, and exterior components.
3. Inspect and recommend repairs for truck cooling systems.
4. Demonstrate the ability to follow all lab safety procedures and use lab tools.
5. Perform preventative maintenance inspections.

**COURSE 12**  
**DIESEL TECHNOLOGY**  
**DTPM 202**  
**PREVENTATIVE MAINTENANCE II**  
**0/48/2.0**

This course will build the knowledge gained in DTPM 201. The student will perform preventative maintenance procedures on all medium/heavy-duty truck systems and add components, to include trailers and fifth wheels. The student will follow the proper procedure in performing PM inspections with detailed inspections of the following systems: brakes, exterior lights, engine compartment, interior cabin, tires, and steering and suspension components. Students will learn basic shop management and organizational skills. Special emphasis will be placed on shop safety practices.

Throughout the shop/lab time the student will apply the recommended shop and personal safety procedures and learn how to identify and use special service tools and equipment required to perform preventative maintenance on various truck systems and components. Students will also participate in organization and workflow management while in a shop environment. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Perform preventative maintenance inspections.
2. Correctly document vehicle condition on the preventative maintenance inspections forms.
3. Understand state and federal on highway vehicle maintenance and inspection requirements
4. Visually inspect frames, tires, and exterior components.
5. Inspect and recommend repairs for truck cooling systems.
6. Replace engine oil and oil filters.
7. Perform complete truck chassis lubrication.

**COURSE 12**  
**Volvo/Mack**  
**VMCM 202**  
**COMPUTER NAVIGATION**  
**0/48/2.0**

This course introduces students to using basic computer skills needed to open the Mack and Volvo Truck Dealer Portals (TDP) to view OEM information based on model and vehicle identification number. Students will learn how to access all technician support portals within TDP including, Mack and Volvo Impact, E-media, Electronics Schematics Viewer, VMAC, Mack Electronic Information Systems (EIS), MV Assist, E-Service, and Learning Management System (LMS). Training will be given on how to properly access the Premium Tech Tool (PTT) and Premium Tech Tool 2.0 (PTT 2.0). Student will learn how to identify various sections of PTT including, VCADS, Guided Diagnostics, and Impact for PTT. Students will learn how to properly link diagnostic computer system with truck computer systems. Students will follow all lab safety procedures, proper use of tools and demonstrate the ability to exercise time management and professionalism. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Demonstrate the ability to apply basic computer skills.
2. Demonstrate the ability to properly access the Trucks Dealer Portal (TDP)
3. Demonstrate the ability to use the service manuals within Trucks Dealer Portal for troubleshooting, diagnosing, and repairing vehicle faults.
4. Demonstrate the ability to use Electronic Schematics Viewer
5. Demonstrate the ability to use Mack Electronic Information Systems (EIS), MV Assist, E-Service, and Learning Management System (LMS)



**COURSE 13**  
**Diesel Technology**  
**DTED 203**  
**ADVANCED ELECTRONICS**  
**0/48/2.0**

During this course, the student will review the basic electrical systems that were covered in DTEF-102 before they will be introduced to the design, construction, and theory of the medium/heavy truck onboard computer systems that include engine and body computers, input/output sensors, electronic instrumentation, electronic lighting, anti-theft, passive restraint, electrical accessories, and electronic chassis controls.

The shop/lab work will consist of the student is applying the recommended shop and personal safety procedures, and learning how to read and interpret wiring diagrams, and correctly identifying and using the service tools and test equipment required to perform service, and repairs on on-board computer systems. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Check current flow in electrical/electronic circuits using a digital multimeter (DVOM) and determine needed repairs.
2. Measure and diagnose the cause(s) of abnormal key-off battery drain and determine needed repairs.
3. Inspect and test switches, connectors, relays and wires of electrical/electronic circuits and determine needed repairs.
4. Diagnose incorrect operation of motor driven accessory circuits and repair as needed.
5. Inspect and test auxiliary power outlet, integral fuses, terminals, and repair or replace as needed.

**COURSE 13**  
**Volvo/Mack**  
**VME 203**  
**VOLVO/MACK ELECTRONICS**  
**0/48/2.0**

In this course the student will review what electricity is and how it is used within the vehicle, the differences between voltage, amperage, and current and how they apply to Ohm's Law. Various circuit types including simple, series, parallel, and series-parallel circuits. Identifying proper volt drops and amperage draws for a starting and charging circuit. The student will also review how to read and interpret wiring schematics and identifying proper wiring and harness repairs on the vehicle. The student will learn how to identify Volvo Trucks specific and Mack Trucks specific Engine Control Module configurations and the three-module design used by Volvo Trucks and Mack Trucks. The student will also learn how to determine the function of the sensors, controls, and actuators of Mack and Volvo Engine platforms. Identify and use vehicle data link communication, multiplexing, and customer programming. The student will follow all lab safety procedures and use of lab tools and exercise time management and professionalism.

Throughout the shop/lab time the student will apply the recommended Mack Truck and Volvo Truck procedures to diagnose and repair Basic Electrical problems, Mack and Volvo Electrical components to include Engine Control Module, the sensors, controls, and actuators of Mack and Volvo engines. Students will use Mack and Volvo Impact, E-media, Electronics Schematics Viewer, VMAC, Mack Electronic Information Systems (EIS). Students will also participate in organization and workflow management while in a shop environment. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Demonstrate the ability to apply basic computer skills.
2. Demonstrate the ability to properly access the Trucks Dealer Portal (TDP)
3. Demonstrate the ability to use the service manuals within Trucks Dealer Portal for troubleshooting, diagnosing, and repairing vehicle faults.
4. Demonstrate the ability to use Electronic Schematics Viewer
5. Demonstrate the ability to use Mack Electronic Information Systems (EIS), MV Assist, E-Service, and Learning Management System (LMS)
6. Identify Volvo Trucks specific and Mack Trucks specific Engine Control Module configurations.
7. Identify the three-module design used by Volvo Trucks and Mack Trucks
8. Be able to determine the function of the sensors, controls, and actuators of Mack and Volvo Engine platforms.
9. Identify vehicle data link communication, multiplexing, and customer programming.
10. Demonstrate the ability to follow all lab safety procedures and use of lab tools.
11. Demonstrate the ability to exercise time management and professionalism.

**COURSE 14**  
**Diesel Technology**  
**DTFS 204**  
**FUEL SYSTEMS**  
**0/48/2.0**

The student will be introduced to the fundamentals of design, construction, and operation of the Detroit, International, Cummins, and Caterpillar diesel engine fuel injection, and governors.

During the shop/lab time, the student will apply the diesel shop and personal safety procedures and they will learn to correctly identify and use diesel engine fuel service tools and test equipment that are recommended to perform diagnosis, service, and repairs on mechanical and hydraulic diesel fuel injection, governors, fuel pumps, and tanks. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Inspect, repair or replace fuel tanks, vents, cap(s), mounts, valves, crossover, and return lines and fittings.
2. Prime and bleed the fuel system; check and repair or replace the primer pump.
3. Inspect, test, adjust, repair or replace engine governor systems.
4. Perform an engine inspection, test, and adjust, and time distributor-type or in-line type fuel injection pump and drives.
5. Inspect, test, adjust, repair and/or replace the fuel injectors.
6. Diagnosis, test, and service diesel injection systems.

**COURSE 14**  
**Volvo/Mack**  
**VMAD&SRS 204**

**AFTERTREATMENT DEVICES & SECONDARY RESTRAINT SYSTEMS**  
**0/48/2.0**

In this course the student will be given instruction on Diesel Particulate Filter (DPF) systems & Secondary Restraint Systems on Mack Trucks and Volvo Trucks. Student will learn how to identify catalyzed and non-catalyzed Diesel Particulate Filter systems, the components specific to catalyzed and non-catalyzed DPF systems, how to properly diagnose, repair and maintain DPF and be able to describe the process of regeneration and what chemical changes are occurring in the DPF unit. Students will also learn 2010 Emissions systems on Mack Trucks and Volvo Trucks, how to identify 2010 model year and newer exhaust after treatment system (EATS) components, the regeneration and sublimation process for the diesel particulate filter (DPF) and the selective catalyst reduction (SCR) system, what environmental contamination is reduced, diesel exhaust fluid (DEF) and the proper handling procedures, how to service, diagnose and repair the vehicle EATS system. Students will also learn how to identify the models that have SRS, what the safety advantages of the SRS are when used with the seatbelts and cargo straps, to understand the dangers associated with working on SRS systems and be able to perform correct troubleshooting procedures using test resistors, a multi-meter, and VCADS. Students will demonstrate the ability to follow all lab safety procedures and use of lab tools.

Throughout the shop/lab time the student will apply the recommended Mack Truck and Volvo Truck procedures to diagnose and repair aftertreatment devices, catalyzed and non-catalyzed Diesel Particulate Filter systems, diagnose, repair and maintain DPF systems. Students will also diagnose, repair and maintain 2010 and newer after treatment system (EATS) components, regeneration of diesel particulate filter (DPF) and the selective catalyst reduction (SCR) systems. Use diesel exhaust fluid (DEF) and demonstrate the proper handling procedures. Students will also diagnosis and repair Mack and Volvo Secondary Restraint Systems

Students will also participate in organization and workflow management while in a shop environment. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Demonstrate the ability to use the service manuals within Trucks Dealer Portal for troubleshooting, diagnosing, and repairing vehicle faults.
2. To identify catalyzed and non-catalyzed Diesel Particulate Filter systems.
3. Identify the components specific to catalyzed and non-catalyzed DPF systems.
4. Demonstrate the ability to properly diagnose, repair and maintain DPF.
5. Be able to describe the process of regeneration and what chemical changes are occurring in the DPF unit.
6. Identify 2010 model year and newer exhaust after treatment system (EATS) components.
7. Identify the regeneration and sublimation process for the diesel particulate filter (DPF) and the selective catalyst reduction (SCR) system.
8. Be able to explain what environmental contamination is reduced.
9. Be able to identify diesel exhaust fluid (DEF) and the proper handling procedures for the product.
10. Demonstrate the ability to service, diagnose and repair the vehicle EATS system.
11. Demonstrate the ability to follow all lab safety procedures and use of lab tools.
12. Be able to identify the models that have SRS and if the vehicle is so equipped.
13. Identify the safety advantages of the SRS when used with the seatbelts and cargo straps

14. Understand the dangers associated with working on SRS systems.
15. Be able to perform correct troubleshooting procedures using test resistors, a multi-meter, and VCADS.

## **COURSE 15**

### **Diesel Technology**

#### **DTES 205**

#### **EMISSION SYSTEMS**

##### **0/48/2.0**

The student will be introduced to the fundamentals of design, construction, and operation of EPA diesel fuel emission system requirements. Students will also be trained on Diesel Particulate Filter (DPF) systems. Student will learn how to identify catalyzed and non-catalyzed Diesel Particulate Filter systems, the components specific to catalyzed and non-catalyzed DPF systems, how to properly diagnose, repair and maintain DPF and be able to describe the process of regeneration and what chemical changes are occurring in the DPF unit. The regeneration and sublimation process for the diesel particulate filter (DPF) and the selective catalyst reduction (SCR) system, what environmental contamination is reduced, diesel exhaust fluid (DEF) and the proper handling procedures, how to service, diagnose and repair the vehicle emission systems.

Throughout the shop/lab time the student will apply procedures to diagnose and repair aftertreatment devices, catalyzed and non-catalyzed Diesel Particulate Filter systems, diagnose, repair and maintain DPF systems. The regeneration of diesel particulate filter (DPF) and the selective catalyst reduction (SCR) systems. Use diesel exhaust fluid (DEF) and demonstrate the proper handling procedures while in a shop environment. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. To identify catalyzed and non-catalyzed Diesel Particulate Filter systems.
2. Identify the components specific to catalyzed and non-catalyzed DPF systems.
3. Demonstrate the ability to properly diagnose, repair and maintain DPF.
4. Be able to describe the process of regeneration and what chemical changes are occurring in the DPF unit.
5. Identify 2010 model year and newer exhaust after treatment system (EATS) components.
6. Identify the regeneration and sublimation process for the diesel particulate filter (DPF) and the selective catalyst reduction (SCR) system.
7. Be able to explain what environmental contamination is reduced.
8. Be able to identify diesel exhaust fluid (DEF) and the proper handling procedures for the product.

## **COURSE 15**

### **Volvo/Mack**

#### **VMA 205**

#### **VOLVO/MACK ADVANCED DIAGNOSTICS I & II**

##### **16/80/4.0**

In this course the student will be given instruction on general and advanced diagnostic troubleshooting practices, procedures, and techniques in a shop environment. Student will learn how to identify fault codes on a vehicle using Mack Trucks and Volvo Trucks proprietary diagnostic software, how to use TDP and PTT during troubleshooting procedures, how to identify HD-OBD and how it will be used in Mack Trucks and Volvo Trucks, J1939, and J1587/1708 data link systems as well as multiplexing, the use of oscilloscopes for electrical fault troubleshooting. Students will also learn how to use an oscilloscope to test injectors, cam and crank sensing timing, and data link troubleshooting. Students will demonstrate the ability to follow all lab safety procedures and use of lab tools.

Throughout the shop/lab time the student will apply the recommended Mack Truck and Volvo Truck procedures for general and advanced diagnostic troubleshooting identify fault codes using Mack Trucks and Volvo Trucks proprietary diagnostic software use TDP and PTT during troubleshooting, diagnosis J1939, and J1587/1708 data link systems and multiplexing systems use oscilloscopes to troubleshoot electrical faults. Students will also participate in organization and workflow management while in a shop environment. The student can expect 24 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Demonstrate the ability to use the service manuals within Trucks Dealer Portal for troubleshooting, diagnosing, and repairing vehicle faults.
2. Be able to describe and use the general diagnostics and advanced diagnostics in a shop environment.
3. Be able to successfully identify fault codes on a vehicle using Mack Trucks and Volvo Trucks
4. Be able to demonstrate the use of TDP and PTT during troubleshooting procedures.
5. Be able to identify HD-OBD and how it will be used in Mack Trucks and Volvo Trucks
6. Demonstrate an understanding of the ISO, J1939, and J1587/1708 data link systems as well as multiplexing.
7. Be able to identify an oscilloscope and how it is used for electrical fault troubleshooting and usage on injectors, cam and crank sensing timing, and data link troubleshooting.
8. Demonstrate the ability to follow all lab safety procedures and use of lab tools.

9. Demonstrate the ability to exercise time management and professionalism.

## **COURSE 16**

### **Diesel Technology**

#### **DTHA 201**

#### **ADVANCED HYDRAULIC**

**0/48/2.0**

During this course, the student will review Hydraulic Fundamentals that were covered in DTHF-102 before they will be introduced to the design, construction, theory and operation of the medium/heavy-duty truck mechanical and hydraulic systems, to include hydraulic pumps, tanks, hoses, fittings, valves, and actuators.

Throughout the shop/lab time, the students will apply the recommended shop and personal safety procedures and learn how to correctly identify and use special service tools and test equipment required to perform diagnosis, service, and repairs on medium/heavy-duty diesel hydraulic systems. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Identify system type (closed and open); perform system test, diagnosis and determine needed repairs.
2. Read and interpret system diagrams and schematics.
3. Verify placement of equipment/ components safety labels and placards; determine needed action.
4. Check reservoir fluid level, condition, and consumption, and determine needed action.
5. Inspect hoses and connections (length, size, routing, and protection); repair and/or replace as needed.
6. Diagnose root cause of hydraulic pump failure and determine needed action.
7. Inspect, repair, and/or replace reservoir, sight glass, vents, caps mounts, valves, screens, and hydraulic pumps.
8. Purge and/or bleed systems in accordance with manufacturer's recommended procedures.

## **COURSE 16**

### **Volvo/Mack**

#### **VMEN 206**

#### **VOLVO/MACK ENGINES**

**0/48/2.0**

In this course the student will be given instruction on identify and explain the components of a Volvo D-series and/or Mack MP-series engine. Students will learn how to disassemble, inspect and overhaul a Volvo or Mack engine. Students will also learn the ability to properly identify parts failure and how to properly research parts needed to repair the engine to working order as needed.

Throughout the shop/lab time the student will apply the recommended Mack Truck and Volvo Truck procedures and special tools for engine overhaul, parts failure analyzes and correct repair parts selection. Students will also participate in organization and workflow management while in a shop environment. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Demonstrate the ability to use the service manuals within Trucks Dealer Portal for troubleshooting, diagnosing, and repairing vehicle faults.
2. Be able to identify and explain the components of a Volvo D-series and/or Mack MP-series engine.
3. Demonstrate the ability to overhaul a Volvo or Mack engine.
4. Demonstrate the ability to properly identify parts failure.
5. Be able to properly research parts needed to repair the engine to working order as needed.
6. Demonstrate the ability to follow all lab safety procedures and use of lab tools.
7. Demonstrate the ability to exercise time management and professionalism

## **COURSE 17**

### **Diesel Technology**

#### **DTHV 207**

#### **ADVANCED HVAC (CLIMATE CONTROL SYSTEMS)**

**0/48/2.0**

During this course, the student will review Basic HVHC that were covered in DTBH 104 before they will be introduced theory, design, construction, operating principles and diagnostics of the climate control system components: compressors, clutches, evaporator cores, air ducts and case, refrigerant flow, heater cores, electrical/electronic temperature controls and their required subsystems. The student will learn the principles of temperature, pressures and the differences between sensible, latent, and specific heat values.

During the shop/lab time, the student will apply the recommended shop and personal safety procedures and learn how to correctly identify and use air conditioning service tools and equipment, such as refrigerant leak detectors, vacuum pumps, and A/C refrigerant recovery and recycling center machines. The student will learn how to read and interpret manifold gauge reading, as well as retrofit from R-12 to R-134A systems. The student will diagnose, service, and repair A/C systems and components in compliance with EPA section 609 regulation. The student can expect 25 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Perform leak test on A/C system and determine needed repairs.

2. Conduct a performance test of the A/C and determine needed repairs.
3. Diagnose A/C system problems that cause the protection devices (pressure, thermal, and PCM) to interrupt system operation and determine needed repairs.
4. Inspect, test, and replace A/C compressor, clutch components, or assembly.
5. Inspect evaporator housing water drain and repair as needed.
6. Diagnose failures in the electrical/ electronic controls of heating and A/C systems and determine needed repairs.
7. Demonstrate the ability to locate and operate the cab and sleeper HVAC controls during the servicing procedure.

## **COURSE 17**

**Volvo/Mack**

**VMH 207**

**VOLVO/MACK HVAC**

**0/48/2.0**

In this course the student will be given instruction on Mack and Volvo HVAC component location and function during normal operation, how to locate and operate the cab and sleeper HVAC controls during the servicing procedure and how to service, troubleshoot and repair the vehicle's HVAC system for the cab and sleeper using a/c recovery/recycling equipment.

Throughout the shop/lab time the student will apply the recommended Mack Truck and Volvo Truck procedures and special tools for HVAC system diagnosis and repair. Students will also participate in organization and workflow management while in a shop environment. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Demonstrate the ability to use the service manuals within Trucks Dealer Portal for troubleshooting, diagnosing, and repairing vehicle faults.
2. Be able to identify component location and function during normal operation of the HVAC system.
3. Demonstrate the ability to locate and operate the cab and sleeper HVAC controls during the servicing procedure.
4. Demonstrate the ability to service, troubleshoot and repair the vehicle's HVAC system for the cab and sleeper using a/c recovery/recycling equipment.
5. Demonstrate the ability to follow all lab safety procedures and use of lab tools.
6. Demonstrate the ability to exercise time management and professionalism.

## **COURSE 18**

**Diesel Technology**

**DTAP 208**

**ADVANCED DRIVE TRAINS**

**0/48/2.0**

During this course, the student will review Basic Drivetrains that was covered in DTBD 105 before they will be introduced to advanced theory, design, construction, operating principles and diagnostics of medium/heavy-duty truck drivetrain systems that include manual transmissions, clutches, drive shafts, universal joints, semi-full floating drive axles, multi-wheel drive systems, power take off, air operated shifting, two speed and controlled traction differentials, and tires/rims. Students will review air/hydraulic principles and components operation, and the basic theories such as engine torque multiplication and gear theory will be taught.

During the shop/lab time, the student will apply the recommended shop and personal safety procedures and learn to identify and use service tools and test equipment necessary to perform diagnosis, service and repairs on medium/heavy-duty truck drivetrain systems and related components. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Diagnose clutch noise binding, slippage, pulsation, and chatter problems.
2. Remove, disassemble, clean, inspect, and reassemble and reinstall transmission components.
3. Inspect, test, and replace electrical/ electronic transmission components.
4. Inspect, remove, repair or replace drive shaft components.
5. Inspect, adjust, and replace single disc clutch pressure plate and clutch disc.
6. Inspect and replace pilot bearing.
7. Inspect flywheel housing to transmission housing/engine mating surface and measure flywheel housing face and bore run out; determine needed action.

**COURSE 18**  
**Volvo/Mack**  
**VMPT 208**  
**VOLVO MACK POWERTRAINS**  
**0/48/2.0**

In this course the student will be given instruction on Mack and Volvo I-shift or M-drive transmissions, how to service, troubleshoot, and repair transmissions (M-Drive and I-Shift) using Mack and Volvo specific electronic resources, how to use PTT and VCADS to properly actuate the automated transmission diagnostic tools, how to correctly identify a Mack top-load differential assembly. Students will also learn how to service, troubleshoot, and repair Mack differential and power divider assemblies and completely disassemble and reassemble the Mack differential using the specified repair manual.

Throughout the shop/lab time the student will apply the recommended Mack Truck and Volvo Truck procedures and special tools for transmission and differential diagnosis and repair. Students will also participate in organization and workflow management while in a shop environment. The student can expect 12 hours of homework during this course. This course includes OEM factory training modules.

Upon completion of this course, the student will be able to:

1. Demonstrate the ability to use the service manuals within Trucks Dealer Portal for troubleshooting, diagnosing, and repairing vehicle faults.
2. Correctly identify an I-shift or M-drive transmission.
3. Be able to service, troubleshoot, and repair transmissions (M-Drive and I-Shift) using Mack and Volvo specific electronic resources.
4. Be able to use PTT and VCADS to properly actuate the automated transmission diagnostic tools.
5. Correctly identify a Mack top-load differential assembly.
6. Be able to demonstrate the ability to service, troubleshoot, and repair Mack differential and power divider assemblies.
7. Completely disassemble and reassemble the Mack differential using the specified repair manual.
8. Demonstrate the ability to follow all lab safety procedures and use of lab tools
9. Demonstrate the ability to exercise time management and professionalism.

**COURSE 19**  
**DTB 209**  
**ADVANCED TRUCKS BRAKES**  
**0/48/2.0**

During this course, the student will review Basic Drivetrains that was covered in DTB 108 before they will be introduced to advanced theory, design, construction This course will introduce the student to advanced design, construction, operation, and theory of the medium/heavy-duty truck air and air/hydraulic brake systems and components, such as: master cylinder, power assist unit, disc drums, wheel bearings, air brake component and their related electrical/electronic subsystem. Trailer braking systems will also be covered. The student will perform diagnosis, service, and repairs on these same systems.

During lab/shop time, the student will apply the recommended shop and personal safety procedures, and they will learn to correctly identify and use the required air and air/hydraulic brake systems and components service tools and test equipment required to perform diagnosis, service, and repairs on medium/ heavy-duty truck air and air/ hydraulic brake systems. The student will learn how to use and interpret Material Safety Data Sheets (MSDS). The student can expect 12 hours of homework during this course This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Remove, replace or repack wheel bearings and seals.
2. Use proper procedures when handling brake fluids.
3. Service brake lines and hoses.
4. Inspect, measure, and repair or replace brake system components.
5. Diagnose and repair stop light circuits.
6. Service and adjust parking brake systems.
7. Perform leakage and operational tests on brake application valves.
8. Diagnose poor stopping, noise, pulling, grabbing, dragging or pedal pulsations, and determine needed repairs.
9. Remove and replace truck wheels.

## **COURSE 19**

**Volvo/Mack**

**VMB 209**

### **VOLVO/MACK BRAKE SYSTEMS**

**0/48/2.0**

In this course the student will be given instruction on Mack and Volvo specific Mechanical and electronic braking systems. The student will learn details about the air braking systems used on Mack Trucks and Volvo Trucks, how to service, troubleshoot, repair, and adjust as necessary the vehicle's brakes, and what type of ABS system is in use on an individual truck. Students will also learn how to test, repair or replace sensor and about the different inputs used by the ABS control to provide enhanced antilock braking and how to use handheld computer system for servicing and repairing the ABS system.

Throughout the shop/lab time the student will apply the recommended Mack Truck and Volvo Truck procedures and special tools for brake system and ABS systems diagnostics and repairs. Students will also participate in organization and workflow management while in a shop environment. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Demonstrate the ability to use the service manuals within Trucks Dealer Portal for troubleshooting, diagnosing, and repairing vehicle faults.
2. Be able to identify the air braking systems used on Mack Trucks and Volvo Trucks.
3. Demonstrate the ability to service, troubleshoot, repair, and adjust as necessary the vehicle's brakes. Be able to identify what type of ABS system is in use on an individual truck.
4. Be able to identify additional sensor inputs used by the ABS control to provide enhanced antilock braking.
5. Demonstrate the use of a handheld computer system for servicing and repairing the ABS system.
6. Demonstrate the use of the Bendix Acom system for servicing and repairing the ABS system.
7. Demonstrate the ability to follow all lab safety procedures and use of lab tools.
8. Demonstrate the ability to exercise time management and professionalism.

## **COURSE 20**

**DTSS 210**

### **ADVANCED SUSPENSION AND STEERING**

**0/48/2.0**

During this course, the student will review Basic Drivetrains that was covered in DTBS 107 before they will be introduced to advanced design, construction, and theory of the medium/heavy-duty truck front and rear suspensions systems. The student will learn the operation and theory of the wheel bearings, shock absorbers, power steering, air assisted manual steering, and steering columns, linkages, computer-controlled suspension systems, load sensing steering, fiber composite leaf springs, electronic air bag suspensions, cab air suspension systems, spoke disc, dual rims, and tire matching. The student will learn the basic theories of static balance, dynamic balance, and compressibility. The students will perform diagnosis, service, and repairs on these same systems.

During shop/lab time, the students will apply the recommended shop and personal safety procedures and they will learn to correctly identify and use the required medium/heavy-duty truck front and rear suspension systems, service tools, and test equipment. Special emphasis will be placed on wheel/ tire dismounting and mounting. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Remove and replace steering columns, gears, and related components.
2. Adjust sector lash on manual steering gears.
3. Diagnose, remove, and replace tie rod ends, pitman, arms, and idler arms.
4. Drain and flush power steering systems.
5. Remove and replace power steering pumps, pulleys, integral reservoirs, and check flow control valves and pressure relief valve.
6. Inspect, remove, repair or replace front and rear suspension components.
7. Perform preoperational inspection on tractor/trailer air suspension systems. Use a computer wheel aligner to measure all front and rear suspension angles and adjust the angles according to manufacturer specifications.

## **COURSE 20**

**Volvo/Mack**

**VMSS 210**

### **VOLVO/MACK STEERING & SUSPENSION**

**16/80/4.0**

In this course the student will be given instruction on Mack and Volvo specific steering and suspension systems. The student will learn how to service and adjust as necessary air ride suspension systems and steel leaf spring systems, how to identify, troubleshoot, and diagnose steering and stability system issues and how to correct alignment

angles of drive and steer axle assemblies. The student will also learn how to identify tire wear patterns and how steering and suspension systems can have this effect.

Throughout the shop/lab time the student will apply the recommended Mack Truck and Volvo Truck procedures and special tools for steering and suspension systems diagnostics and repairs, alignment of tires and correction of tire wear problems. Students will also participate in organization and workflow management while in a shop environment. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Demonstrate the ability to use the service manuals within Trucks Dealer Portal for troubleshooting, diagnosing, and repairing vehicle faults.
2. Have the ability to identify and explain Mack steering and suspension systems found on Mack Trucks.
3. Demonstrate the ability to service and adjust as necessary air ride suspension systems and steel leaf spring systems.
4. Be able to identify, troubleshoot, and diagnose steering and stability system issues.
5. Be able to identify the correct alignment angles of drive and steer axle assemblies.
6. Be able to identify tire wear patterns and how steering and suspension systems can have this effect.
7. Demonstrate the ability to follow all lab safety procedures and use of lab tools.
8. Demonstrate the ability to exercise time management and professionalism.

## **COURSE 21**

### **Diesel Technology**

#### **DTAD 211**

#### **ADVANCED PC DIAGNOSTICS**

#### **0/48/2.0**

During this course, the student will review Basic Drivetrains that was covered in DTID 106 before they will be introduced to advanced design, construction, and theory of the medium/heavy truck onboard computer systems that include engine and body computers, input/output sensors, electronic instrumentation, electronic lighting, anti-theft, passive restraint, electrical accessories, and electronic chassis controls.

The shop/lab work which the student is applying the recommended shop and personal safety procedures, and learning how to read and interpret wiring diagrams, and correctly identifying and using the service tools and test equipment required to perform diagnosis, service, and repairs on on-board computer systems. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Check current flow in electrical/electronic circuits using a digital multimeter (DVOM) and determine needed repairs.
2. Measure and diagnose the cause(s) of abnormal key-off battery drain and determine needed repairs.
3. Inspect and test switches, connectors, relays and wires of electrical/electronic circuits and determine needed repairs.
4. Diagnose incorrect operation of motor driven accessory circuits and repair as needed.
5. Diagnose the cause of data base communication problems and determine needed action.
6. Inspect and test auxiliary power outlet, integral fuses, terminals, and repair or replace as needed.
7. Inspect, diagnose, repair and replaced computer systems.

## **COURSE 21**

### **Volvo/Mack**

#### **VMAD 211**

#### **VOLVO/MACK ADVANCED DIAGNOSTICS III**

#### **0/48/2.0**

In this course the student will be given an review on previously learned general and advanced diagnostic troubleshooting practices, procedures, and techniques, the student will also learn how to use the general diagnostics and advanced diagnostics in a shop environment, how to successfully identify fault codes on a vehicle using Mack Trucks and Volvo Trucks proprietary diagnostic software, and how to the use of TDP and PTT during troubleshooting procedures. The student will learn how to identify HD-OBD and how it will be used in Mack Trucks and Volvo Trucks, an understanding of the ISO, J1939, and J1587/1708 data link systems as well as multiplexing and detailed use of oscilloscope usage on injectors, cam and crank sensing timing, and data link troubleshooting.

Throughout the shop/lab time the student will apply the recommended Mack Truck and Volvo Truck procedures and special tools for diagnostic troubleshooting practices, procedures, and techniques and correction of vehicle fault codes. Students will also participate in organization and workflow management while in a shop environment. The student can expect 12 hours of homework during this course. This course includes OEM training modules.

Upon completion of this course, the student will be able to:

1. Demonstrate the ability to use the service manuals within Trucks Dealer Portal for troubleshooting, diagnosing, and repairing vehicle faults.
2. Be able to describe and use the general diagnostics and advanced diagnostics in a shop environment.



3. Be able to successfully identify fault codes on a vehicle using Mack Trucks and Volvo Trucks proprietary diagnostic software.
4. Be able to demonstrate the use of TDP and PTT during troubleshooting procedures.
5. Be able to identify HD-OBD and how it will be used in Mack Trucks and Volvo Trucks
6. Demonstrate an understanding of the ISO, J1939, and J1587/1708 data link systems as well as multiplexing.
7. Demonstrate oscilloscope usage on injectors, cam and crank sensing timing, and data link troubleshooting.
8. Demonstrate the ability to follow all lab safety procedures and use of lab tools.
9. Demonstrate the ability to exercise time management and professionalism.

**COURSE 22**  
**OPTION #1**  
**CDL 212**  
**CDL TRAINING**  
**16/80/4.0**

The student will receive entry-level training in commercial vehicle operation and driving with classroom and behind-the-wheel instruction. This will include laws relating to intrastate commercial motor vehicle operations; pre-trip inspection, vehicles safety and operational equipment. Coupling and uncoupling of combination units, placing the commercial motor vehicle in safe operation, the use of controls and emergency equipment. The student will be trained on inspection of mechanical components, defensive driving techniques, cargo loading, securing load, documentation, map reading, DOT logbooks, trip planning, accident and fire prevention, reporting, hazardous material transportation and documentation. The students will also be given demonstration and skill development of basic maneuvers of driving a combination vehicle. Driving proficiency development will include vehicle control, backing, visual search, shifting, turning, space and speed management, and hazard perception. Successful completion of this class should prepare the student to pass the Commercial Driver's License (CDL) skill examination.

Classroom and behind-the-wheel instruction will consist of: laws relating to either interstate and/or intrastate commercial motor vehicle operations; pre-trip inspection of commercial motor vehicles and both safety and operational equipment; coupling and uncoupling of combination units, if the commercial motor vehicle to be driven includes such units; placing the commercial motor vehicle in operation; use of the commercial motor vehicle's controls and emergency equipment; operation of the inner-city and interstate highway traffic and passing; turning, backing, and parking the commercial motor vehicle; braking and slowing the vehicle by means other than application of the brakes; and completing driver's daily log books. Students that select this option must meet all state and Federal requirements related to obtaining a CDL.

**OR**  
**COURSE 22**  
**OPTION #2**  
**DTBCW 204**  
**BASIC CUTTING AND WELDING**  
**16/80/4.0**

During this course, the student will be taught how to set-up the oxyacetylene process for cutting and welding. The student will learn the basic techniques for basic fillet welds. Safety precautions will be strictly enforced.

The shop/lab work will consist of the student applying the recommended shop and personal safety procedures, the student will practice metal cutting and horizontal welding. Upon completion of this course, the student will be able to:

4. Fully understand the importance of shop and equipment safety.
5. Breakdown and set-up oxygen and acetylene cutting and welding torches.
6. Fuse metal in the horizontal position using the shielded metal arc welding process.

**COURSE 23**  
**BWE 104**  
**BUSINESS WRITING ESSENTIALS**  
**48/0/3.0**

The Business Writing Essentials course will teach students the skills required to write business memos, business letters, and technical reports and to do research when necessary. Students will prepare a resume that can be used throughout their program. Team and individual effort will be required for a student to be successful in this course. A formal oral presentation will be required. This course includes OEM training modules. Upon completion of this course, the student will be able to do the following:

1. Produce memos, reports, and proposals.
2. Produce a resume.
3. Use the Learning Resource Center.
4. Use proper language, organization, and citation styles to produce written communication.
5. Use proper language, organization, and speaking styles in oral communication.
6. Use peer review and peer editing teamwork to produce polished oral and written communication.

**COURSE 24**  
**DTIN 213**  
**CAPSTONE & DIESEL INTERNSHIP**  
**16/32/180/6.0/**

In this course, students will be tested with written and hands on ASE based tests to demonstrate their knowledge and understanding of all the courses they have taken within the Diesel Technology Program. After demonstrating their proficiency, they student will be able to apply the knowledge and skills they have learned in a workplace environment.

Students entering the internship must have satisfactorily completed all previous courses of the Diesel Technology program. "Satisfactorily completed" includes meeting all academic and attendance requirements and having demonstrated entry-level competency in those skills identifying as Graduate Warranty Skills. Each student will be placed in an approved diesel repair, service, or maintenance facility without monetary compensation to continue his/her training alongside experienced diesel technicians. The Internship Program Coordinator will closely supervise each student's progress for a total of one-hundred eighty (180) hours. Supervision will consist of reviewing weekly student evaluations and scheduled/unscheduled weekly intern site contact. Intern site manager or supervisor on a weekly basis will complete students' evaluations.

The Internship Program Coordinator will review the student's weekly evaluation as well as any extern site recommendations with each student individually. During the review, any deficiencies indicated will be addressed with the student. The student will work with the Internship Program Coordinator to establish an individual study program designed to address and correct the areas that need improvement. The students will follow their individual study programs. The students must successfully complete the Internship Program before they will be allowed to graduate and receive their diplomas. While at the extern site and upon completion of this course, each student will have:

1. Demonstrate entry-level competency through written and hands on ASE based testing of medium/heavy-duty truck skills.
2. Demonstrate entry-level competency of the medium/heavy-duty truck skills identified as Graduate Warranty Skills in the repair, service, or maintenance environment.
3. Demonstrated various communication skills with management and co-workers while performing the duties of a diesel service technician.
4. Demonstrated the ability to work as a team member.
5. Demonstrated ability to understand and accept the responsibilities of a Diesel service technician in the workplace.

# ASSOCIATE OF OCCUPATIONAL STUDIES IN REFRIGERATION AND HVAC TECHNOLOGY

Available at 9624 Plaza Circle Campus



Individuals portrayed in photos are actual students, graduates or employees of Western Tech.

## CAREER OPPORTUNITIES IN REFRIGERATION AND HVAC TECHNOLOGY

Employment of heating, air conditioning, and refrigeration mechanics and installers is projected to grow 14 percent from 2014 to 2024, much faster than the average for all occupations. Commercial and residential building construction will drive employment growth. Heating and air conditioning systems control the temperature, humidity, and overall air quality in homes, businesses, and other buildings. By providing a climate-controlled environment, refrigeration systems make it possible to store and transport food, medicine, and other perishable items. The growing number of sophisticated climate-control systems is also expected to increase demand for qualified HVACR technicians. Job opportunities for HVACR technicians are expected to be excellent, particularly for those who have completed training at an accredited technical school or through an apprenticeship. Candidates familiar with computer tablets and electronics, as well as those who have developed troubleshooting skills, will have the best job opportunities as employers continue to have difficulty finding qualified technicians to install, maintain, and repair complex new systems. (Source: D.O.L. Occupational Outlook Handbook, 2016-2017 Edition).

Labor Market Information (2012 thru 2022 Projections)

### Texas Labor Market Information

Texas Employment 2012:	23,230
Projected Texas Employment 2022:	28,220
Absolute Change 2012-2022:	4,990
Percent Change 2012-2022:	21.50%
Average Hourly Wage 2014:	\$20.28
Average Openings per year due to Replacement:	590
Average Openings per year due to Growth:	500

### National Labor Market Information

National Employment 2012:	267,600
Projected National Employment 2022:	323,500
Absolute Change 2012-2022:	55,900
Percent Change 2012-2022:	20.90%
Average Hourly Wage 2014:	\$22.17
Average Openings per year due to Replacement:	Not Available
Average Openings per year due to Growth:	Not Available

Source: The Labor Market & Career Information Department (LMCI) of the Texas Workforce Commission  
[www.lmci.state.tx.us](http://www.lmci.state.tx.us)

## **ENTRANCE REQUIREMENTS FOR APPLICANTS PURSUING THE REFRIGERATION AND HVAC TECHNOLOGY PROGRAM**

### **Hybrid Program/Courses**

Students who enroll in the Associate of Occupational Studies in Refrigeration and HVAC Technology program will receive training through a hybrid delivery system, that is, a portion of their training is provided in a combination of classes being offered both on-ground and online. Specifically, this program will provide 80% of the training and education on-ground and 20% online.

Hybrid courses are web-based and delivered over the Internet using Western Tech's Learning Management System (Canvas). The system provides both synchronous and asynchronous tools used for on-line delivery. The on-line content of the course is covered by using a variety of on-line educational activities such as discussion boards, chat sessions, conference sessions, case studies, lab simulations, and quizzes. In a hybrid program, the face to face schedule is set on specific dates and times of the week, while the on-line portion of the class is organized for the student to have the flexibility to complete the on-line classroom activities based on their personal/work schedules.

Regardless of the mode of delivery, students entering this program can expect the same level of support as on-ground students to include tutoring services, technical support, employment preparation and assistance with job leads, and access to the school's library.

**Participation in online classes is vital to successful program completion. Students are provided with a computer that meets the requirements of the hybrid program. Students must have Internet access from somewhere outside the school in order to fulfill course requirements and succeed in their classes. In addition, students must have a minimum level of comfort with technology, as they may find themselves needing to access course work online for as much as half of the time the class is in session.**

For that reason, all prospective students considering enrollment in any of the hybrid programs are required to take a short "Suitability for Distance Education" survey before they enroll in school. The survey is designed to identify the prospective student's level of proficiency in the use of technology. Students can expect support in the form of training tailored to their identified needs so that they can handle the demands of the Learning Management System that houses much of their work.

### **Driver's License Requirement**

To be accepted into the Refrigeration and HVAC Technology program, in addition to the general admissions requirements and enrollment procedure, a prospective student must possess a valid driver's license before being allowed to start class.

## **TECHNICAL STANDARDS AND ESSENTIAL FUNCTIONS**

Western Tech's Refrigeration and HVAC Technology program is a hybrid program. It has established technical standards and essential functions for the program as more fully listed below. The ability to meet these standards and essential functions, with or without reasonable accommodation, is required in order to complete the program satisfactorily. Please review the following technical standards and essential functions carefully.

1. The ability to understand course materials and maintain a certain grade/performance level that meets the set academic requirements.
2. The ability to maintain a professional demeanor at all times and interact professionally with fellow students, internship site employees and clientele, administration and faculty.
3. The ability to adhere to a professional dress code acceptable to the profession and as set by Western Tech.
4. The ability to listen, understand, and communicate ideas presented through spoken words and sentences.
5. The ability to see detail at close range (within a few feet of the observer).
6. The ability to match or detect differences between colors, including shades of color and brightness.
7. Sufficient flexibility to bend, stretch, twist, or reach with your body, arms, and/or legs.
8. Sufficient finger dexterity and steadiness to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble very small objects.
9. Sufficient manual dexterity and steadiness to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.
10. The ability to coordinate two or more limbs while sitting, standing, or lying down.
11. The ability to use your abdominal and lower back muscles to support part of your body repeatedly or continuously over time without 'giving out' or fatiguing.
12. The ability to lift up to 50 lbs.
13. The ability to climb both step ladders and extension ladders.
14. The ability to work in high places (i.e. roof tops).
15. The ability to utilize computers and perform basic computer functions with programs such as Word, Outlook, and Excel.
16. Must be able to utilize E-Books.

Western Tech does not discriminate in admission or access to programs on the basis of any characteristic protected by law, including disability. Persons with disabilities are eligible for admission, as long as, they can carry out classroom, laboratory and internship assignments; pass written, oral and practical examinations; and meet all of the requirements of the program and generally accepted requirements of the profession, with or without reasonable accommodation. Western Tech will make reasonable accommodations for disabilities. Applicants and students who require accommodation should contact the Campus President and submit a written request for accommodation.

## **AOS DEGREE IN REFRIGERATION AND HVAC TECHNOLOGY**

### **COURSES 1-28**

### **1488 CLOCK HOURS**

### **60.0 SEMESTER CREDIT UNITS (TWC & THECB)**

### **60.0 SEMESTER CREDIT HOURS (ACCS)**

### **EDUCATIONAL OBJECTIVES**

The Associate of Occupational Studies Degree in Refrigeration and HVAC Technology program trains students in basic refrigeration principles, basic electricity, air conditioning, and sheet metal work. Students receive additional training in commercial refrigeration, commercial air conditioning, motor controls, and ice machines. The Refrigeration and HVAC Technology program incorporates modern efficiency concepts that tie in energy sustainability and weatherization. This program incorporates energy management, thermography, and energy auditing concepts along with basic solar electricity (photovoltaics) and wind power.

The Refrigeration and HVAC Technology program prepares graduates for entry level positions as refrigeration technicians, air conditioning technicians, maintenance technicians, or sheet metal workers. With the special training, the graduates have the possibility for rapid advancement due to their knowledge of high efficiency systems and concepts.

### **CERTIFICATIONS**

- Environmental Protection Agency (EPA) -608
- R-410 Refrigerant Safety Certification
- HVAC Excellence Electrical Assessment Exam
- NABCEP Entry Level Solar Exam
- Texas Dept. of Licensing & Regulations Registered Technician License\*

**Note: Students will have to pass a background check in order to register with the Texas Dept. of Licensing & Regulations.**

### **TIME CODES**

The following time code is used on all courses to illustrate the amount of time students will spend in class or lab per course and the subsequent number of credit hours awarded.

44/48/4.0

Theory hours per course /

Lab hours per course /

Semester Credit Hours

### **NOTE:**

The sequential order of the classes may differ from that included in the program outline below.

PROGRAM OUTLINE: ASSOCIATE OF OCCUPATIONAL STUDIES IN REFRIGERATION  
AND HVAC TECHNOLOGY

#	COURSE	TITLE	HRS.	THEORY /LAB	PERCENTAGE ON CAMPUS/ ONLINE	SEMESTER CREDIT UNITS
1	TF-101	Technical Fundamentals	48	32/16	80/20	2.5
2	TF-102	Technical Fundamentals Lab	48	0/48	100/0	1.5
3	AM-101	Applied Math I	48	32/16	80/20	2.5
4	EL-102	Basic Electricity	48	32/16	80/20	2.5
5	EL-103	Basic Electricity Lab	48	0/48	100/0	1.5
6	AM-102	Applied Math II	48	32/16	80/20	2.5
7	FR-103	Fundamentals of Refrigeration	48	32/16	80/20	2.5
8	FR-104	Fundamentals of Refrigeration Lab	48	0/48	100/0	1.5
9	BWE-104	Business Writing Essentials	48	16/32	80/20	2.0
10	AC-106	Air Conditioning	48	32/16	80/20	2.5
11	AC-107	Air Conditioning Lab	48	0/48	100/0	1.5
12	GS-105	General Sheet Metal	48	16/32	80/20	2.0
13	HS-109	Heating Systems	48	32/16	80/20	2.5
14	HS-110	Heating Systems Lab	48	0/48	100/0	1.5
15	RM-207	Refrigerant Management I	48	16/32	80/20	2.0
16	ACC-201	Commercial Air Conditioning	48	32/16	80/20	2.5
17	ACC-202	Commercial Air Conditioning Lab	48	0/48	100/0	1.5
18	RM-208	Refrigerant Management II	48	16/32	80/20	2.0
19	RC-203	Commercial Refrigeration	48	32/16	80/20	2.5
20	RC-204	Commercial Refrigeration Lab	48	0/48	100/0	1.5
21	IM-204	Ice Machines	48	16/32	80/20	2.0
22	HEM-206	Electric Motors and Controls	48	32/16	80/20	2.5
23	HEM-207	Electric Motors and Controls Lab	48	0/48	100/0	1.5

24	REA-210	Renewable Energy Applications	48	16/32	80/20	2.0
25	HDI-209	Diagnostics and Installation Procedures	48	32/16	80/20	2.5
26	HDI-210	Diagnostics and Installation Procedures Lab	48	0/48	100/0	1.5
27	HUCOMM	Human Communication	48	16/32	80/20	2.0
28	HIN-209	Internship	192	16/16/160		5.0
<b>Total Hours- AOS Degree in Refrigeration and HVAC Technology</b>			<b>1488</b>	480/848/160		<b>60</b>

## **COURSE 1**

### **TF-101**

#### **TECHNICAL FUNDAMENTALS**

**32/16/2.5**

During this first course students will be oriented in their career field. Students will cover basic tools use in the industry, they will cover basic safety procedures, and cover a ladder safety written exam. Students will learn the science behind the industry such as the laws of Thermodynamics and heat transfer, Boyle's Law, Charles' Law, and Dalton's Law.

## **COURSE 2**

### **TF-102**

#### **TECHNICAL FUNDAMENTALS LAB**

**0/48/1.5**

This course is the lab portion of TF-101 Technical Fundamentals. During this course students will be required to perform the following competencies:

1. Utilize Learning Resource Center
2. Swage and flare copper and aluminum tubing.
3. Braze copper to copper, aluminum to aluminum, copper to steel, and steel to steel.
4. Read and interpret special tools: manifold gauges, volt, Ohm and amp meters.
5. Determine common start and run windings of a hermetic compressor.
6. Draw a schematic and wire a 115-volt hermetic compressor.

## **COURSE 3**

### **AM-101**

#### **APPLIED MATHEMATICS I.**

**32/16/2.5**

The Applied Mathematics course will re-familiarize the student with basic applied mathematics functions and concepts as they apply to Refrigeration and HVAC Technology. The student will work on decimals, common fractions, ratios and proportions, and percentages as they apply to the HVAC field.

Upon completion of this course, the student will be able to do the following:

1. Perform the basic arithmetic operations of addition, subtraction, multiplication, and division of whole numbers
2. Perform the basic arithmetic operations using common fractions and decimal fractions
3. Calculate simple percentages
4. Calculate discount, profit and loss, and commissions

## **COURSE 4 EL-102**

### **BASIC ELECTRICITY**

**32/16/2.5**

#### **PREQUISITE: TF-101, TF-102**

In this course, students will learn the basics of electricity. Students will start with the movement of electrons, conductors, insulators, direct and alternating current, and electrical units of measurement. Also included is a description of the electrical circuit, making electrical measurements, Ohm's law, series and parallel circuits, electrical power, magnetic fields, inductance, transformers, capacitance, impedance, sine waves, and using electrical

measuring instruments. The course also covers wire sizes, circuit protection devices, and semiconductors or solid-state components.

## **COURSE 5**

### **EL-103**

#### **BASIC ELECTRICITY**

**0/48/1.5/**

#### **PREREQUISITE:**

**TF-101, TF-102**

**This course is the lab portion of EL-102 Basic Electricity. In this course the students will be required to perform the following competencies:**

1. Identify and name basic components in an electrical circuit.
2. Wire basic series circuits.
3. Wire basic parallel circuits.
4. Read and interpret pictorial and schematic diagrams.

## **COURSE 6**

### **AM102**

#### **APPLIED MATHEMATICS II**

**34/16/2.5**

The Applied Mathematics course will become more complex and improve the student's ability to navigate through complex formulas in this field and touch on a few other Refrigeration, Heating, Ventilation, and Air Conditioning business.

Upon completion of this course, the student will be able to do the following

1. Calculate interest and taxes
2. Calculate and convert between English linear and metric measurements
3. Calculate ratios and proportions
4. Use formulas for measuring area, volume, and horsepower
5. Calculate circuit parameters using Ohm's Law

## **COURSE 7**

### **FR-103**

#### **FUNDAMENTALS OF REFRIGERATION**

**32/16/2.5**

#### **PREREQUISITE:**

**EL-102, EL-103**

This course will cover the basic refrigeration cycle and the four basic components of the refrigeration system. The refrigeration cycle is the basis of all refrigerating equipment and an integral part of the program. The different types of compressors, condensers, evaporators, and metering devices will also be covered.

## **COURSE 8**

### **FR-104**

#### **FUNDAMENTALS OF REFRIGERATION LAB**

**0/48/1.5**

#### **PREREQUISITE:**

**EL-102, EL-103**

Students will perform lab projects on refrigeration trainers and be able identify components and observe the refrigeration cycle.

Upon completion of this course, the student will be able to:

1. Understand and explain the refrigeration cycle.
2. Understand and identify the basic components in the refrigeration cycle.
3. Identify the different types of compressors, evaporators, condensers, and metering devices.
4. Evacuate and charge a refrigeration system.
5. Diagnose and repair a domestic refrigerator.

## **COURSE 9**

### **BWE-104**



## **BUSINESS WRITING ESSENTIALS**

**16/32/2.0**

The Business Writing Essentials course will teach students the skills required to write business memos, business letters, and technical reports and to do research when necessary. Students will prepare a resume that can be used throughout their program. Team and individual effort will be required for a student to be successful in this course. A formal oral presentation will be required.

The student can expect 10 hours of homework during this course. Upon completion of this course, the student will be able to:

1. Produce memos, reports, and proposals.
2. Produce a resume.
3. Use the Learning Resource Center.
4. Use proper language, organization, and citation styles to produce written communication.
5. Use proper language, organization, and speaking styles in oral communication.
6. Use peer review and peer editing teamwork to produce polished oral and written communication.

## **COURSE 10**

**AC-106**

### **AIR CONDITIONING**

**32/16/2.5**

**PREREQUISITE: FR-103, FR-104**

The refrigeration cycle as applied to air conditioning will be covered. Students will be able to define comfort and understand basic Psychrometric chart. The design and theory of operation of air conditioning systems including direct expansion evaporators, sensors and dehumidification will be explained.

Practical work experience consisting of general servicing, component replacement, schematic drawing and troubleshooting of conventional and computer-controlled air conditioners will also be included.

## **COURSE 11**

**AC-107**

### **AIR CONDITIONING LAB**

**0/48/1.5**

**PREREQUISITE: FR-103, FR-104**

This is the lab portion of AC-106. Students will be required to perform the following competencies:

1. Identify components on split air conditioning system.
2. Identify components on packaged air conditioning system.
3. Properly connect refrigeration gauges on air conditioning systems.
4. Check system pressures and temperatures.
5. Define wet-bulb and dry-bulb temperatures.
6. Use and understand the purpose of a sling psychrometer and digital psychrometer.

## **COURSE 12**

**GS- 105**

### **GENERAL SHEET METAL**

**16/32/2.0**

Upon the completion of this course, the student will have acquired the knowledge to fabricate and install both residential and commercial sheet metal ducting systems. Sheet metal fabrication will give the student the ability to produce the basic requirements needed in the sheet metal industry

The proper use of tools and safe handling of sheet metal will be emphasized. Upon completion of this course, the student will be able to:

1. Produce a Pittsburgh Lock by hand and by machine.
2. Produce drives by hand and by machine.
3. Produce "S" cleats by hand.
4. Produce 90-degree elbow with a curved back and throat.

## **COURSE 13**

### **HS-109**

#### **HEATING SYSTEMS**

**32/16/2.5**

**PREREQUISITE: EL-102, EL-103**

In this course the student will be taught various types of heating systems in use today. Installation and repair techniques will be discussed and demonstrated with emphasis on gas-fired, electric systems. Students will learn about safety consideration when working with gas furnaces. Electric heating and hydronic heating will also be covered.

## **COURSE 14**

### **HS-110**

#### **HEATING SYSTEMS LAB**

**0/48/1.5**

**PREREQUISITE: EL-102, EL-103**

This course is the lab portion of HS-109. Students will be required to perform the following competencies:

1. Cut and thread black pipe.
2. Adjust gas valve pressure.
3. Perform a CO check.
4. Adjust a thermostat heat anticipator.
5. Troubleshoot standing pilot and high efficiency furnaces.

## **COURSE 15**

### **RM-207**

#### **REFRIGERANT MANAGEMENT I**

**16/32/2.0**

**PREREQUISITE: FR-102, FR-103**

According to Section 608 of the Clean Air Act of 1990, the Environmental Protection Agency (EPA), has made it a requirement that persons servicing or disposing of air-conditioning and refrigeration equipment be certified. It also limits the sale of refrigerants to certified technicians. In this course, the student learns the regulations, and techniques and equipment necessary to pass the certification examination.

## **COURSE 16**

### **ACC-201**

#### **COMMERCIAL AIR CONDITIONING**

**32/16/2.5/2.5**

**PREREQUISITE: AC-106, AC-107**

This course will cover commercial air conditioning systems including high pressure, low pressure, and absorption chilled water systems. Students will also cover cooling towers, pumps, commercial package units, variable refrigerant flow, and variable air volume systems.

## **COURSE 17**

### **ACC-202**

#### **COMMERCIAL AIR CONDITIONING LAB**

**0/48/1.5**

**PREREQUISITE: AC-106, AC-107**

This course is the lab portion of ACC-201. The students will be required to perform the following competencies:

1. Identify major components of a chilled water system
2. Explain the proper operation, maintenance, and troubleshooting procedures of chilled water systems
3. Perform start-up and troubleshoot a scroll chilled water system

## **COURSE 18**

### **RM-208**

#### **REFRIGERANT MANAGEMENT II**

**16/32/2.0**

This course is the second part of refrigerant management. Students will review safety procedures and proper

operating conditions of R-410A refrigerant. Students will take the R-410A safety Certification Exam.

**COURSE 19**  
**RC-203**  
**COMMERCIAL REFRIGERATION**  
**32/16/2.5**  
**PREREQUISITE: FR-103, FR-104**

In this course students will cover commercial refrigeration systems including single compressor and parallel compressor, or supermarket rack systems. The design and theory of operation of reach-in, walk-in freezers, and coolers will be taught. An in-depth study of controls to regulate commercial systems completes this stage.

**COURSE 20**  
**RC-204**  
**COMMERCIAL REFRIGERATION LAB**  
**0/48/1.5**  
**PREREQUISITE: FR-103, FR-104**

This course is the lab portion RC-203. Students will be required to perform the following competencies:

1. Define and measure superheat, sub-cooling, and compressor efficiency.
2. Pump down a refrigeration system and perform component removal.
3. Diagnose, set, and install pressure devices.
4. Diagnose, set, and install defrost time clocks.

**COURSE 21**  
**IM-204**  
**ICE MACHINES**  
**16/32/2.0**  
**PREREQUISITE:FR-103, FR-104**

This course will provide the student with the general knowledge to diagnose and repair ice machines. Installation and service procedures will be presented and discussed. Proper piping practices will be taught that will enable the student to properly install a remote condenser ice maker. Practical work will consist of diagnosing electrical circuits, refrigerant charge, water circuit and other malfunctions to ice makers. Commercial types of ice makers commonly found in the industry will contain electromechanical as well as electronic controls.

Upon completion of this course, the student will be able to:

1. Demonstrate the sequence of operation on various ice machines.
2. Demonstrate proper ice machine cleaning procedures on various ice machines.
3. Demonstrate proper ice machine sanitizing procedures on various ice machines.
4. Operate, diagnose, and repair various ice machines of various sizes and manufacturers.

**COURSE 22**  
**HEM-206**  
**ELECTRIC MOTORS AND CONTROLS**  
**32/16/2.5**  
**PREREQUISITE: EL-102, EL-103**

This course teaches the theory, operation, installation and maintenance of electric motors and electric motor controllers. Three phase compressors and three phase starting circuits. Students will learn about and train on variable frequency drive trainers where they will learn to program and troubleshoot VFD' s. Practical work projects will include various motors, controls, and control panels.

**COURSE 23**  
**HEM-207**  
**ELECTRIC MOTORS AND CONTROLS LAB**  
**0/48/1.5**  
**PREREQUISITE:**  
**EL-102, EL-103**

This course is the lab portion of HEM-206. Students will be required to perform the following competencies:

1. Wire stop-start switches with line voltage controls.
2. Install and operate 120 volt on-delay timer with motor control.
3. Wire sequence controls.
4. Identify and wire three-phase wye and delta motor circuit connections.
5. Program and troubleshoot Variable Frequency Drive's

## **COURSE 24**

### **REA-210**

#### **RENEWABLE ENERGY APPLICATIONS**

**16/32/2.0**

This course covers basic renewable energy platforms in distributed power generation and colrunon configurations, specifically in photovoltaics (solar energy). Students will cover basic design principles and installation procedures. At the end of this course, students will take the NABCEP entry level exam. The NABCEP entry level exam is recognized industry wide as a prerequisite for industry certifications and aids in qualification and competency of industry professionals.

Upon completion of this course, the student will be able to:

1. Identify the major components of a Photovoltaic system
2. Differentiate between Photovoltaic power generating platforms
3. Apply design concepts in series and parallel configurations
4. Develop a working knowledge in mechanical structures required for Photovoltaic installations
5. Understand key concepts in National Electrical Code Articles related to electrical safety and Photovoltaics.

## **COURSE 25**

### **HDI-209**

#### **DIAGNOSTICS AND INSTALLATION PROCEDURES**

**32/16/2.5.**

**PREREQUISITE: RC-203, RC-204**

This course introduces the student to the latest and most accurate diagnostic procedures used in the field as it applies to electrical, mechanical, and air flow problems. The course will cover low, medium, and high temperature systems used in heating, ventilation, air conditioning, and refrigeration industry. Electrical diagrams will be shown, and pressure temperature relationships will be explained.

## **COURSE 26**

### **HDI-210**

#### **DIAGNOSTICS AND INSTALLATION PROCEDURES LAB**

**0/48/1.5**

**PREREQUISITES: RC-203, RC-204**

This course is the lab portion of HDI-210. Students will be required to perform the following competencies:

1. Demonstrate proper leak testing, vacuum, and charging methods.
2. Measure and adjust superheat and sub-cooling.
3. Demonstrate proper field wiring.
4. Demonstrate mechanical techniques on a variety of equipment.

## **COURSE 27**

### **HUCOMM**

#### **HUMAN COMMUNICATION**

**16/32/2.0**

The Human Communication course serves to introduce the student to basic principles of human communication and apply those principles of effectively communication in the work environment. This course is designed to develop the students written and verbal communication. This course is designed to address the need employers have for skilled employees who are proficient at problem-solving, who possess communication and soft skills. The student will be required to work on

developing their soft skills and will be required to participate in group discussion, group presentations, and individual presentations, and individual presentation on real-world practical applications.

Upon completion of this course, the student will be able to do the following:

7. Discuss the importance of human relations to organization and careers.
8. Discuss ways to behave ethically at work.
9. Describe characteristics and roles of effective team members.
10. Explain the importance of workplace etiquette.
11. Describe ways to improve written and verbal communication.  
Describe ways to improve soft skills in the workplace

**COURSE 28**  
**HIN-209**  
**INTERNSHIP**  
**16/16/160/5.0**  
**PREREQUISITE:**  
**HDI-209, HDI-210**

The internship program allows the student to experience situations which occur during the daily operation of a working shop as students are placed with a local employer and apply the knowledge and skills learned in the classroom and shop/lab. Participation in the internship program requires that the student satisfactorily completes all previous program courses.

The student will be placed in an approved HVAC/R repair, service or maintenance facility without monetary compensation. The internship coordinator will supervise each student 's progress during the 176-clock hour internship. Supervision consists of weekly student evaluations and scheduled/unscheduled weekly site visits. A weekly evaluation will be completed by the intern site manager. Students will be required to attend school one day per week for a classroom session during the internship experience for a total of 32 classroom hours. During this class period the intern coordinator will review the student's weekly evaluation as well as any recommendations made by the site manager or coordinator. Time will be taken to review any deficiencies suited by the site manager. A study program will be established by the extern coordinator and progress will be monitored each week during the class session. The student must successfully meet each requirement of the internship in order to qualify for graduation.

Upon completion of this course, the student will be able to:

1. Demonstrate entry-level competency of the HVAV/R skills identified under the Graduate Warranty Skills initiative.
2. Demonstrate the ability to work as a team member during the internship experience.
3. Understand the responsibilities and duties of the HVAC/R technician in the workplace.
4. Workforce Skills Development Training will also be included

**ASSOCIATE OF APPLIED SCIENCE IN ELECTRONICS  
ENGINEERING TECHNOLOGY**  
Available at 9451 Diana Drive Campus



Individuals portrayed in photos are actual students, graduates or employees of Western Tech.

**CAREER OPPORTUNITIES IN ELECTRONICS ENGINEERING TECHNOLOGY**

Electrical and Electronics Engineering Technicians held about 137,000 jobs in 2016. Electrical and electronics engineering technicians help engineers design and develop computers, communications equipment, medical monitoring devices, navigational equipment, and other electrical and electronic equipment. They often work in product evaluation and testing, and use measuring and diagnostic devices to adjust, test, and repair equipment. They are also involved in the manufacture and deployment of equipment for automation. Electrical and electronics engineering technicians work closely with electrical engineers. They work primarily in manufacturing settings, engineering services, the federal government, research-and-development laboratories, and the utilities industry. Employment of electrical and electronics engineering technicians is projected to grow 2 percent from 2016 to 2026, slower than the average for all occupations. Employment of these technicians is projected to decline in many manufacturing industries and in the federal government. 2016 to 2026. (Source: D.O.L. Occupational Outlook Handbook, Friday, April 12, 2019).

<https://www.bls.gov/ooh/architecture-and-engineering/electrical-and-electronics-engineering-technicians.htm>

**Labor Market Information (2016 thru 2026 Projections)**

**Texas Labor Market Information**

Texas Employment 2016:	15,108
Projected Texas Employment 2026:	16,803
Absolute Change 2016-2026:	1,695
Percent Change 2016-2026:	11.22%
Average Hourly Wage 2017:	\$31.51
Average Openings per year due to Replacement:	510
Average Openings per year due to Growth:	1,520

**National Labor Market Information**

National Employment 2016:	137,000
Projected National Employment 2026:	139,800
Absolute Change 2016-2026:	2,700
Percent Change 2016-2026:	2%
Average Hourly Wage 2018:	\$30.93
Average Openings per year due to Replacement:	NA
Average Openings per year due to Growth:	NA

Source: The Labor Market & Career Information Department (LMCI) of the Texas Workforce Commission  
<https://texaslmi.com/>

## **ENTRANCE REQUIREMENTS FOR APPLICANTS PURSUING THE ELECTRONICS ENGINEERING TECHNOLOGY PROGRAM**

### **Hybrid Program/Courses**

Students who enroll in the Associate of Applied Science in Electronics Engineering Technology program will receive training through a hybrid delivery system, that is, a portion of their training is provided in a combination of classes being offered both on-ground and online. Specifically, this program will provide 80% of the training and education on-ground and 20% online.

Hybrid courses are web-based and delivered over the Internet using Western Tech's Learning Management System (Canvas). The system provides both synchronous and asynchronous tools used for on-line delivery. The on-line content of the course is covered by using a variety of on-line educational activities such as discussion boards, chat sessions, conference sessions, case studies, lab simulations, and quizzes. In a hybrid program, the face to face schedule is set on specific dates and times of the week, while the on-line portion of the class is organized for the student to have the flexibility to complete the on-line classroom activities based on their personal/work schedules.

Regardless of the mode of delivery, students entering this program can expect the same level of support as on-ground students to include tutoring services, technical support, employment preparation and assistance with job leads, and access to the school's library.

**Participation in online classes is vital to successful program completion. Students are provided with a computer that meets the requirements of the hybrid program. Students must have Internet access from somewhere outside the school in order to fulfill course requirements and succeed in their classes. In addition, students must have a minimum level of comfort with technology, as they may find themselves needing to access course work online for as much as half of the time the class is in session.**

For that reason, all prospective students considering enrollment in any of the hybrid programs are required to take a short "Suitability for Distance Education" survey before they enroll in school. The survey is designed to identify the prospective student's level of proficiency in the use of technology. Students can expect support in the form of training tailored to their identified needs so that they can handle the demands of the Learning Management System that houses much of their work.

## **WESTERN TECH OFFERS CERTIFICATION TESTING TO ITS ELECTRONICS ENGINEERING TECHNOLOGY GRADUATES**

### **ISCET Certifications**

ISCET, The International Society of Certified Electronics Technicians was founded in 1965. It is a professional certification designed to measure the degree of theoretical knowledge and technical proficiency of practicing technicians. All Western Tech students enrolled in the Electronics Engineering Technology program are encouraged to take the Associate- Level CET examination upon completion of basic electronic courses, Industrial Journeyman CET exam upon completion of ELMT 2333. The Associate CET covers basic electronics, math, DC and AC circuits, transistors and diode circuits, and troubleshooting. While the Journeyman exams cover detailed subjects in each of the available specialties of Industrial, Communications, Bio-medical Equipment, Consumer, Radar, and Computers.

### **ETA Certifications**

ETA is a not-for-profit member association that serves technology-related industries by providing individual certifications per the ISO 17024 standard for certification bodies. ETA works closely with top industry professionals to provide industry-backed certifications that fill the needs of ETA's members and electronics-related fields. You can find ETA certifications used by many different companies in many different fields around the world. With an ETA certification, you can work in areas such as fiber optics, RF communications, electronics, biomedical, renewable energy, smart home, photonics and precision optics, information technology, and more! All Western Tech students enrolled in the Electronics Engineering Technology program are encouraged to take the Associate-Level CET examination upon completion of basic electronic courses.

### **FOA Certification**

Fiber Optic Association offer certifications to recognize acquired skills in the area of fiber optic technology and equipment. Recipients demonstrate knowledge of fiber optics systems, and installations as well as skills in the use of optical test equipment, fusion splicers, and optical connector installation. Wester Tech students will be certified as Certified Fiber Optics Technician by FOA upon successful completion of LOTT 1301- Introduction to Fiber Optics.

### **IPC Certification**

IPC provides the internationally recognized JSTD-001 Hand soldering certification which demonstrates the understanding of industry standards for high-reliability soldering as well as demonstrated skills in the assembly and soldering of wires, terminals, Through-hole components, and surface-mount components. Wester Tech students will be certified JSTD-001 from IPC upon successful completion of CETT1304 – High Reliability Soldering.

### **COMP TIA Certifications**

Comp TIA, the Computing Technology Industry Association, represents over 7,500 computer hardware and software manufacturers, distributors, retailers, system integrators, and Internet companies. Comp TIA certifies

information technology and service professionals with its widely adopted certification programs. Western Tech students are encouraged to take the A+ Certification examination. The A+ Certification assesses basic computer service and repair technology skills. Students are also encouraged to take the Network+ Certification examination upon successful completion of ITNW1358 – Network+.

## **TECHNICAL STANDARDS AND ESSENTIAL FUNCTIONS**

Western Tech's Electronic Engineering Technology program is a hybrid program. It has established technical standards and essential functions for the program as more fully listed below. The ability to meet these standards and essential functions, with or without reasonable accommodation, is required in order to complete the program satisfactorily. Please review the following technical standards and essential functions carefully.

1. The ability to understand course materials and maintain a certain grade/performance level that meets the set academic requirements.
2. The ability to maintain a professional demeanor at all times and interact professionally with fellow students, internship site employees and clientele, administration and faculty.
3. The ability to adhere to a professional dress code acceptable to the profession and as set by Western Tech.
4. The ability to listen, understand, and communicate ideas presented through spoken words and sentences.
5. The ability to see details at close range (within a few feet of the observer).
6. The ability to match or detect differences between colors, including shades of color and brightness.
7. Sufficient finger dexterity and steadiness to make precisely coordinated movements of the fingers of one or both hands to grasp, manipulate, or assemble objects.
8. Sufficient manual dexterity and steadiness to quickly move your hand, your hand together with your arm, or your two hands to grasp, manipulate, or assemble objects.
9. Performing physical activities that require considerable use of your arms and legs moving your whole body, such as climbing, lifting, balancing, walking, stopping, and handling of materials.
10. The ability to use computers and computer systems (including hardware and software) to program, set up functions, enter data, or process information.
11. The ability to utilize computers and perform basic computer functions with programs such as Word, Outlook, and Excel.
12. Must be able to utilize E-Books.

Western Tech does not discriminate in admission or access to programs on the basis of any characteristic protected by law, including disability. Persons with disabilities are eligible for admission, as long as, they can carry out classroom, laboratory and internship assignments; pass written, oral and practical examinations; and meet all of the requirements of the program and generally accepted requirements of the profession, with or without reasonable accommodation. Western Tech will make reasonable accommodations for disabilities. Applicants and students who require accommodation should contact the Campus President and submit a written request for accommodation.

## **AAS DEGREE IN ELECTRONICS ENGINEERING TECHNOLOGY COURSES 1-20 1524 CLOCK HOURS**

**65.0 SEMESTER CREDIT UNITS (TWC & THECB)**

**65.0 SEMESTER CREDIT HOURS (ACCSC)**

## **EDUCATIONAL OBJECTIVES**

The graduate of this program will gain valuable knowledge in DC/AC circuits, Solid State circuits, Digital circuits, PLCs, Industrial Electronics, Basic Robotic Operation, Pneumatics, Fiber and Soldering. In addition to the theoretical knowledge gained in these areas, the graduate will gain valuable hands-on experience in a diverse set of technical areas. Specifically, the student will learn about schematic reading, circuit analyzing and troubleshooting electronic systems, fiber optic splicing and termination techniques, soldering, program PLCs, basic knowledge of Pneumatics and Robotics. The experience gained from this program will prepare the student for the following professional certification examinations:

The ISCET Associate Level Certified Electronics Technician (CET), ISCET Journeyman in Industrial, the Fiber Optics Association's Certified Fiber Optics Technician, CompTIA A+ and Network+ Certification, and High Reliability Hand Soldering IPC J Standard 001. The graduate of this program will be qualified for entry-level employment as Electronic Engineering Technician, Manufacturing Technician, Automation Technician, Test Technician, Electronics Repair Technician, Bench Technician, Utilities Electronic Technician, Fiber-Optic Technician, and Repair Technician.



**TIME CODES**

The following time code is used on all courses to illustrate the amount of time students will spend in class or lab per course and the subsequent number of credit hours awarded.

44/48/4.0/3.0

Theory hours per course / Lab hours per course /

Semester Credit Units (TWC & THECB)/ Semester Credit Hours (ACCSC)

**NOTE**

The sequential order of classes may differ from that included in the program outline below.

**PROGRAM OUTLINE: ASSOCIATE OF APPLIED SCIENCE IN ELECTRONICS  
ENGINEERING TECHNOLOGY**

#	COURSE	TITLE	CLOCK HOURS (LEC/LAB/ TOTAL)	PERCENTAGE ON CAMPUS/ ONLINE	TWC/ THECB SCU	ACCSC SCH
1	MATH 1314	College Algebra and Trigonometry	48/0/48	80%/20%	3.0	3.0
2	CPMT 1405	IT Essentials: PC Hardware and Software	32/64/96	80%/20%	4.0	4.0
3	PHYS 1301	College Physics	32/64/96	80%/20%	4.0	4.0
4	ITNW 1359	Network+	48/0/48	80%/20%	3.0	3.0
5	ENGL 1301	English Composition	48/0/48	80%/20%	3.0	3.0
6	CETT 1403	DC Circuits	32/64/96	80%/20%	4.0	4.0
7	SCOM 1211	Fundamentals of Human Communication	48/0/48	80%/20%	3.0	3.0
8	CETT 1405	AC Circuits	32/64/96	80%/20%	4.0	4.0
9	CETT 1425	Digital Fundamentals	32/64/96	80%/20%	4.0	4.0
10	CETT 1441	Solid State Circuits	32/64/96	80%/20%	4.0	4.0
11	CETT 2339	Amplifiers	32/64/96	80%/20%	4.0	4.0
12	PSYC 2301	General Psychology	48/0/48	80%/20%	3.0	3.0
13	ELMT1301	Programmable Logic Controllers	16/32/48	80%/20%	2.0	2.0
14	CETT 1304	High Reliability Soldering	16/32/48	80%/20%	2.0	2.0
15	LOTT 1301	Introduction to Fiber Optics	16/32/48	80%/20%	2.0	2.0
16	ELMT 2239	Advanced Programmable Logic Controllers	16/32/48	80%/20%	2.0	2.0
17	RBTC 2339	Robot Programming and Diagnostics	16/32/48	80%/20%	2.0	2.0
18	ELMT 1405	Pneumatics	16/32/48	80%/20%	2.0	2.0
19	ELMT 2333	Industrial Electronics	32/64/96	80%/20%	4.0	4.0
20	EECT 2288	Professional Development/ Internship	16/32/180/ 228	80%/20%	6.0	6.0
<b>Total Hours – AAS Degree in Electronics Engineering Technology</b>			<b>608/736/180/ 1524</b>		<b>65.0</b>	<b>65.0</b>

\*\*All EET students pursuing the AAS Degree shall be required to complete at

least two (2) industry certifications in their field of study prior to course twenty (20).

**COURSE 1  
MATH 1314  
COLLEGE ALGEBRA  
AND TRIGONOMETRY  
48/0/3.0/3.0**

The student will study relations and functions, including polynomial, rational, exponential, logarithmic, and special functions. Other topics include systems of equations, trigonometric functions and their applications.

Upon completion of this course, the student will be able to:

1. Use scientific notation.
2. Perform operations on and factor polynomials.
3. Graph, solve and apply linear and quadratic equations.
4. Perform operations on and solve rational equations.
5. Calculate and define ratio and proportions.
6. Solve systems of linear equations.
7. Analyze functions.
8. Graph and analyze trigonometric functions.

**COURS 2  
CPMT 1405  
IT ESSENTIALS: PC HARDWARE  
AND SOFTWARE  
32/64/4.0/4.0**

An introduction to the computer hardware and software skills needed to help meet the growing demand for entry-level information and communication technology (ICT) professionals.

Upon completion of this course, the student will be able to:

1. Explain the internal components of a computer
2. Assemble a computer system
3. Install an operating system
4. Install/connect associated peripherals
5. Troubleshoot using system tools and diagnostic software
6. Use simulation and virtual software to investigate networking concepts and analyze network behavior

**COURSE 3  
PHYS 1301  
COLLEGE PHYSICS I  
32/64/4.0/4.0**

The student will learn the science of matter and energy and the interactions between them through traditional fields such as mechanics and electromagnetism. It will cover concepts and applications of units and vectors; motion in one and two

dimensions; Newton's laws; energy; and, basics of electricity and electromagnetism. Includes Lab.

Upon completion of this course, the student will be able to:

1. Understand units and conversions.
2. Explain one and two-dimensional motion.
3. Apply the principles of Newton's Laws.
4. Analyze equations of force, work, and energy and apply them.
5. Evaluate simple electric circuits using Ohm's Law.

**COURS 4  
ITNW 1358  
NETWORK+  
48/0/3.0/3.0**

Assists individuals in preparing for the Computing Technology Industry Association (CompTIA) Network+ certification exam and career as a network professional.

Upon completion of this course, students will be able to do the following:

1. Identify and define terminology, hardware, and software components of computer networks.
3. Utilize equipment, protocols, and topologies to differentiate between various network systems
5. Demonstrate skills in installing network hardware, software, and cable
6. Troubleshoot network connectivity; configure network protocol
7. Install and configure network client software

**COURSE 5  
ENGL 1301  
COMPOSITION I  
48/0/3.0/3.0**

The student, focusing on the academic essay, will study the principles and techniques of expository and persuasive composition, including drafting, revising, and editing in paragraphs and essays and will produce a resume.

Upon completion of this course, the student will be able to:

1. Use paragraphs as building blocks of essays.
2. Write an expository essay.
3. Explain the means of persuasion and strategies for evaluating evidence.
4. Write a persuasive essay.

5. Demonstrate technical writing skills and written concise communication.
6. Distinguish among academic writing, writing for work, and informal writing.
7. Read critically and make editorial suggestions about what they have read.
8. Produce a personal resume.
9. Utilize the services of the Learning Resource Center.

**COURSE 6**  
**CETT 1403**  
**DC CIRCUITS**  
**32/64/4.0/4.0**

During the first several days of class, the students will receive a general school and program orientation, to include training on how to utilize the Learning Resource Center. The student will learn the effects of resistance, voltage, current, and power within an electrical circuit. This includes the study of Ohm's Law, resistors, series, parallel and series- parallel in resistive DC sources. Additionally, the student is exposed to the practical application of this theory in comprehensive laboratory exercises. During this course the student will also study the physics behind magnetism and electromagnetism as it applies to the next course on AC.

Upon completion of this course, the student will be able to:

1. Identify and use resistor color codes;
2. Use Ohm's law to calculate basic resistive circuits;
3. Identify and construct series resistive circuits;
5. Identify and construct parallel resistive circuits;
6. Use a digital multimeter to check the value of a resistor;
7. Identify a series-parallel resistive circuit;
8. Identify and construct voltage and current divider circuits;
9. Calculate the values needed in analyzing a circuit that uses DC

**COURSE 7**  
**SCOM 1211**  
**Fundamentals of Human Communication**  
**48/0/0/3.0/3.0**

Study of human communication as a process. Overview of the principals of interpersonal, small group and presentation

skills essential to effective social, business, and professional interaction. Emphasis on examining the role of self-concept, perception, culture, verbal, nonverbal, and written communication. Applying effective writing principles and strategies for understanding and presenting information for various purposes and audiences.

Upon completion of this course, the student will be able to:

1. Identify the components of communication and its barriers.
2. Analyze the audience and describe the criteria for choosing communication media.
3. Communicate ethically and avoid potential legal consequences of communication.
4. Plan the purpose, content and organization of message.
5. Proofread message, revise for content, style and correctness.
6. Prepare and deliver a presentation.
7. Apply the do's and don'ts of a proper interview.

**COURSE 8**  
**CETT 1405**  
**AC CIRCUITS**  
**32/64/4.0/4.0**

The scope of this course includes RC time constants, capacitor and inductor characteristics. During laboratory exercises, students will measure voltage and current in inductive circuits with AC power applied. In addition, students are taught the common use of laboratory equipment such as oscilloscopes and signal generators. Students will perform comprehensive laboratory exercises to solidify the theoretical aspects taught during the course. In addition, the scope of this course will include the combined effects of inductance, capacitance and resistance in AC and DC circuits. Disciplines also presented are RLC circuit analysis, passive filters and resonance circuit analysis.

Upon completion of this course, the student will be able to:

1. Make necessary measurements using an analog and digital Multimeter;
2. Make AC, DC, time, amplitude and frequency measurements using a dual-trace oscilloscope;
3. Identify the phase difference between two signals using an oscilloscope;
4. Identify series or parallel reactive

- circuits;
5. Make calculations necessary in order to analyze input and output current requirements pertinent to transformers;
  6. Identify and construct filters of various types;
  7. Analyze and calculate the impedance, voltage drops and currents dealing with resistive, capacitive and or inductive circuits.

**COURSE 9**  
**CETT 1425**  
**DIGITAL FUNDAMENTALS**  
**32/64/4.0/4.0**

This course is an entry level course in digital electronics to include numbering systems, logic gates, Boolean algebra, and combinational logic. Different types of circuits such as of flip-flops, shift registers, adders, display decoders, multiplexers and demultiplexers, semiconductor memories, and other digital devices. The student is also introduced to troubleshooting techniques. Laboratory exercises during this course will provide the student practical experience to reinforce the theory.

Upon completion of this course, the student will be able to:

1. Convert between all number systems used in digital electronics.
2. Use gates to perform logic functions using Boolean Equations.
3. Analyze sequential logic devices used in counters and shift registers.
4. Build and troubleshoot adder and subtractor circuits.
5. Convert analog inputs into digital outputs and vice versa.

**COURSE 10**  
**CETT 1441**  
**SOLID STATE CIRCUITS**  
**32/64/4.0/4.0**

A study of various semiconductor devices incorporated in circuits and their applications.

Emphasis on circuit construction, measurements, and analysis.

Upon completion of this course, the student will be able to construct, analyze, test, and troubleshoot circuits containing various semiconductor devices.

**COURSE 11**  
**CETT 2339**

**AMPLIFIERS**  
**32/64/4.0/4.0**

Advanced study of electronic amplifier applications; their construction, testing, and alignment.

Upon completion of this course, the student will be able to apply problem solving techniques for the analysis and repair of multistage amplifiers.

**COURSE 12**  
**PSYC 2301**  
**GENERAL PSYCHOLOGY**  
**48/0/3.0/3.0**

The student will be introduced to the basic principles of psychology and apply those principles to a particular field of knowledge or activity.

Upon completion of this course, the student will be able to:

1. Understand human developmental phases.
2. Explain the basic psychological concepts.
3. Appreciate the theorists' explanations
4. of human behavior.
5. Describe the therapeutic approaches.
6. Identify psychological disorders, their causes and treatments.
7. Apply psychological principles to understanding and working with co-workers and clients.

**COURSE 13**  
**ELMT 1301**  
**PROGRAMMABLE LOGIC CONTROLLERS**  
**16/32/2.0/2.0**

The student will learn the how to identify and explain the main design characteristics, internal architecture and operating principles of programmable logic controllers. Describe and identify the characteristics of commonly used input and Output devices. Develop ladder programs for the logic functions AND, OR, NOR, NAND, NOT and XOR. Develop ladder programs involving internal relays, timers, counters, latching circuits and flashers. Create programs using ladder logic for the Direct Logic and Siemens PLC's.

Upon completion of this course, the student will be able to:

1. Identify Direct Logic and Siemens PLC components
2. Convert logic gates to ladder

diagram

3. Program combinational logic circuits
4. Learn/program momentary/latching start circuits
5. Learn/program timers and counters
6. Learn/program cycle timer's/flasher circuits

## **COURSE 14**

### **CETT 1304**

#### **HIGH RELIABILITY SOLDERING**

**16/32/2.0/2.0**

An explanation of the automated and hand soldering processes plus J STD-001 Hand soldering training including an understanding of the J STD- 001 criteria for acceptable solder connections as well as component preparation, hand soldering, repair, packaging, inspection, ESD control, and process control with hands on experience and critique for assembly and hand soldering of wires and terminals, through-hole components and surface mount components.

Upon completion of this course, the student will be able to:

1. Full understanding of the J STD-001
2. Requirements for soldered electrical and electronic components.
3. Hands on practice of assembly and hand soldering of components
4. Experience of self-critique of work and application of the standard.
5. Understanding of the causes, effects, and contra electric-static Discharge as it applies to electronic assemblies.
6. Familiarity with other material and process standards related to the soldering standard.
7. Familiarity with Inspection techniques, repair techniques
8. Familiarity with process control and statistical process control.
9. Certification as an Application Specialist to the J STD-001 Standard by IPC.

## **COURSE 15**

### **LOTT 1301**

#### **INTRODUCTION TO FIBER OPTICS**

**16/32/2.0/2.0**

An introductory course in fiber optics and its application including advantages of fiber, light transmission in fiber, types of fiber, sources, detectors, and connectors. This course will introduce the students to the

origins of fiber optics. Fiber optic components, installation, testing, and safety will be the primary focus of this block of instruction. The student will learn the types and specifications of various cables and how to choose the proper cable for a particular project. Fiber optic media to Ethernet signal converters manufactured by 3M Communication Markets Division will be employed in various networking labs. Reinforcing the necessity to integrate fiber optic cabling and signal conversion. Cable color coding, terminations, testing and inspection will be covered in detail. The Fiber Optics Association Certification and 3M Certification, Fusion Splice Certification will be presented to the student upon successful completion of this course.

Upon completion of this course, the student will be able to:

1. Full understanding of fiber optic systems operation and hardware.
2. Hands on practice of assembly and polishing of optical connectors
3. Identification of different fiber optic systems.
4. Training on the use of Optical Time Domain reflectometers, fiber fusion splicers and optical power meters
5. Certification as an FOA fiber technician

## **COURSE 16**

### **ELMT 2239**

#### **ADVANCED PROGRAMMABLE LOGIC CONTROLLERS**

**16/32/2.0/2.0**

Advanced applications of programmable logic controllers as used in industrial environments including concepts of programming, industrial applications, troubleshooting, and equipment will be covered. The student will be introduced to programmable logic controllers with its devices, symbols, interfaces, memories, programming languages, and PLC ladder logic diagrams. Develop ladder logic to utilize advanced PLC functions; compose a ladder logic program to demonstrate an advanced industrial control application; apply advanced programming techniques for specialized applications.

Upon completion of this course, the student will be able to:

1. Identify characteristics of a PLC and its functions.
2. Learn the functions of counters,

timers, latching circuits and interrupts.

3. Develop advanced ladder logic diagrams using different PLC scenarios.

**COURSE 17**  
**RBTC 2339**  
**ROBOT PROGRAMMING AND**  
**DIAGNOSTICS**  
**16/32/2.0/2.0**

A course in the programming of industrial robotics, development of programming techniques, and the diagnosis of faults in systems. The Robotics course brings together aspects of modern electronic processing methods and system design, to develop automated systems that are applicable in many areas including modern manufacturing, aerospace and nuclear industries. A range of algorithms, tools and development environments are covered, including control systems, micro controller architecture, and programmable digital systems, which enable sophisticated systems to be developed, and implemented in real world applications. The Robotics course aims to provide graduates with a broad and deep understanding of technology and current practice in electronic engineering and its applications in robotics including digital systems and control systems.

Upon completion of this course, the student will be able to:

1. Identify what a robot is and its components.
2. Create a robotic script using a coordinate system.
3. Develop software base programs using different scenarios.

**COURSE 18**  
**ELMT 1405**  
**PNEUMATICS**  
**16/32/2.0/2.0**

This training course is designed to provide necessary skills in pneumatics fundamentals. The training curriculum includes an understanding of pneumatics circuits and applications.

Upon completion of this course, the student will be able to:

1. Define pneumatics
2. List the advantages and disadvantages of pneumatics
3. List the basic components of pneumatic system
4. Read pneumatic schematics

5. Interpret pneumatic symbols
6. Troubleshoot pneumatic components

**COURSE 19**  
**ELMT 2333**  
**INDUSTRIAL ELECTRONICS**  
**32/64/4.0/4.0**

This course will cover devices, circuits, and systems primarily used in automated manufacturing and/or process control. In-depth coverage of transduction methods and the devices that perform transduction will be covered. Also, computer control and interfacing between mechanical, electrical, electronic, and computer equipment will be studied.

Upon completion of this course, the student will be able to:

1. Describe how electronic input and output circuits are used to control automated manufacturing and/or process systems;
2. Identify basic elements used for input, output, timing, and control;
3. Define how programmable electronic systems use input data to alter output responses; troubleshoot a representative system;
4. Demonstrate how system operation can be altered with software programming

**COURSE 20**  
**EECT 2288**  
**PROFESSIONAL DEVELOPMENT/  
INTERNSHIP**  
**16/32/180/6.0/6.0**

The first 48 hours of this course will be spent in the classroom working on the skills needed to be successful in the workplace. Students will work on their interpersonal skills, to include soft skills and customer service skills. Students will learn how to prepare a functional resume and cover letter. Students will also work on their interview skills, and how to dress appropriately for an interview.

The Internship Program will allow students to experience situations that occur during the daily operation of a working environment. Students will be able to apply the knowledge and skills they have learned in previous courses to the workplace environment. Each student will be placed in an approved electronics repair, service, maintenance or networking program without monetary

compensation to continue his/her training alongside experienced technicians. The Internship Program Coordinator will closely supervise each student's progress for a total of one hundred (100) clock hours.

While at the externship site and upon completion of this course, each student will have:

1. Demonstrated entry-level competency of the Electronics Technician skills identified as Graduate.
2. Warranty Skills in the repair, service, maintenance and/or networking environment.
4. Demonstrated social and

communication skills required performing the duties of a technician.

This course is designed to prepare students for the job seeking process. Students will be required to demonstrate personal and job-related behavioral skills both orally and in written format. Resume' completion and a review of the proper completion of the employment application will be covered. Appropriate attire, persuasive interviewing techniques and mannerisms will be covered. Students will be required to undergo a mock interview with an employer from their field of study

# ASSOCIATE OF APPLIED SCIENCE IN INFORMATION SYSTEMS AND SECURITY

Available at 9451 Diana Drive Campus



Individuals portrayed in photos are actual students, graduates or employees of Western Tech.

## CAREER OPPORTUNITIES IN INFORMATION SYSTEMS AND SECURITY

Computer support specialists held about 853,300 jobs in 2016. They work in many different industries, including information technology (IT), education, finance, healthcare, and telecommunication. Employment of computer support specialists is projected to grow 11 percent from 2016 to 2026, faster than the average for all occupations. More support services will be needed as organizations upgrade their computer equipment and software. Computer support staff will be needed to respond to the installation and repair requirements of increasingly complex computer equipment and software. Most computer support specialists have full-time work schedules; however, many do not work typical 9-to-5 jobs. Because computer support is important for businesses, support specialists must be available 24 hours a day (Source: D.O.L. Occupational Outlook Handbook, 2018-2019 Edition).

### Labor Market Information (2016 thru 2026 Projections)

#### Texas Labor Market Information

Texas Employment 2016:	56,367
Projected Texas Employment 2026:	66,644
Absolute Change 2016-2026:	10,277
Percent Change 2016-2026:	18.23%
Average Hourly Wage 2016:	\$43.91
Average Openings per year due to Replacement:	475
Average Openings per year due to Growth:	645

#### National Labor Market Information

National Employment 2016:	835,300
Projected National Employment 2026:	923,800
Absolute Change 2016-2026:	88,500
Percent Change 2016-2026:	11%
Average Hourly Wage 2016:	32.46
Average Openings per year due to Replacement:	Not Available
Average Openings per year due to Growth:	Not Available

Source: The Labor Market & Career Information Department (LMCI) of the Texas Workforce Commission  
[www.lmci.state.tx.us](http://www.lmci.state.tx.us)



## ENTRANCE REQUIREMENTS FOR APPLICANTS PURSUING THE INFORMATION SYSTEMS AND SECURITY PROGRAM

### Hybrid Program/Courses

Students who enroll in the Associate of Applied Science in Information Systems and Security program will receive training through a hybrid delivery system, that is, a portion of their training is provided in a combination of classes being offered both on-ground and online. Specifically, this program will provide 80% of the training and education on-ground and 20% online.

Hybrid courses are web-based and delivered over the Internet using Western Tech's Learning Management System (Canvas). The system provides both synchronous and asynchronous tools used for on-line delivery. The on-line content of the course is covered by using a variety of on-line educational activities such as discussion boards, chat sessions, conference sessions, case studies, lab simulations, and quizzes. In a hybrid program, the face to face schedule is set on specific dates and times of the week, while the on-line portion of the class is organized for the student to have the flexibility to complete the on-line classroom activities based on their personal/work schedules.

Regardless of the mode of delivery, students entering this program can expect the same level of support as on-ground students to include tutoring services, technical support, employment preparation and assistance with job leads, and access to the school's library.

**Participation in online classes is vital to successful program completion. Students are provided with a computer that meets the requirements of the hybrid program. Students must have Internet access from somewhere outside the school in order to fulfill course requirements and succeed in their classes. In addition, students must have a minimum level of comfort with technology, as they may find themselves needing to access course work online for as much as half of the time the class is in session.**

For that reason, all prospective students considering enrollment in any of the hybrid programs are required to take a short "Suitability for Distance Education" survey before they enroll in school. The survey is designed to identify the prospective student's level of proficiency in the use of technology. Students can expect support in the form of training tailored to their identified needs so that they can handle the demands of the Learning Management System that houses much of their work.

### TECHNICAL STANDARDS AND ESSENTIAL FUNCTIONS

Western Tech's Information Systems and Security program is a hybrid program. It has established technical standards and essential functions for the program as more fully listed below. The ability to meet these standards and essential functions, with or without reasonable accommodation, is required in order to complete the program satisfactorily. Please review the following technical standards and essential functions carefully.

1. The ability to understand course materials and maintain a certain grade/performance level that meets the set academic requirements.
2. The ability to maintain a professional demeanor at all times and interact professionally with fellow students, internship site employees and clientele, administration and faculty.
3. The ability to adhere to a professional dress code acceptable to the profession and as set by Western Tech.
4. The ability to listen, understand, and communicate ideas presented through spoken words and sentences.
5. The ability to see details at close range (within a few feet of the observer).
6. The ability to identify or detect a known pattern (a figure, object, word, or sound) that is hidden in other distracting material.
7. The ability to imagine how something will look after it is moved around or when its parts are moved or rearranged.
8. The ability to use computers and computer systems (including hardware and software) to program, set up functions, enter data, or process information.
9. The ability to utilize computers and perform basic computer functions with programs such as Word, Outlook, and Excel.
10. Must be able to utilize E-Books.

Western Tech does not discriminate in admission or access to programs on the basis of any characteristic protected by law, including disability. Persons with disabilities are eligible for admission, as long as, they can carry out classroom, laboratory and internship assignments; pass written, oral and practical examinations; and meet all of the requirements of the program and generally accepted requirements of the profession, with or without reasonable accommodation. Western Tech will make reasonable accommodations for disabilities. Applicants and students who require accommodation should contact the Campus President and submit a written request for accommodation.

## **AAS DEGREE IN INFORMATION SYSTEMS AND SECURITY**

### **COURSES 1-20**

**1744 CLOCK HOURS**

**77.0 SEMESTER CREDIT UNITS (TWC & THECB)**

**77.0 SEMESTER CREDIT HOURS (ACCSC)**

### **EDUCATIONAL OBJECTIVES**

The Graduate of the Associate of Applied Science Degree in Information Systems and Security gains knowledge and experience in the following areas: Computer Hardware, Operating Systems, Local Area Networking, Wide Area Networking, Cabling, Router and Switch configurations, Microsoft Server and Client administration, Network Security, sales and service. Additional areas include Linux administration and an emerging technologies component that entails wireless applications and voice over IP, (VoIP). The skill set presented in this program will prepare the graduate for entry-level careers in PC service and repair, Network Support, Desktop support and Network Security administration. The graduate is prepared through the program curricula to achieve CompTIA's A+, Network+, Security+, and Linux+ Certifications, Microsoft's Microsoft Certified Solutions Associate (MCSA) Certification in Windows Server 2012, Cisco's Cisco Certified Network Associate (CCNA) Certification, and Certified Ethical Hacker (CEH) Certification.

### **TIME CODES**

The following time code is used on all courses to illustrate the amount of time students will spend in class or lab per course and the subsequent number of credit hours awarded.

44/48/4.0/3.0

Theory hours per course /

Lab hours per course /

Semester Credit Units (TWC & THECB)/

Semester Credit Hours (ACCSC)

### **NOTE:**

The sequential order of the classes may differ from that included in the program outline below.

**PROGRAM OUTLINE: ASSOCIATE OF APPLIED SCIENCE IN INFORMATION SYSTEMS AND SECURITY**

#	COURSE	TITLE	CLOCK HOURS (LEC/LAB/ TOTAL)	PERCENTAGE ON CAMPUS/ ONLINE	TWC/ THECB SCU	ACCSC SCH
1	MATH 1314	College Algebra and Trigonometry	48/0/48	80%/20%	3.0	3.0
2	CPMT 1405	IT Essentials: PC Hardware and Software	32/64/96	80%/20%	4.0	4.0
3	ENGL 1301	English Composition	48/0/48	80%/20%	3.0	3.0
4	CPMT 2445	IT Essentials II: Computer Systems Troubleshooting	32/64/96	80%/20%	4.0	4.0
5	ITNW 1358	Network+	48/0/48	80%/20%	3.0	3.0
6	PHYS 1301	College Physics	32/64/96	80%/20%	4.0	4.0
7	SCOM 1211	Fundamentals of Human Communication	48/0/48	80%/20%	3.0	3.0
8	ITSY 2400	Operating System Security	32/64/96	80%/20%	4.0	4.0
9	MSFT 2012-1	Microsoft Windows Service 2012 R2- Part 1	48/0/48	80%/20%	3.0	2.5
10	MSFT 2012-L1	Microsoft Windows Service 2012 R2- Part 1 Labs	0/96/96	80%/20%	3.0	3.5
11	MSFT 2012-2	Microsoft Windows Service 2012 R2- Part 2	48/0/48	80%/20%	3.0	2.5
12	MSFT 2012-L2	Microsoft Windows Service 2012 R2- Part 2 Labs	0/96/96	80%/20%	3.0	3.5
13	ITCC 1414	Introduction to Networks	32/64/96	80%/20%	4.0	4.0
14	ITSC 1416	Linux Installation and Configuration	32/64/96	80%/20%	4.0	4.0
15*	ITCC 1440	Routing and Switching Essentials	32/64/96	80%/20%	4.0	4.0
16*	ITCC 2412	Scaling Networks	32/64/96	80%/20%	4.0	4.0
17*	ITCC 2413	Connecting Networks	32/64/96	80%/20%	4.0	4.0
18	ITSY 2445	Network Defense and Countermeasures	32/64/96	80%/20%	4.0	4.0
19	PSYC 2301	General Psychology	48/0/48	80%/20%	3.0	3.0
20	ITSY 2459	Security Assessment and Auditing	32/64/96	80%/20%	4.0	4.0
21	CPMT 2488	Professional Development and Internship	16/32/180/228	00/00	6.0	6.0
<b>Total Hours – AAS Degree in Information Systems &amp; Security</b>			<b>704/928/180/1812</b>		<b>77.0</b>	<b>77.0</b>

Note: Courses with prerequisites are denoted in the course outline with an asterisk (\*).

All ISS/EET students pursuing the AAS Degree shall be required to complete at least two (2) industry certifications in their field of study prior to course twenty (20).

**MATH 1314  
COLLEGE  
ALGEBRA AND TRIGONOMETRY  
48/0/3.0/3.0**

The student will study relations and functions, including polynomial, rational, exponential,

logarithmic, and special functions. Other topics include systems of equations, trigonometric functions and their applications.

Upon completion of this course, the student will be able to:

1. Use scientific notation.
2. Perform operations on and factor polynomials.
3. Graph, solve and apply linear and quadratic equations.
4. Perform operations on and solve rational equations.

5. Calculate and define ratio and proportions.
6. Solve systems of linear equations.
7. Analyze functions.
8. Graph and analyze trigonometric functions.

#### **COURSE 02**

##### **CPMT 1405**

#### **IT ESSENTIALS: PC HARDWARE AND SOFTWARE**

**32/64/4.0/4.0**

An introduction to the computer hardware and software skills needed to help meet the growing demand for entry-level information and communication technology (ICT) professionals.

Upon completion of this course, the student will be able to:

1. Explain the internal components of a computer.
2. Assemble a computer system.
3. Install an operating system.
4. Install/connect associated peripherals.
5. Troubleshoot using system tools and diagnostic software.
6. Use simulation and virtual software to investigate networking concepts and analyze network behavior.

#### **COURSE 03**

##### **ENGL 1301**

#### **COMPOSITION I**

**48/0/3.0/3.0**

The student, focusing on the academic essay, will study the principles and techniques of expository and persuasive composition, including drafting, revising, and editing in paragraphs and essays and will produce a resume.

Upon completion of this course, the student will be able to:

1. Use paragraphs as building blocks of essays.
2. Write an expository essay.
3. Explain the means of persuasion and strategies for evaluating evidence.
4. Write a persuasive essay.
5. Demonstrate technical writing skills and written concise communication.
6. Distinguish among academic writing, writing for work, and informal writing.
7. Read critically and make editorial suggestions about what they have read.
8. Produce a personal resume.
9. Utilize the services of the Learning Resource Center.

#### **COURSE 04**

##### **CPMT 2445**

#### **COMPUTER SYSTEM TROUBLESHOOTING**

**32/64/4.0/4.0**

Principles and practices involved in computer system troubleshooting techniques and repair procedures including advanced diagnostic test programs and the use of specialized test equipment.

Upon completion of this course, the student will be able to:

1. Develop hardware and software troubleshooting techniques and perform procedures used in troubleshooting.

#### **COURSE 05**

##### **ITNW 1358**

#### **NETWORK +**

**48/0/3.0/3.0**

Assists individuals in preparing for the Computing Technology Industry Association (CompTIA) Network+ certification exam and career as a network professional.

Upon completion of this course, students will be able to do the following:

1. Identify and define terminology, hardware, and software components of computer networks
2. Utilize equipment, protocols, and topologies to differentiate between various network systems
3. Demonstrate skills in installing network hardware, software, and cable
4. Troubleshoot network connectivity; configure network protocol
5. Install and configure network client software.

#### **COURSE 06**

##### **PHYS 1301**

#### **COLLEGE PHYSICS I.**

**32/64/4.0/4.0**

The student will learn the science of matter and energy and the interactions between them through traditional fields such as electromagnetism, mechanics, thermodynamics, optics, acoustics and atomic and nuclear physics.

Upon completion of this course, the student will be able to:

1. Measure and apply equations of force, work, kinetic and potential energy.
2. Understand Ohm's and Newton's Laws.
3. Convert from standard to the metric system.
4. Use a calculator to solve physics equations.

#### **COURSE 07**

##### **SCOM 1211**

#### **FUNDAMENTALS OF HUMAN COMMUNICATION**

**48/0/3.0/3.0**

Study of human communication as a process. Overview of the principals of interpersonal, small group and presentation skills essential to effective social, business, and professional interaction. Emphasis on examining the role of self-concept, perception, culture, verbal, nonverbal, and written communication. Applying effective writing principles and strategies for understanding and presenting information for various purposes and audiences.

Upon completion of this course, the student will be able to:

1. Identify the components of communication.
2. Identify the major verbal and nonverbal barriers to communication.
3. Describe criteria for choosing communication media.
4. Avoid potential legal consequences of communication.
5. Communicate ethically.
6. Analyze the audience for your communication.
7. Plan the purpose, content, and organization of your message.
8. Compose the first draft of your message.
9. Revise for content, style, and correctness.
10. Proofread your message.
11. Plan a presentation.
12. Organize a presentation.
13. Plan a team and online presentation.
14. Develop effective visual support.
15. Practice and deliver a presentation.

#### **COURSE 08**

##### **ITSY 2400**

##### **OPERATING SYSTEM SECURITY**

**32/64/4.0/4.0**

Safeguard computer operating systems by demonstrating server support skills and designing and implementing a security system. Identify security threats and monitor network security implementations. Use the best practices to configure operating systems to industry security standards.

Upon completion of this course, the student will be able to:

1. Identify network security risks, security design, and monitoring solutions.
2. Identify sources of computer threats, evaluate potential practices, tools, and technologies to protect individual network systems.
3. Establish and sustain an operating system security plan utilizing systems and application security tools.
4. Implement procedures to secure and monitor audit logs and set system administrator alerts.
5. Develop an organizational operating system security plan that provides for periodic reviews of security policies, procedures, authorized users list, and software update patches.

#### **COURSE 09**

##### **MSFT 2012-1**

##### **MICROSOFT SERVER 2012 R2-PART 1**

**48/0/3.0/2.5**

Installing, configuring, managing, and supporting a network infrastructure. Design, implement, and support a network directory infrastructure in a multi-domain

environment. Topics include network components, user accounts and groups, network file systems, file system security, and network printing.

Upon completion of this course, the student will be able to:

1. Install and configure DHCP, DNS, remote access, network security using public key infrastructure.
2. Integrate network services.
3. Deploy operating systems using remote installation services.
4. Describe the process for designing a directory services infrastructure and a network infrastructure that supports directory services.
5. Design a site infrastructure that meets the needs of an organization.
6. Design an administrative structure that meets the needs of an organization.
7. Design a Dynamic Host Configuration Protocol (DHCP) structure that supports directory services.
8. Design a name resolution strategy that supports directory services.
9. Describe the components of a local area network and their relationship.
10. Create and administer user accounts and groups.
11. Plan and set up network file systems.
12. Create effective file system security.
13. Implement and administer network printing.

#### **COURSE 10**

##### **MSFT 2012-L1**

##### **MICROSOFT SERVER 2012 R2- PART 1 LABS**

**0/96/3.0/3.5**

Microsoft Server 2012 R2 - Part 1 Lab Assignments

#### **COURSE 11**

##### **MSFT 2012-2**

##### **MICROSOFT SERVER 2012-R2- PART 2**

**48/0/3.0/2.5**

Installing, configuring, managing, and supporting a network infrastructure. Design, implement, and support a network directory infrastructure in a multi-domain environment. Topics include network components, user accounts and groups, network file systems, file system security, and network printing.

Upon completion of this course, the student will be able to:

1. Install and configure DHCP, DNS, remote access, network security using public key infrastructure.
2. Integrate network services.
3. Deploy operating systems using remote installation services.
4. Describe the process for designing a directory services infrastructure and a network infrastructure that supports directory services.
5. Design a site infrastructure that meets the needs of an organization.

6. Design an administrative structure that meets the needs of an organization.
7. Design a Dynamic Host Configuration Protocol (DHCP) structure that supports directory services.
8. Design a name resolution strategy that supports directory services.
9. Describe the components of a local area network and their relationship.
10. Create and administer user accounts and groups.
11. Plan and set up network file systems.
12. Create effective file system security.
13. Implement and administer network printing.

**COURSE 12**  
**MSFT 2012-L2**  
**MICROSOFT SERVER 2012 R2-PART 1 LABS**  
**0/96/3.0/3.5**  
 Microsoft Server 2012 R2 - Part 1 Lab Assignments

**COURSE 13**  
**ITSC 1416**  
**MICROSOFT SERVER 2012 R2**  
**32.64.4.0/4.0**

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.

Upon completion of this course, the student will be able to:

1. Install, administer, and manage a Linux system.
2. Demonstrate proficiency with Linux utilities, commands, and applications.
3. Identify and resolve security-based issues.
4. Integrate a Linux system into an existing network.

**COURSE 14**  
**ICC 1414**  
**CCNA 1: INTRODUCTION TO NETWORKS**  
**32/64/4.0/4.0**

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.

Upon completion of this course, the student will be able to:

1. Build simple LANs
2. Perform basic configuration on routers and switches
3. Implement IP addressing schemes.

**COURSE 15**  
**ITCC 1440**  
**CCNA 2: ROUTING AND SWITCHING ESSENTIALS**  
**32/64/4.0/4.0**

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.

Upon completion of this course, the student will be able to:

1. Configure and maintain routers and switches.
2. Resolve common issues with routing protocols, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks.

**COURSE 16**  
**ITSY 2445**  
**NETWORK**  
**DEFENSE AND COUNTERMEASURES**  
**32/64/4.0/4.0**

This is a practical application and comprehensive course that includes the planning, design, and construction of defenses for a complex network that will sustain an attack, document events, and mitigate the effects of the attack.

Upon completion of this course, the student will be able to:

1. Assemble network defense tools
2. Differentiate between authorized and unauthorized activity on a network
3. Respond to a breach in security through the use of countermeasures designed to minimize the impact of the breach on the network
4. Document network events
5. Present an analysis of network breach and plan for remediation.

**COURSE 17**  
**ITCC 2412**  
**CCNA 3: SCALING NETWORKS**  
**32/64/4.0/4.0**

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.

Upon completion of this course, the student will be able to:

1. Configure advanced routing and switching
2. Resolve common issues with OSPF, EIGRP, and STP in IP networks
3. Implement a WLAN in a small-to-medium network.

**COURSE 18**  
**ITCC 2413**  
**CCNA: CONNECTING NETWORKS**  
**32/64/4.0/4.0**

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.

Upon completion of this course, the student will be able to:

1. Configure and troubleshoot network devices. Resolve common issues with data link protocols.
2. Resolve common issues with OSPF, EIGRP, and STP in both IPv4 and IPv6 networks.
3. Implement virtual private network (VPN) operations in a complex network.
4. Implement security best practices.

#### **COURSE 19**

**PSYC 2301**

**GENERAL PSYCHOLOGY**

**48/0/3.0/3.0**

The student will be introduced to the basic principles of psychology and apply those principles to a particular field of knowledge or activity.

Upon completion of this course the student will be able to explain the following:

1. Human developmental phases
2. Basic psychological concepts
3. Theorists' explanations of human behavior
4. Therapeutic approaches
5. Psychological disorders and their causes and treatments
6. The application of psychological principles to understanding and working with co-workers and clients

#### **COURSE 20**

**ITSY 2459**

**SECURITY ASSESSMENT AND AUDITING**

**32/64/4.0/4.0**

Comprehensive experience for the security curriculum. Synthesizes technical material covered in prior courses to monitor, audit, analyze, and revise computer and network security systems that ensure appropriate levels of protection are in place to assure regulatory compliance.

Upon completion of this course, the student will be able to:

1. Appraise security plan to ensure appropriate level of protection.
2. Assess network security design.
3. Audit network system based on security design.
4. Use relevant tools to assure security requirements.
5. Review security policies and procedures on a regular basis.

#### **COURSE 21**

**CPMT 2488**

**COMPUTER INSTALL**

**AND REPAIR TECHNOLOGY/TECHNICIAN INTERNSHIP**

**32/16/180/6.0/6.0**

The first 48 hours of this course will be spent in the classroom working on the skills needed to be successful in the workplace. Students will work on their interpersonal skills, to include soft skills and customer service skills. Students will learn how to prepare a functional resume and cover letter. Students will also work on their interview skills, and how to dress appropriately for an interview.

The internship will allow the student to experience situations that occur during the daily operation of an Information Technology Department. The student will be able to apply the knowledge and skills he/she has learned in the previous courses to the workplace environment. The student entering the internship program must have satisfactorily completed all courses of the Information Technology program before being placed in a participating site.

Upon completion of this course, the student will be able to:

1. Describe standard operating procedures for the IT industry.
2. Add work experience of his/her internship.

# ASSOCIATE OF APPLIED SCIENCE IN PHYSICAL THERAPIST ASSISTANT

Available at 9451 Diana Drive Campus



Individuals portrayed in photos are actual students, graduates or employees of Western Tech.

## CAREER OPPORTUNITIES FOR PHYSICAL THERAPIST ASSISTANTS

Physical therapist assistants held about 88,300 jobs in 2016, much faster than the average for all occupations. Employment of physical therapist assistants is projected to grow 31 percent from 2016 to 2026, much faster than the average for all occupations. Demand for physical therapy services is expected to increase in response to the health needs of an aging population, particularly the large baby-boom generation. Physical therapist assistants sometimes called *PTAs* work under the direction and supervision of physical therapists. They help patients who are recovering from injuries and illnesses regain movement and manage pain. Physical therapist assistants are involved in the direct care of patients (Source: D.O.L. Occupational Outlook Handbook, 2017-2018 Edition).

Western Tech has developed its application process for the PTA program in a manner that is intended to be non-discriminatory and objective. The criteria noted in the point summary sheet from which the applicants are selected, is irrelevant of race, color, national origin, sex, disability, age, veteran status, religion, or any other protected status. In order to ensure optimal objectivity with the interview process, the following measures are taken: all interviewees will be interviewed utilizing the same set of predetermined questions, a panel consisting of three (3) members, (including a practicing clinician not affiliated with Western Tech), along with a grading system that is based on the "Generic Abilities" developed by the Physical Therapy program, University

of Wisconsin-Madison, May et al, *Journal of Physical Therapy Education 9-1, Spring 1995*.

Admission to the PTA program is a selective process. It is a competitive process and all applicants will be ranked based on a point system. Therefore, application to the program does not guarantee admission into the program. Enrollment of PTA students is limited to a maximum of 24 students each year. The "point system" will take into consideration: 1) Educational Credentials, 2) Grade Point Average, 3) Wonderlic Scholastic Exam, 4) Observation/Experience Hours (minimum of two clinical settings), 5) Onsite Essay, 6) Letters of Recommendation, and 7) Panel Interview.

Labor Market Information (2012 thru 2022 Projections)



### Texas Labor Market Information

Texas Employment 2012:	5,180
Projected Texas Employment 2022:	7,150
Absolute Change 2012-2022:	1,970
Percent Change 2012-2022:	38.00%
Average Hourly Wage 2013:	\$33.35
Average Openings per year due to Replacement:	115
Average Openings per year due to Growth:	195

### National Labor Market Information

National Employment 2012:	71,400
Projected National Employment 2022:	100,700
Absolute Change 2012-2022:	29,300
Percent Change 2012-2022:	41.00%
Average Hourly Wage 2013:	\$26.12
Average Openings per year due to Replacement:	Not Available
Average Openings per year due to Growth:	Not Available

Source: The Labor Market & Career Information Department (LMCI) of the Texas Workforce Commission  
[www.lmci.state.tx.us](http://www.lmci.state.tx.us)

## ENTRANCE REQUIREMENTS FOR APPLICANTS PURSUING THE PHYSICAL THERAPIST ASSISTANT PROGRAM

### Admissions

Admission to the PTA program begins with meeting with a Western Tech admissions representative. At that time, the prospective student will be informed about the expectations and qualifications necessary for admission into the PTA program, including the need for immunizations, volunteer hours, background check, physical examination by a licensed health practitioner (M.D., D.O., P.A. or A.R.N.P.), CPR certification and admissions panel interview. This information may also be found on our website. Students accepted into the program must be physically, mentally and emotionally capable of completing the program.

The Western Tech PTA program applicant must have a minimum of a high school diploma or equivalency certificate (GED) and be at least 18 years of age. The PTA program admission process will be completed as follows:

1. A minimum of 50 volunteer / observation hours meeting the following criteria: Total hours must include a minimum of two different settings and may include: acute care, outpatient clinic, rehabilitation facility, educational therapy setting, home health therapy and/or long-term care facility.
2. Two letters of recommendation from an appropriate source; i.e. previous employers, teachers, instructors / mentors, etc. Not acceptable are family members, friends, colleagues, etc. A minimum of one letter of recommendation from a clinical practitioner is required.
3. Official transcript (must be submitted DIRECTLY from the institution to Western Tech (see the actual application for details)) that demonstrates a minimum of 2.75 GPA in secondary or post-secondary education (or minimum score of 500 for those applying with a GED).
4. Applicants are to submit the completed application package by the deadline date. Incomplete and/or late applications (post-marked or delivered in-person) after the deadline date must reapply for the next application cycle.
5. Applications are screened and complete applications that meet the minimum requirements as above will be invited for a panel interview and a short on-site essay. A letter of receipt will inform the applicant of any missing documents and/or failure to meet any criteria and will be informed of the deadline date for completing the application.
6. The PTA Selection Committee will summarize the final applications and choose the students for the incoming class. The accepted students will be notified via mail and given a deadline to accept the position and will be required to have all necessary immunizations, physical examination by a physician, healthcare provider, CPR certification and completion of a criminal background check (necessary as the prospective students are required to have an acceptable background check for future gainful employment and requirements by many clinical affiliation sites) at the applicant's expense. Alternate student and denial notifications will be sent by mail. An up-to-date shot record, (to include TB test and Hepatitis vaccine); at least one of the series initiated for the Hepatitis B series vaccine required prior to admission, and the completed series prior to the first clinical rotation.
7. Applicants take Western Tech's Success Initiative (WTSI) Assessment in accordance with WTSI's Policy (admission to the PTA program is not based on the results of this examination and in no way affects a prospective student's chances of acceptance; however it may prevent them from taking certain courses based on the outcome of the WTSI Assessment).

**Note: All prerequisites listed must be completed prior the start of the class. Even if a student is enrolled; the individual cannot begin participating in class until all prerequisites are completed.**

Western Tech does not discriminate on the basis of disability in admissions or access to its programs or activities. However, due to factors requiring a student's ability to complete coursework, comply with safety standards and be

employable after graduation, disabled persons interested in the PTA program who may need special accommodations should contact the Campus President prior to applying.

### Wonderlic Scholastic Exam

The Wonderlic Scholastic Exam is administered to applicants to the Physical Therapist Assistant Program. If the applicant does not achieve the required score for the program, he/she may elect to re-take the Wonderlic exam. Students who take the Wonderlic Scholastic Level Exam (SLE) may take the test and a re-test on the same day. Those wishing to make a third attempt must do within one to two weeks after the second try. Those wishing to re-take the exam after the third attempt must wait six months before their fourth attempt.

The applicant will also complete a student survey as part of the Wonderlic exam. The survey results are forwarded to Program Director for information only.

**WONDERLIC CUT-OFF SCORE:** Physical Therapist Assistant 20

### Immunization Requirement

In accordance with state law, the following immunizations are required for students enrolled in health-related courses that will involve direct patient contact in medical or dental care facilities or who come in contact with human biological fluids or tissue:

1. **Measles:** proof of two doses of measles vaccine administered on or after the first birthday and at least 30 days apart or proof of immunity.
2. **Mumps:** proof of one dose of mumps vaccine administered on or after the first birthday or proof of immunity.
3. **Rubella:** proof of one dose administered on or after the first birthday or proof of immunity.
4. **Tetanus/diphtheria:** proof of one "booster" dose of tetanus/diphtheria (within 10 years).
5. **Hepatitis B virus (HBV):** proof of serologic immunity to HBV or certification of immunization with a complete series of Hepatitis B vaccine. Students are required to present a letter or other suitable written certification.
6. Proof of negative current Tuberculosis test (less than 1 year).

For more information regarding the consequences of outdated immunizations visit:  
[www.dshs.state.tx.us/immunize/](http://www.dshs.state.tx.us/immunize/)

### Western Tech Success Initiative Program (WTSI)

Students entering the Physical Therapist Assistant Program at Western Tech are required to take a college-readiness assessment (WTSI Assessment). This assessment is designed to measure a student's skills in relation to a standard of competence in math, reading and writing, and is offered during regular business hours.

All new and transfer students who have taken an assessment based on Texas Success Initiative (TSI) at another institution and have met the standard requirement from their previous post-secondary institution are exempt from the WTSI. Those students that do not qualify for an exemption must take the WTSI Assessment. Any non-exempt student enrolling or transferring into Western Tech is required to meet the standards of the WTSI in the areas of reading, writing, and mathematics by the completion of the first three (3) courses of the PTA program. Students not meeting the minimum standard requirements in reading, writing, and/or mathematics must complete developmental education in order to meet the requirements of the WTSI Program. In addition, students will receive strengthening in any areas of deficiency, in order to complete the necessary requirements for the WTSI. Any fees associated with the WTSI process are included with the published tuition or fees at Western Tech. Note: If a student does not successfully complete all aspects of the WTSI program initiative, the student cannot be awarded a degree, even if the student successfully completes all coursework in his/her program of study.

## POLICIES & STANDARDS SPECIFIC TO THE PHYSICAL THERAPIST ASSISTANT PROGRAM

### Satisfactory Progress

The PTA program follows the Western Tech policy regarding "Satisfactory Progress" with the exception of the following. Students must achieve and maintain a minimum CUMULATIVE grade point average and a minimum COURSE GRADE of 2.5 (or a 74% numeric grade) in all core courses, and all course work must be satisfactorily completed to be eligible for graduation.

### Unsatisfactory Progress

The PTA program follows the Western Tech Policy regarding "Unsatisfactory Progress" with the following exceptions. If a student's cumulative course grade falls below 2.5 (74%) at the end of any course, the student will be terminated from the PTA program. Any exceptions would be at the discretion of the PTA faculty and would be based on the student's ability to meet all of the required PTA objectives and skills for a particular course. Exceptions for termination may include clinical affiliations, where there is a possibility of repeating a particular affiliation or with general education courses where there are not specific PTA objectives or skills that need to be met. At that point any probation would follow standard Western Tech policy.

Student's receiving below 74% (failing grade) on any core PTA course grade will be dismissed from the program. Exceptions would be at the discretion of the PTA faculty and would be based on the student's completion of all

required PTA objectives and skills for a particular course. Exceptions for termination may include clinical affiliations, where there is a possibility of repeating a particular affiliation and these will be handled on a case-by-case basis. There will be no probationary periods for failure to meet the minimum requirements of a core PTA course.

A student whose enrollment was terminated for unsatisfactory progress may not re-enter school before the start of the next PTA class of students. This may vary depending upon the time of dismissal and given the deadlines for the next incoming class. This student must re-apply for admission into the PTA program and only if the factor(s) contributing to the poor performance have been resolved to the school's (and program director's) satisfaction. In addition to the WTC policy, the student must submit a letter to the PTA program director describing reasons for failure and how the issues have been resolved. This student must follow the standard application procedures and will be ranked with all other applicants. It is possible that upon reapplication, the student may not be accepted. A student who was dismissed and was able to re-enter the program will be on academic probation for at least one phase. Students whose enrollment was terminated from another PTA program will also be required to follow this same policy.

Students receiving below 60% (failing grade) on any course grade may be dismissed from the program at the discretion of the faculty. No make-up work will be allowed on missed or failed "pop quizzes" or open book tests.

The student will be required to demonstrate an entry-level degree of proficiency in each competency during the phase in which it is taught. An inability to achieve the required level of competency in these skills, or in the theory of these skills, will prevent the student from being able to advance into the next phase or to graduate even if the overall grade for a course is "passing". We felt that it is necessary for each student to demonstrate proficiency in both skill application and theory for the student's safety and the safety of the patients in with which they are in contact. Example: If a student has an overall score of 78% in a course but falls below 74% in either their exam average or laboratory practical, they may be considered as "unsuccessful" and may be terminated from the PTA program.

All written exams must be completed with minimum performance standard of 74% on all written examinations indicating competence in all core PTA courses. Written exams that do not meet this criterion will be allowed to be retest for a maximum credit of 70% but still must meet the 74% on the retest to demonstrate minimum understanding. Failure to meet the minimum requirement of 74% may result in termination from the PTA program.

Students who consistently score poorly on skills and examinations will be considered for dismissal from the PTA program. A student receiving more than two "C" average grades in courses is considered having marginal performance and will be considered for dismissal.

## **Health and Hygiene**

Physical Therapist Assistant students are required, for health and hygiene reasons, to have clean, trimmed fingernails, active length (no longer than ¼").

## **Grievance Policy**

For comments, complaints, suggestions or constructive criticisms from a WTC student, prospective student, employee or clinician associated with WTC's PTA program, they should be brought to the attention of the class instructor. If that fails to resolve the problem, or is not associated with an instructor, then the grievance should be taken to the PTA Program Director. If still unresolved, then the person should bring the grievance to the attention of the Campus President. Should the grievance still remain unresolved, the complaint should then be taken to the President of Western Technical College. It is permissible for the student to take the grievance directly to a higher authority without first bringing it to the attention to his/her immediate authority. A student can file a grievance without fear of retaliation. These grievance/due process policies are found in the WTC catalog, WTC Student Handbook, WTC PTA Addendum to the Student Handbook and the WTC PTA Clinical Manual. *For comments, complaints, suggestions or constructive criticisms regarding the WTC PTA program, from those that are not affiliated with WTC the following method of conveying your message may be used.*

1. This process is used only by those who fall outside of the grievance/due process policy of WTC.
2. Comments must be provided in writing and signed by the author. Anonymous submissions will not be acknowledged.
3. Comments must be submitted and directed as follows:  
Attn: PTA Program Director  
Western Technical College  
9451 Diana Drive  
El Paso, TX 79924
4. The Program Director will respond within 10 business days of receipt to resolve and/or discuss the issue. If satisfactory resolution is not reached, appeal may be made to the Campus President of WTCs - Diana Campus. The decision of the Campus President will be final and not subject to appeal.
5. Complaints regarding the PTA Program Director may be directly addressed to the Campus President in the same manner described above in step three of this process.

6. Records of all correspondence will be confidential and maintained by the PTA Program director (except in the case of a complaint about the PTA program director which will be maintained by the Campus President). These records will be kept for a period of five years and are not open to the public.

If, through use of these channels, a satisfactory response to the grievance does not occur, then the student may refer the complaint directly to the Accrediting Commission's attention. Their information is listed below:

Schools accredited by the Accrediting Commission of Career Schools and Colleges of Technology must have a procedure and operations plan for handling student complaints. If a student does not feel that the school has adequately addressed a complaint or concern, the student may consider contacting the Accrediting Commission. All complaints considered by the Commission must be in written form, with permission from the complainant(s) for the Commission to forward a copy of the complaint to the school for a response. The complainant(s) will be kept informed as to the status of the complaint as well as the final resolution by the Commission. Please direct all inquiries to:

**Accrediting Commission of Career Schools & Colleges of Technology**  
2101 Wilson Boulevard, Suite 302  
Arlington, VA 22201  
(703) 247-4212

A copy of the Commission's Complaint Form is available at the school and may be obtained by contacting the Campus President.

All complaints involving the PTA program should be submitted in writing to the PTA Program Director. Complaint forms are located at WTC's Branch Campus located at 9451 Diana Drive, El Paso, TX, 79924. Complaints by students, WTC employees, clinical affiliation sites, employers of graduates, public or any other entities are not open to the public. The forms address the complaint, resolution and follow-up. Complaints will be handled in a timely manner and as appropriate.

*If you do not feel that your complaint has been dealt with appropriately or feel that further actions should be taken, you may also submit a complaint in writing to the Commission on Accreditation in Physical Therapy Education (CAPTE) of the American Physical Therapy Association. You may find their information to do so here: <http://www.apta.org/>*

## **TECHNICAL STANDARDS AND ESSENTIAL FUNCTIONS**

PTA students are required to perform job duties specific to the profession. Specifically, a PTA student must possess motor and visual skills that enable them to meet program objectives. The following is a list of skills necessary for all PTA students:

1. Sufficient hearing ability is necessary to respond safely and appropriately during patient treatment, for communication with other healthcare workers, and for patient assessment.
2. Students must have proficient communication in English both orally and written, to allow for effective communication with patients, co-workers and other healthcare workers. Also, the ability to listen, understand and communicate ideas presented through spoken words and sentences.
3. Students must have sufficient visual acuity for the reading and documentation of patient treatment, reading the Physical Therapist's plan of care, and for assessment of patients using a variety of measuring devices.
4. Students must be physically able to transfer patients safely from a variety of surfaces, i.e.: wheelchairs, mats, beds, etc. and to lift equipment needed for patient care. Students must also be able to tolerate standing for extended periods of time without a break.
5. Students must have sufficient manual dexterity is needed to allow the student to perform fine motor tasks such as: palpation, measurements, and demonstration of patient activities.
6. Students must be able to complete all written and practical exams and functional job tasks within the required time limits in the classroom as well as clinics.
7. Students must demonstrate emotional health to assure good judgments and the critical thinking skills necessary for safe and effective patient care and to maintain a professional demeanor.

Western Tech does not discriminate in admission or access to programs on the basis of any characteristic protected by law, including disability. Persons with disabilities are eligible for admission, as long as, they can carry out classroom, laboratory and clinical assignments; pass written, oral and practical examinations; and meet all requirements of the program and generally accepted requirements of the profession, with or without reasonable accommodation. Western Tech will make reasonable accommodations for disabilities. Applicants and students who require accommodation should contact the Campus President and submit a written request for accommodation.

*\*Students who feel they may have difficulty meeting the above-mentioned technical standards or will require accommodations to participate in the Physical Therapist Assistant Program must contact the PTA Program Director prior to admission into the program to further discuss their individual concerns or needs.*

## **AAS DEGREE IN PHYSICAL THERAPIST ASSISTANT PROGRAM COURSES 1-20**

**1757 CLOCK HOURS**

**77.5 SEMESTER CREDIT UNITS (TWC & THECB)**

**67.0 SEMESTER CREDIT HOURS (ACCS)**

### **EDUCATIONAL OBJECTIVES**

The licensed Physical Therapist Assistant is a health care professional who works under the supervision of a licensed Physical Therapist. The Physical Therapist Assistant will implement treatment based on the established plan of care and treat a variety of patient populations from pediatrics to geriatrics. The treatment techniques that will be taught include: taking vital signs, goniometry, manual muscle testing, activities of daily living, functional training, use of assistive/adaptive devices, balance and gait training, developmental activities, electric current, hydrotherapy, therapeutic use of heat and cold, patient and family education, therapeutic exercise, therapeutic massage, traction, ultrasound, universal precautions and wound care. Knowledge and other skills gained include written/oral communication, documentation, legal guidelines, and ethical decision-making. Proficiency in communication and interaction with the patient, family members and other healthcare team members will be a vital component of the program.

Upon satisfactory completion of the training of an accredited program of physical therapist assistant education, students may be qualified to take the PTA National Physical Therapy Exam (NPTE) and apply for state licensure. Licensure requirements vary by state. Once license is granted, the individual will assume the role of an entry-level licensed physical therapist assistant providing safe and effective clinical treatment in such working environments as home health care, clinics, hospitals and nursing homes. Currently in Texas, every two years, 20 hours of continuing education (mandatory two-hour credit ethics course) is required to renew state license.

### **TIME CODES**

The following time code is used on all courses to illustrate the amount of time students will spend in class or lab per course and the subsequent number of credit hours awarded.

44/48/4.0/3.0

Theory hours per course /

Lab hours per course /

Semester Credit Units (TWC & THECB)/

Semester Credit Hours (ACCS)

### **EXPECTED STUDENT OUTCOMES**

Western Technical College's expected student outcomes for the physical therapist assistant graduate will be as follows. The graduate will:

1. Be prepared to practice in a variety of healthcare settings.
2. Be able to practice within the laws and regulations of the state of Texas.
3. Be eligible to take the state licensure exam.
4. Be able to apply knowledge and skills to assist in treatment of patients under the direct supervision of a physical therapist.
5. Be prepared to communicate (oral, written and non-verbal communication skills) to patients, colleagues, and other members of the healthcare community.
6. Adhere to professional, legal and ethical standards as set forth by the Texas Physical Therapy Practice Act.
7. Be able to educate others (patients, caregivers, staff, students and healthcare professionals) using effective teaching methods.
8. Be able to participate in activities that address quality of service
9. Be able to practice in a safe manner to minimize risk to patients, self and others.
10. Be able to deliver patient care that reflects respect for individual and cultural differences.
11. Be able to demonstrate a commitment to professional and personal growth and advocate the profession through involvement.
12. Be able to document client treatment in a timely and effective manner.
13. Be able to perform measurement and assessment techniques within the knowledge and limits of practice to assist the supervising physical therapists in monitoring and modifying the plan of care.
14. Be able to communicate with the supervising physical therapist in a timely manner to report patient progress or concerns.
15. Be able to participate in discharge planning and follow up care.

### **PROGRAMMATIC ACCREDITATION**

The Physical Therapist Assistant Program at Western Tech is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE) of the American Physical Therapy Association, 1111 North Fairfax Street, Alexandria, Virginia 22314; telephone: 703-706-3245; email: [accreditation@apta.org](mailto:accreditation@apta.org); website: [www.capteonline.org](http://www.capteonline.org)

### **MISSION AND PHILOSOPHY**

*Mission Statement of the Physical Therapist Assistant Program*

The Western Tech Physical Therapist Assistant program is dedicated to providing quality academic and

clinical training in a caring professional manner and in a modern facility to optimize student learning and experience. The Western Tech experience, in conjunction with our community partners, will optimize the student's effectiveness in gaining state licensure and successfully pursuing an ethical and productive career as a physical therapist assistant.

### ***Philosophy of the Physical Therapist Assistant Program***

We believe that the goal of education is to guide the student in a direction of productive work and livelihood in today's dynamic medical society.

We believe that the role of the instructor is to provide the student a positive environment that is rich in experience, knowledge and critical thinking to allow for professional and personal growth.

We believe that the student should be willing to immerse him/herself into such an environment and engross the full potential of what our school and community have to offer.

We believe that family and community members are key resources in the success of our program, profession and the student.

We believe that consuming and utilizing apt knowledge is strategic to the life-long success of the student.

Western Tech feels that the mission and philosophy of the PTA Program are consistent with that of the institution.

We believe the PTA sequential curriculum design will allow students to build on preceding material based on skills acquired from prerequisite courses and increasing the level of knowledge as well as the level of performance of the SPTA to ultimately culminate into an entry-level PTA that will behave and make decisions in a professional manner.

We believe that Western Tech's PTA Program will provide students the educational guidance to become knowledgeable through theory, competent through the application of skills with hands-on training, in order to produce an adaptable professional graduate with critical thinking skills.

### **CLINICAL AFFILIATIONS**

Students will be placed in clinical settings for a total three different affiliations consisting of a minimum of 520 hours throughout the course of the program. It is our intention to attempt to place students locally when possible; however, clinic sites may require the student to travel locally and/or out of town. All expenses, including travel, lodging, fees, etc., are the responsibility of the student.

Although the student's input is considered for placement for clinical sites, requests on behalf of the student are not guaranteed. Decisions are also based on student need (clinically), site availability and ultimately is at the discretion of the PTA faculty.

### **LICENSURE EXAMINATION**

Students successfully graduating from the PTA Program will be awarded an Associate of Applied Science (AAS degree) in Physical Therapist Assistant and may be eligible to take the PTA National Physical Therapy Exam (NPTE) and apply for state licensure. Licensure requirements vary by state. Students must

pass the examination and meet the individual state requirements to receive their license in order to practice as a physical therapist assistant.

**PROGRAM OUTLINE: ASSOCIATE OF APPLIED SCIENCE IN PHYSICAL THERAPIST ASSISTANT**

#	COURSE	TITLE	CLOCK HOURS (LEC/LAB/CLINICAL AFFILIATION/ TOTAL)	TWC/THE/CB SCU	ACCSC SCH
1*	MATH 1314	College Algebra and Trigonometry	48/0/0/48	3.0	3.0
2*	HITT 1305	Medical Terminology I	48/0/0/48	3.0	2.0
3*	PHYS 1301	College Physics	32/64/0/96	4.0	4.0
4*	PTHA 1409	Introduction to Physical Therapy	52/44/0/96	4.0	4.0
5	BIOL 2401	Anatomy & Physiology I	52/44/0/96	4.5	4.0
6*	ENGL 1301	Composition	48/0/0/48	3.0	3.0
7*	BIOL 2102	Anatomy & Physiology II	0/52/0/52	1.5	1.5
8	PTHA 1513	Functional Anatomy	40/69/0/109	4.5	4.0
9*	SPCH 1315	Public Speaking	48/0/0/48	3.0	3.0
10*	PTHA 1321	Pathophysiology	64/0/0/64	4.0	2.5
11*	PSYC 2301	General Psychology	48/0/0/48	3.0	3.0
12*	PTHA 1531	Physical Agents	60/44/0/104	5.0	4.0
13	PTHA 2509	Therapeutic Exercise	50/50/0/100	5.0	5.0
14	PTHA 1261	Clinical PTA I	25/0/115/140	4.0	3.5
15	PTHA 2305	Neurology	56/0/0/56	3.5	2.5
16	PTHA 2431	Management of Neurologic Disorders	50/30/0/80	4.0	3.0
17	PTHA 1361	Clinical PTA II	20/0/120/140	4.0	3.5
18	PTHA 2435	Rehabilitation Techniques	58/38/0/96	5.0	4.0
19	PTHA 2339	Professional Issues	48/0/0/48	3.0	2.0
20	PTHA 1561	Clinical PTA III	25/0/215/220	6.0	5.5
<b>Associate of Applied Science – Physical Therapist Assistant</b>			<b>897/410/450/1757</b>	<b>76.0</b>	<b>67.0</b>

*NOTE: Program courses for the PTA curriculum are designed in a sequential manner. Each course of the curriculum is ordered such that the subsequent material is based on skills acquired from prerequisite courses. Exceptions to this include courses denoted with an asterisk (\*). These courses are offered in a concurrent manner with a maximum of two courses at a time being concurrent. Course materials from each course are building blocks of skill and knowledge that cumulatively lead to an entry-level physical therapist assistant competency. Students are required to achieve competency in each course of the PTA program before they are allowed to progress to the next course. Proficiency of treatment skills must be demonstrated by the student in the laboratory to receive a passing grade. These measures ensure preparedness for clinical affiliations and patient treatment.*

**COURSE 1  
MATH 1314  
COLLEGE  
ALGEBRA AND TRIGONOMETRY  
48/0/3.0/3.0**

The student will study relations and functions, including polynomial, rational, exponential, logarithmic, and special functions. Other topics include

systems of equations, trigonometric functions and their applications.

Upon completion of this course, the student will be able to:

1. Use scientific notation.
2. Perform operations on and factor polynomials.
3. Graph, solve and apply linear and quadratic equations.

4. Perform operations on and solve rational equations.
5. Calculate and define ratio and proportions.
6. Solve systems of linear equations.
7. Analyze functions.
8. Graph and analyze trigonometric functions.

## **COURSE 2**

### **HITT 1305**

#### **MEDICAL TERMINOLOGY I**

**48/0/3.0/2.0**

The student will learn the study of word origin and structure through the introduction of prefixes, suffixes, root words, plurals, abbreviations and symbols, surgical procedures, medical specialties, and diagnostic procedures.

Upon completion of this course, the student will be able to:

1. Identify and pronounce medical terms.
2. Demonstrate correct spelling and usage of medical terms for documentation.
3. Use medical terms in proper context.
4. Build and analyze medical terms.
5. Use medical references as resource tools.

## **COURSE 3**

### **PHYS 1401**

#### **COLLEGE PHYSICS I**

**32/64/4.0/4.0**

The student will learn the science of matter and energy and the interactions between them through traditional fields such as electromagnetism, mechanics, thermodynamics, optics, acoustics and atomic and nuclear physics.

Upon completion of this course, the student will be able to:

1. Measure and apply equations of force, work, kinetic and potential energy.
2. Understand Ohm's and Newton's Laws.
3. Convert from standard to the metric system.
4. Use a calculator to solve physics equations.

## **COURSE 4**

### **PTHA 1409**

#### **INTRODUCTION TO PHYSICAL THERAPY**

**52/44/4.0/4.0**

The student will learn the history and role of a Physical Therapist Assistant in physical therapy. Introduction to interaction between the healthcare provider and the patient, the use of assistive devices and methods of teaching to a patient, proper draping and positioning, proper body mechanics, transfers, documentation. Students will be instructed on monitoring vital signs, correct therapeutic techniques and communication. Clinical skills are assessed through practical examination.

Upon completion of this course, the student will be able to:

1. Define physical therapy and its role in practical application.

2. Delineate differences between a Physical Therapist and a Physical Therapist Assistant.
3. Identify the rules and regulations of the Physical Therapist Assistant's scope of practice.
4. Identify assistive devices utilized in physical therapy and be able to adjust equipment, including devices for ambulation, wheelchair and special equipment.
5. Demonstrate proper body positioning in varying scenarios.
6. Demonstrate appropriate patient interaction through proper communication (verbal and non-verbal) taking into consideration cultural and ethnic differences.
7. Identify and demonstrate all transfers using proper body mechanics.
8. Demonstrate proper medical terminology in documentation.
9. Recognize the importance and legal issues of documentation.
10. Demonstrate hands-on training of applied clinical skills in a laboratory setting: vital signs, transfers, body mechanics, draping, positioning and use/adjustment of assistive devices.
11. Instruct patients and/or caregivers on safe and proper use of equipment.
12. Complete professional conduct self-assessment and review PTA Standards of Ethical Conduct.
13. Recognize individual and cultural differences and respond appropriately in all aspects of physical therapy services.

## **COURSE 5**

### **BIOL 2401**

#### **ANATOMY & PHYSIOLOGY I**

**52/44/4.0/4.0**

The student will develop a critical understanding of anatomical terminology, anatomical structure and function of the muscular, endocrine, cardiovascular, immune & lymphatic, digestive, respiratory, urinary, nervous, integumentary, reproduction and development systems.

Upon completion of this course, the student will be able to:

1. Identify and describe the anatomical terms, directions, planes, axis and the cavities of the human body.
2. Describe basic organization of the human body and its structural levels.
3. Describe the atomic, molecular and cellular structure of human organs.
4. Identify the organs of each system, define function and describe their locations and relationship of its parts.
5. Describe human body homeostasis and normal lab values.



**COURSE 6**  
**ENGL 1301**  
**COMPOSITION I**  
**48/0/3.0/3.0**

The student, focusing on the academic essay, will study the principles and techniques of expository and persuasive composition, including drafting, revising, and editing in paragraphs and essays and will produce a resume.

Upon completion of this course, the student will be able to:

1. Use paragraphs as building blocks of essays
2. Write an expository essay
3. Explain the means of persuasion and strategies for evaluating evidence
4. Write a persuasive essay
5. Demonstrate technical writing skills and written concise communication.
6. Distinguish among academic writing, writing for work, and informal writing
7. Read critically and make editorial suggestions about what they have read
8. Produce a personal resume
9. Utilize the services of the Learning Resource Center

**COURSE 7**  
**BIOL 2102**  
**ANATOMY & PHYSIOLOGY II**  
**0/52/1.5/1.5**

The student will develop and apply skills in identification and observation as related to the human body and physiology on a cellular, molecular, organ and systems level.

Upon completion of this course, the student will be able to:

1. Describe the architecture of skeletal muscle.
2. Demonstrate palpation of bony landmarks in lab for upper and lower extremities.
3. Palpate skeletal muscle during relaxation and active contraction.
4. Identify musculature of the upper extremity and trunk: origin, insertion, action and innervations.
5. Identify and label the structures of the heart and cardiovascular system.
6. Identify and label the layers of the skin and function of the glands.
7. Perform sensory testing with lab partners.
8. Identify and describe musculature of the lower extremities: origin, insertion, action and innervations.
9. Label the lymphatic structures of the body.
10. Label the structures of the lymph nodes.
11. Identify and label the respiratory structures.
12. Record RR and HR as well as calculate MHR and THR in laboratory setting.

**COURSE 8**  
**PTHA 1513**  
**FUNCTIONAL ANATOMY**  
**40/69/4.0/4.0**

The student will learn the muscle origins, insertions, actions and nerve innervations of the human body. This course teaches manual muscle testing, goniometric measurement, kinesiology, biomechanics, gait analysis and basic impairments as it pertains to physical therapy and clinical application.

Upon completion of this course, the student will be able to:

1. Perform goniometric measurement and identify normal/abnormal range of motion of articulations.
2. Explain the basic principles of physics during movement of the body.
3. Analyze biomechanics of the body with regard to axes and planes.
4. Compare and contrast isometric, isotonic, isokinetic, eccentric and concentric muscle contractions.
5. Demonstrate proper manual muscle testing and apply an appropriate grade.
6. Identify gait patterns and courses of the gait cycle and differentiate between normal and abnormal patterns.
7. Identify joint structure and function as it relates to normal and abnormal biomechanics and subsequent treatment.
8. Identify and assess joint range of motion (active/active assistive/passive/resisted) and accessory motion as it applies to normal and abnormal function.
9. Demonstrate applied skills through laboratory activities and practical examinations.

**COURSE 9**  
**SPCH 1315**  
**PUBLIC SPEAKING**  
**48/0/3.0/3.0**

This course develops the ability to speak before audiences. Students will plan and deliver several types of speeches appropriate to occasion and audience. Clarity of purpose and organization will be emphasized. Students will practice critical thinking and listening skills and be able to identify the means of persuasion.

Upon completion of this course, students will be able to do the following:

1. Identify the basic elements of the speech process.
2. Design messages appropriate to topic, audience, and setting.
3. Demonstrate research skills necessary to preparing a speech, including selection of material and determination of which, if any, audio-visual and other resources will be used to enhance audience understanding.
4. Make best use of strategies, verbal and non-verbal, to assure clear, accurate, and engaging communication.

5. Maximize use of language and body for conveying information and convincing argument.
6. Analyze speeches critically for both content and delivery.
7. Identify and use critical listening techniques.
8. Develop the voice for strength, control, and tone.

**COURSE 10**  
**PTHA 1321**  
**PATHOPHYSIOLOGY**  
**64/0/4.0/2.5**

The student will learn about the pathogenesis, prognosis and therapeutic management of diseases/conditions commonly encountered in physical therapy.

Upon completion of this course, the student will be able to:

1. Identify and explain the pathogenesis of selected diseases relevant to physical therapy intervention.
2. Determine aspects of pathophysiology that affect physical therapy treatment.
3. Analyze and describe the current response to acute physiological change in patients' conditions.
4. Obtain and assess pertinent pharmacological information and its impact on patient care.
5. Identify orthopedic impairments of the upper and lower extremities.
6. Identify orthopedic impairments of the spine and pelvis.

**COURSE 11**  
**PSYC 2301**  
**GENERAL PSYCHOLOGY**  
**48/0/3.0/3.0**

The student will be introduced to the basic principles of psychology and apply those principles to a particular field of knowledge or activity.

Upon completion of this course the student will be able to explain the following:

1. Human developmental phases
2. Basic psychological concepts
3. Theorists' explanations of human behavior
4. Therapeutic approaches
5. Psychological disorders and their causes and treatments
6. The application of psychological principles to understanding and working with co-workers and clients

**COURSE 12**  
**PTHA 1531**  
**PHYSICAL AGENTS**  
**60/44/5.0/4.0**

The student will learn biophysical principles and application of therapeutic physical agents with specific emphasis on indications, contraindications, medical efficacy, and physiological effects. The students will also learn theory and methods of wound care and tissue

healing. The theory of the pain cycle and appropriate intervention will be reviewed.

Upon completion of this course, the student will be able to:

1. Describe the pain theory, neurophysiology and behavioral responses to pain and pain management.
2. Demonstrate appropriate draping and positioning of a patient for the application of modalities.
3. Identify the indications, contraindications and precautions for all therapeutic modalities, including massage.
4. Demonstrate appropriate and safe application of physical agents.
5. Discuss biophysical principles as they relate to the application of physical agents.
6. Demonstrate proper techniques and identify proper indications of therapeutic massage.
7. Demonstrate universal precautions with application of all modalities, wound care and massage.
8. Identify the stages of tissue healing and demonstrate proper documentation of wound care.
9. Complete professional conduct self-assessment.

**COURSE 13**  
**PTHA 2509**  
**THERAPEUTIC EXERCISE**  
**50/50/5.0/5.0**

The student will learn concepts, principles and application of techniques related to therapeutic exercise and functional training.

Upon completion of this course, the student will be able to:

1. Identify and utilize the theory, principles and techniques of therapeutic exercise.
2. Identify and utilize therapeutic exercise for particular diagnoses.
3. Identify and utilize therapeutic exercise for various patient populations.
4. Discuss the rationale for the application and modification of therapeutic exercise.
5. Identify signs, symptoms and contraindications to particular exercises or activity.
6. Compare and contrast the difference between aerobic and anaerobic exercises and implementation of each through therapeutic exercise.
7. Demonstrate progression of patients following particular given protocols for specific injury/post-surgical rehabilitation including orthopedic and neurologic impairments.
8. Design and implement an appropriate aquatic therapy exercise.
9. Demonstrate accurate documentation of therapeutic exercise.

**COURSE 14**  
**PTHA 1261**  
**CLINICAL PTA I**  
**25/0/115/4.0/3.5**

Students will be supervised by a licensed clinical instructor (a Physical Therapist or Physical Therapist Assistant) and will receive hands-on clinical training to demonstrate proficient patient care, critical problem solving and thinking, use of modalities, developing and instructing home exercise programs, documenting and developing and administering a presentation on an appropriate topic. A minimum of one clinical affiliation must be completed in an acute care setting. The student must have a current CPR card, malpractice insurance, health insurance, updated immunization record, and criminal background check in order to begin their clinical affiliation. Some affiliations may require additional items such as drug screen or influenza immunization.

Upon completion of this course, the student will be able to:

1. Demonstrate all of the available skills at their clinical affiliation site. The student is not yet expected to neither operate at full autonomy nor perform skills at a pace of an entry-level PTA for each individual skill according to PTA MACS other than those noted as all objectives being required to be met.
2. Complete a minimum of 140 hours working under a clinical instructor.
3. Present a topic of the student's or clinical instructor's choice at the clinical site of the affiliation.
4. Obtain pertinent patient information and utilize it to appropriately treat and document the treatment in the patient's official record.
5. PTA Manual for the Assessment of Clinical Skills (MACS) (a method for evaluating clinical performance and a tool to promote teaching and learning) will be completed by the student and clinical instructor during the clinical affiliation.
6. Master "professional behaviors" and "patient history and chart review" skills from the PTA MACS by receiving "Entry level or Excellent" grade from Clinical Instructor (minimum requirement for successful completion of PTHA 2564).
7. The PTA MACS accounts for 60% of the total grade.

**COURSE 15**  
**PTHA 2305**  
**NEUROLOGY**  
**56/0/3.5/2.5**

The student will learn the neuroanatomy and neurophysiology of the human body as it relates to commonly encountered neurological conditions.

Upon completion of this course, the student will be able to:

1. Identify and explain the components of neuroanatomy as related to physical therapy.

2. Describe the pathogenesis, prognosis, and management of neurological disorders commonly treated in physical therapy.
3. Compare and contrast motor and sensory pathways of the nervous system as they pertain to physical therapy impairments and treatment.

**COURSE 16**  
**PTHA 2431**  
**MANAGEMENT OF NEUROLOGICAL DISORDERS**  
**50/30/4.0/3.0**

The student will utilize knowledge of neuroanatomy and neurophysiology to learn new skills/techniques for comprehensive rehabilitation of selected neurological disorders.

Upon completion of this course, the student will be able to:

1. Distinguish and critically examine the concepts and principles of comprehensive management of neurological disorders.
2. Develop, implement, and revise comprehensive treatment approaches for neurological disorders.
3. Appropriately implement neuromuscular rehabilitation techniques in accordance with a prescribed physical therapy plan of care.

**COURSE 17**  
**PTHA 1361**  
**CLINICAL PTA II**  
**20/0/120/3.5/3.5**

Students will be supervised by a licensed clinical instructor (a Physical Therapist or Physical Therapist Assistant) and will receive hands-on clinical training to demonstrate proficient patient care, critical problem solving and thinking, use of modalities, developing and instructing home exercise programs, documenting and developing and administering a presentation on an appropriate topic. The area of practice will vary from that of the first clinical affiliation. A minimum of one clinical affiliation must be completed in an acute care setting. The student must have a current CPR card, malpractice insurance, health insurance and an updated immunization record, and criminal background check in order to begin their clinical affiliation. Some affiliations may require additional items such as drug screen or influenza immunization.

Upon completion of this course, the student will be able to:

1. Demonstrate all of the available skills at their clinical affiliation site at entry-level for each individual skill according to PTA MACS.
2. The student is expected to operate at full autonomy but not a pace of entry-level PTA.
3. Complete a minimum of 135 hours working under a clinical instructor.
4. Present a topic of the student's or clinical instructor's choice at the clinical site of the affiliation. Obtain pertinent patient information and utilize it to appropriately

treat and document the treatment in the patient's official record.

5. PTA MACS (a method for evaluating clinical performance and a tool to promote teaching and learning) will be completed by the student and clinical instructor during the clinical affiliation.
6. Master "professional behaviors," skills 1-12 from the PTA MACS, and "patient history and chart review" skills from the PTA MACS by receiving "Entry level or Excellent" grade from Clinical Instructor (minimum requirement for successful completion of PTHA 2566).
7. Complete 70% of additional site skills, in addition to the required skills in Clinical PTA I, on the master skills list.
8. The PTA MACS accounts for 60% of the total grade.

### **COURSE 18** **PTHA 2435** **REHABILITATION TECHNIQUES** **58/38/4.5/4.0**

In this advanced course, the student will learn to integrate previously learned and new skills/techniques into the comprehensive rehabilitation of selected long-term pathologies.

Upon completion of this course, the student will be able to:

1. Appropriately discuss, promote and compose wellness and preventative programs to promote public health.
2. Distinguish and critically examine the concepts and principles of comprehensive management of long-term pathologies.
3. Develop, implement, and revise a comprehensive treatment approach for various long-term pathologies.

### **COURSE 19** **PTHA 2339** **PROFESSIONAL ISSUES** **48/0/3.0/2.0**

This is a capstone course which engages the student in the discussion of professional issues and behaviors related to clinical practice and which prepares the students for transition into the workforce.

Upon completion of this course, the student will be able to:

1. Discuss licensure and job acquisition skills.
2. Discriminate appropriate behaviors in response to various legal, ethical, and professional interactions.
3. Debate socioeconomic influences related to the field of physical therapy.
4. Compose a professional résumé.

### **COURSE 20** **PTHA 1561** **CLINICAL PTA III** **25/0/215/6.0/5.5**

Students will be supervised by a licensed clinical instructor (a Physical Therapist or Physical Therapist Assistant) and will receive hands-on clinical training to demonstrate proficient patient care, critical problem solving and thinking, use of modalities, developing and instructing home exercise programs, documenting and developing and administering a presentation on an appropriate topic. The area of practice will vary from that of the previous clinical affiliations. A minimum of one clinical affiliation must be completed in an acute care setting. The student must have a current CPR card, malpractice insurance, health insurance and an updated immunization record, and criminal background check in order to begin their clinical affiliation. Some affiliations may

Require additional items such as drug screen or influenza immunization.

Upon completion of this course, the student will be able to:

1. Demonstrate all of the available skills at their clinical affiliation site at entry-level for each individual skill according to PTA MACS.
2. The student is expected to operate at full autonomy and at a pace of entry-level PTA.
3. Complete a minimum of 245 hours working under a clinical instructor.
4. Present a topic of the student's or clinical instructor's choice at the clinical site of the affiliation.
5. Obtain pertinent patient information and utilize it to appropriately treat and document the treatment in the patient's official record.
6. PTA MACS (a method for evaluating clinical performance and a tool to promote teaching and learning) will be completed by the student and clinical instructor during the clinical affiliation.
7. Master "professional behaviors" and "patient history and chart review" skills from the PTA MACS by receiving "Entry level or Excellent" grade from Clinical Instructor (minimum requirement for successful completion of PTHA 2568).
8. Demonstrate entry-level physical therapist assistant skills in accordance with the PTA MACS.
9. Complete 80% of additional site skills, in addition to the required skills in Clinical PTA I, on the master skills list.
10. The PTA MACS accounts for 70% of the total grade

# BACHELOR IN BUSINESS ADMINISTRATION

Available at 9451 Diana Drive Campus & 9624 Plaza Circle Campus



Individuals pictured above are actors, students and/or employees of Western Tech

## CAREER OPPORTUNITIES IN BUSINESS ADMINISTRATION

The Bachelor in Business Administration will help students learn to cultivate a variety of skills and assets needed by businesses. Supervisors directly oversee and coordinate the activities of clerical and administrative support workers. Supervisors of Office and Administrative Support Workers held about 119,490 jobs in 2010. There was above average growth rate in colleges and universities, office administrative services, and an average growth rate in business support services. Employment growth is projected to increase by 53.90% in Texas and 14.30% nationally.

Labor Market Information (2012 thru 2022)

### Texas Labor Market Information

Texas Employment 2012:	115,420
Projected Texas Employment 2022:	139,670
Absolute Change 2012-2022:	24,250
Percent Change 2012-2022:	21.00%
Average Hourly Wage 2014:	\$26.96
Average Openings per year due to Replacement:	2,745
Average Openings per year due to Growth:	2,425

### National Labor Market Information

National Employment 2012:	1,424,450
Projected National Employment 2022:	1,589,600
Absolute Change 2012-2022:	171,500
Percent Change 2012-2022:	12.10%
Average Hourly Wage 2013:	\$27.01
Average Openings per year due to Replacement:	Not Available
Average Openings per year due to Growth:	Not Available

Source: The Labor Market & Career Information Department (LMCI) of the Texas Workforce Commission  
[www.lmci.state.tx.us](http://www.lmci.state.tx.us)

## ENTRANCE REQUIREMENTS FOR APPLICANTS PURSUING THE BUSINESS ADMINISTRATION PROGRAM

### Hybrid Program/Courses

Students who enroll in the Bachelor in Business Administration program will receive training through a hybrid delivery system, that is, a portion of their training is provided in a combination of classes being offered both on-ground and online. Specifically, this program will provide 50% of the training and education on-ground and 50% online.

Hybrid courses are web-based and delivered over the Internet using Western Tech's Learning Management System (Canvas). The system provides both synchronous and asynchronous tools used for on-line delivery. The on-

line content of the course is covered by using a variety of on-line educational activities such as discussion boards, chat sessions, conference sessions, case studies, lab simulations, and quizzes. In a hybrid program, the face to face schedule is set on specific dates and times of the week, while the on-line portion of the class is organized for the student to have the flexibility to complete the on-line classroom activities based on their personal/work schedules.

Regardless of the mode of delivery, students entering this program can expect the same level of support as on-ground students to include tutoring services, technical support, employment preparation and assistance with job leads, and access to the school's library.

**Participation in online classes is vital to successful program completion. Students are provided with a computer that meets the requirements of the hybrid program. Students must have Internet access from somewhere outside the school in order to fulfill course requirements and succeed in their classes. In addition, students must have a minimum level of comfort with technology, as they may find themselves needing to access course work online for as much as half of the time the class is in session.**

For that reason, all prospective students considering enrollment in any of the hybrid programs are required to take a short "Suitability for Distance Education" survey before they enroll in school. The survey is designed to identify the prospective student's level of proficiency in the use of technology. Students can expect support in the form of training tailored to their identified needs so that they can handle the demands of the Learning Management System that houses much of their work.

## **TECHNICAL STANDARDS AND ESSENTIAL FUNCTIONS**

Western Tech's Bachelor in Business Administration program is a hybrid program. It has established technical standards and essential functions for the program as more fully listed below. The ability to meet these standards and essential functions, with or without reasonable accommodation, is required in order to complete the program satisfactorily. Please review the following technical standards and essential functions carefully.

1. The ability to understand course materials and maintain a certain grade/performance level that meets the set academic requirements.
2. The ability to maintain a professional demeanor at all times and interact professionally with fellow students, internship site employees and clientele, administration and faculty.
3. The ability to adhere to a professional dress code acceptable to the profession and as set by Western Tech.
4. The ability to listen, understand, and communicate ideas presented through spoken words and sentences.
5. The ability to see details at close range (within a few feet of the observer).
6. The ability to match or detect differences between colors, including shades of color and brightness.
7. The ability to work with others in a team environment.
8. The ability to respect instructor, classmates, and internship staff and customers.
9. The ability to utilize computers and perform basic computer functions with programs such as Word, Outlook, and Excel.
10. Must be able to utilize E-Books.

Western Tech does not discriminate in admission or access to programs on the basis of any characteristic protected by law, including disability. Persons with disabilities are eligible for admission, as long as, they can carry out classroom, laboratory and internship assignments; pass written, oral and practical examinations; and meet all of the requirements of the program and generally accepted requirements of the profession, with or without reasonable accommodation. Western Tech will make reasonable accommodations for disabilities. Applicants and students who require accommodation should contact the Campus President and submit a written request for accommodation.

**BACHELOR IN BUSINESS  
ADMINISTRATION  
COURSES 1-40  
2436 CLOCK HOURS  
132.5 SEMESTER CREDIT UNITS (TWC  
& THECB)  
132.5 SEMESTER CREDIT HOURS  
(ACCSC)**

## **EDUCATIONAL OBJECTIVES**

The Bachelor in Business Administration program will help students learn to cultivate a variety of skills and assets needed by businesses. The program will provide students with the knowledge and technical skills needed for positions in business and may also provide students with opportunities for career advancement. The program provides training in a variety of courses to include: Accounting, Principles of Lean Six Sigma, Project Management, Advertising, among others. It will also provide hands-on experience in Microsoft Word and Excel. This program provides General Education, technical, and specialized courses

that will prepare the graduate for careers in private, public, and government sectors. Students may find employment as financial analyst, business managers, general manager, public relations specialist, retail manager, operation coordinator, logistics clerk, accounting clerk, project coordinator, project manager, advertising rep, marketing manager, sales manager HR assistant among other business positions

or lab per course and the subsequent number of credit hours awarded.

48/48/180/4.0  
 Theory hours per course/  
 Lab hours per course/  
 Internship hours per course/  
 Semester Credit Hours

**TIME CODES**

The following time code is used on all courses to illustrate the amount of time students will spend in class

**NOTE:**

The sequential order of the classes may differ from that included in the program outline.

**PROGRAM OUTLINE: BACHELOR IN BUSINESS ADMINISTRATION**

#	COURSE	TITLE	HRS.	THEORY/ LAB	PERCENTAGE ON CAMPUS/ ONLINE	TWC/ THECB SCU	ACCSC SCH
1	BMGT 1327	Principles of Management	48	48/0	50%/50%	3.0	3.0

2	ITSC 1209	MS Office Applications I	48	32/16	50%/50%	2.5	2.5
3	ENGL 1301	Composition	48	48/0	50%/50%	3.0	3.0
4	ITSC 2221	MS Office Applications II	48	32/16	50%/50%	2.5	2.5
5	ACNT 1525	Accounting Principles I	96	48/48	50%/50%	4.5	4.5
6*	ACNT 1526	Accounting Principles II	96	48/48	50%/50%	4.5	4.5
7	BMGT 1341	Business Ethics	48	48/0	50%/50%	3.0	3.0
8	HRPO 2301	Human Resource Management	48	48/0	50%/50%	3.0	3.0
9	MRKG 1311	Principles of Marketing	48	48/0	50%/50%	3.0	3.0
10	MATH 1312	Algebra	48	48/0	50%/50%	3.0	3.0
11	SCOM 1211	Fundamentals of Human Communication	48	48/0	50%/50%	3.0	3.0
12	ECON 2301	Principles of Macroeconomics	48	48/0	50%/50%	3.0	3.0
13*	ACNT 1213	Computerized Accounting (QuickBooks)	96	48/48	50%/50%	4.5	4.5
14*	ACNT 1229	Payroll Accounting	48	38/10	50%/50%	2.5	2.5
15	GEOL 1301	Geology	48	48/0	50%/50%	3.0	3.0
16	BUSG 2317	Business Law	48	48/0	50%/50%	3.0	3.0
17*	ECON 2302	Principles of Microeconomics	48	48/0	50%/50%	3.0	3.0
18*	MATH 1324	Mathematics for Business & Social Sciences	48	48/0	50%/50%	3.0	3.0
19	PSYC 2301	General Psychology	48	48/0	50%/50%	3.0	3.0
20	BUSG 2311	Entrepreneurship and Innovation	96	58/38	50%/50%	5.0	5.0
21	BMGT 3321	Production/ Operation Management	96	48/48	50%/50%	4.5	4.5
22	IBUS 3300	Logistics Management	48	48/0	50%/50%	3.0	3.0
23	HIST 1301	United States History I	48	48/0	50%/50%	3.0	3.0
24*	HIST 1302	United States History II	48	48/0	50%/50%	3.0	3.0
25	LSSY 3310	Principles of Lean Six Sigma	48	48/0	50%/50%	3.0	3.0
26*	LSSG 3311	Applied Lean Six Sigma	96	48/48	50%/50%	4.5	4.5
27	MATH 1342	Statistics	48	48/0	50%/50%	3.0	3.0
28	FINA 3315	Business Finance	48	48/0	50%/50%	3.0	3.0
29	BMGT 3301	Project Management	48	48/0	50%/50%	3.0	3.0
30	ENGL 1302	Research Analysis	48	48/0	50%/50%	3.0	3.0
31	BMGT 4333	Non-Profit Organization Management	48	48/0	50%/50%	3.0	3.0
32*	BMGT 4302	HR Management Development	48	48/0	50%/50%	3.0	3.0
33	BMGT 4020	E-Business	48	48/0	50%/50%	3.0	3.0
34*	BMGT 4301	Advanced Project Management	96	48/48	50%/50%	4.5	4.5
35	PHIL 1301	Introduction to Philosophy	48	48/0	50%/50%	3.0	3.0



36	BMGT 4325	International Business Management	48	48/0	50%/50%	3.0	3.0
37*	ACNT 4312	Tax Accounting	48	48/0	50%/50%	3.0	3.0
38*	ADVT 4336	Advertising Creative Strategy & Execution	48	48/0	50%/50%	3.0	3.0
39	BMGT 4300	Capstone	48	48/0	50%/50%	3.0	3.0
40	BMGT 4388	Professional Development Business Administration & Management Internship	228	16/32/180	00/00	6.0	6.0
<b>Total Hours - Bachelor in Business Administration</b>			<b>2436</b>	<b>1856/400/180</b>		<b>132.5</b>	<b>132.5</b>

Note: Courses with prerequisites are denoted in the course outline with an asterisk (\*).

Students in the Bachelor in Business Administration degree program will have the opportunity to test for the following certifications: Word, Excel, Payroll, Bookkeeping, QuickBooks, Lean Six Sigma (Yellow), Lean Six Sigma (Green) [depending on years of paid work experience], and Advanced Project Management. Note: These certifications are not required for graduation.

Students can earn digital badges in selective courses. Badges will create a learning pathway throughout their program. A digital badge is a representation of a skill a student has learned. Badges verify their skills and achievements that may be industry-specific or internally prepared badges and can be displayed digitally on their resumes. Western Technical College offers 15 digital badges: Principles of Management, Word, Excel, Payroll, Principles of Marketing, Human Resource Management, Business Ethics, Principles of Lean Six Sigma, Project Management, Advanced Project Management, Applied Lean Six Sigma, Non-Profit Organization Management, Tax Accounting, E-Business, and Advertising.

## **COURSE 1**

### **BMGT 1327**

#### **Principles of Management**

#### **48/0/0/3.0/3.0**

This course explores the rich concepts and applications of management. Students will learn to apply management concepts about decision making, foundations of planning, managing change, effective communication, operations management, and team building.

Upon completion of this course, the student will be able to:

1. Define management and Operations management
2. Understand globalization and how it affects organizations
3. Become acquainted with the foundation of decision making
4. Understand organizational structure and design
5. Be able to apply principles of Human Resource Management
6. Understand the foundations of human behavior and motivating and rewarding employees
7. Understand managing change, innovation, groups, managing work teams, leadership and trust
8. Know how to manage communication and information

**Prerequisites: None**

## **COURSE 2**

### **ITSC 1209**

#### **MS Office Applications I**

#### **32/16/0/2.5/2.5**

Students will be introduced to Word. The course will concentrate on hands-on experience with the features of Microsoft Office. Students will learn to format text, compress files, create new documents, insert and format graphics, create tables, insert footnotes, create columns, use mail merge, create charts, and insert hyperlinks.

Upon completion of this course, the student will be able to:

1. Save files in new folders, print, save, use comments and track changes in a document
2. Format text and paragraphs
3. Create a document using tables and templates to create resumes and cover letters
4. Create research papers, newsletters, and merged mailing labels
5. Create a blog post, web content, insert hyperlinks and use advanced editing tools
6. Create mass mailings
7. Embed and link objects and use macros

**Prerequisites: None**

**COURSE 3**  
**ENGL 1301**  
**Composition I**  
**48/0/0/3.0/3.0**

The student, focusing on the academic essay, will study the principles and techniques of expository and persuasive composition, including drafting, revising, and editing in paragraphs and essays and will produce a resume.

Upon completion of this course, the student will be able to:

1. Use paragraphs as building blocks of essays.
2. Explain the means of persuasion and strategies for evaluating evidence.
3. Demonstrate technical writing skills and concise written communication.
4. Distinguish among academic writing, writing for work, and informal writing.
5. Evaluate what was read and make editorial suggestions.
6. Write an expository and a persuasive essay.

**Prerequisites: None**

**COURSE 4**  
**ITSC 2221**  
**MS Office Applications II**  
**32/16/0/2.5/2.5**

Students will be introduced to Microsoft Excel. The course will concentrate on hands-on experience with the features of Microsoft Office. Students will learn to create worksheets and charting data, tables, pie-charts, diagrams, templates, pivot tables and pivot charts, formulas, format worksheets, and evaluate complex formulas.

Upon completion of this course, the student will be able to:

1. Create and manage worksheets and workbooks.
2. Manage data cells and ranges
3. Create tables
4. Perform Operations with formulas & functions
5. Create Charts and objects.

**Prerequisites: None**

**COURSE 5**  
**ACNT 1525**  
**Accounting Principles I**  
**48/48/0/4.5/4.5**

This course will develop an understanding of accounting principles relating to business operations. The course will concentrate on generally accepted principles, the accounting process, assets and liabilities, journalizing, and posting adjusting entries. Students will be able to record transactions and adjusting entries, post to the ledger, close periods, and see the effects in the ledger accounts.

Upon completion of this course, the student will be able to:

1. Examine and prepare Income Statements, Statement of Retained Earnings, and Balance Sheets
2. Understand assets, liabilities, owner's equity, and the importance of financial statements
3. Use revenue and expense accounts
4. Define the drawing account
5. List the rules of debit and credit
6. Understand permanent and temporary accounts and the general journal
7. Correct journal and ledger errors
8. Understand journalizing, posting adjusting entries, and the closing process

**Prerequisites: None**

**COURSE 6**  
**ACNT 1526**  
**Accounting Principles II**  
**48/48/0/4.5/4.5**

This course is a continuation of Accounting I. Students apply concepts related to Accounts Receivable, long-term liabilities, fixed assets, inventory valuation, Partnerships, Corporations, process costing, cost-volume analysis, cost allocation and responsibility accounting. Students will be able to launch Connect for practice purposes and lab.

Upon completion of this course, the student will be able to:

1. Journalize transactions for Accounts Receivable, long-term notes payable and mortgage payable
2. Describe bonds payable and report liabilities on the balance sheet
3. Use commonly used depreciation methods
4. Describe and illustrate how debt and equity securities are reported
5. Explain different inventory valuations such as FIFO, LIFO, Average cost method

6. Explain how financial statements are used to analyze a business and perform a horizontal and vertical analysis of financial statements
7. Record materials and labor costs in a job order costing system
8. Prepare a production cost report using the weighted-average method and use cost-volume profit analysis for profit planning

**Prerequisites:** ACNT 1525 Accounting Principles I

## **COURSE 7**

### **BMGT 1341**

#### **Business Ethics**

**48/0/0/3.0/3.0**

The course will focus on the moral and ethical issues of businesses. This course will focus on business decision making, ethics, economics and law, ethical organizational decision making, market ethics, whistleblowing, trade secrets and conflict of interest, discrimination and affirmative action, marketing, advertising, product safety, employment rights and ethics in finance.

Upon completion of this course, the student will be able to:

1. Understand ethical management and ethics in organizations and describe the two realms that law and ethics govern
2. Describe breaches and fraud
3. Identify the rules of business ethics and describe ethical requirement specific to professionals
4. Describe the Kantian Ethics
5. Identify employee rights and describe the justification of whistleblowing and the meaning of loyalty
6. Describe trade secrets, conflict of interest, the challenges of privacy, and the meaning of discrimination and harassment
7. Understand the distinction between safety and health
8. Describe the relationship between ethics and economics and describe business decisions that are unethical even if legal

**Prerequisites:** None

## **COURSE 8**

### **HRPO 2301**

#### **Human Resources Management**

**48/0/0/3.0/3.0**

This course provides an in-depth study and practice of personnel management or human resource management. It includes the process of acquiring, training, appraising, and compensating employees, and of attending to their labor relations, health and safety, and fairness concerns.

Upon completion of this course, the student will be able to:

1. Explain why human resource management is important to all managers and describe the trends that are influencing it.
2. Summarize the basic equal employment opportunity laws and how each impacts HR functions such as recruitment and selection
3. Explain the basic defenses against discrimination allegations and provide examples of what employers can and cannot legally do with respect to recruitment, selection, and promotion and layoff practices
4. Describe three important strategic human resource management tools
5. Write job descriptions, including summaries and job functions, using the Internet and traditional methods
6. Explain and give examples of the need for branding in effective recruiting and how to do a background check on job candidates
7. List and explain the five steps in the training process and the pros and cons of at least eight performance appraisal methods
8. Define employee relations and discuss at least four methods for managing

**Prerequisites:** None

## **COURSE 9**

### **MRKG 1311**

#### **Principles of Marketing**

**48/0/0/3.0/3.0**

This course involves the systematic planning, implementation and control of a mix of business activities intended to bring together buyers and sellers for the mutually advantageous exchange or transfer of products.

Upon completion of this course, the student will be able to:

1. Understand the marketplace and customers and identify the five core marketplace concepts
2. Describe customer relationship management, identify strategies for creating value for customers, create business portfolios and develop growth strategies
3. Describe how changes in the demographic and economic environments affect marketing decisions
4. Describe how companies analyze and use marketing information and how companies find and develop new-product ideas
5. List and define the major types of buying decision behavior and the stages in the buyer decision process
6. Define the major steps in designing a customer-driven marketing strategy: market segmentation, targeting, differentiation, and positioning
7. Identify the three major pricing strategies and discuss the importance of understanding customer-value perceptions, company costs, and competitor strategies when setting prices
8. Define the need to understand competitors as well as customers through competitor analysis

**Prerequisites:** None

## **COURSE 10**

### **MATH 1312**

#### **Algebra**

**48/0/0/3.0/3.0**

The student will study relations and functions, including polynomial, rational, exponential, logarithmic, and special functions. Other topics include systems of equations and its applications.

Upon completion of this course, the student will be able to:

1. Use scientific notation.
2. Perform operations on and factor polynomials.
3. Graph, solve and apply linear and quadratic equations.
4. Perform operations on and solve rational equations.
5. Calculate and define ratio and proportions.
6. Solve systems of linear equations.
7. Analyze functions.

**Prerequisites:** None

## **COURSE 11**

### **SCOM 1211**

#### **Fundamentals of Human Communication**

**48/0/0/3.0/3.0**

Study of human communication as a process. Overview of the principals of interpersonal, small group and presentation skills essential to effective social, business, and professional interaction. Emphasis on examining the role of self-concept, perception, culture, verbal, nonverbal, and written communication. Applying effective writing principles and strategies for understanding and presenting information for various purposes and audiences.

Upon completion of this course, the student will be able to:

1. Identify the components of communication and its barriers.
2. Analyze the audience and describe the criteria for choosing communication media.
3. Communicate ethically and avoid potential legal consequences of communication.
4. Plan the purpose, content and organization of message.
5. Proofread message revise for content, style and correctness.
6. Prepare and deliver a presentation.

**Prerequisites:** None

## **COURSE 12**

### **ECON 2301**

#### **Principles of Macroeconomics**

**48/0/0/3.0/3.0**

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.

Upon completion of this course, the student will be able to:

1. Explain the role of scarcity, specialization, opportunity cost and cost/benefit analysis in economic decision-making.
2. Identify the determinants of supply and demand; demonstrate the impact of shifts in both market supply and demand curves on equilibrium price and output.
3. Define and measure national income and rates of unemployment and inflation.

4. Identify the phases of the business cycle and the problems caused by cyclical fluctuations in the market economy.
5. Define money and the money supply; describe the process of money creation by the banking system and the role of the central bank.
6. Construct the aggregate demand and aggregate supply model of the macro economy and use it to illustrate macroeconomic problems and potential monetary and fiscal policy solutions.
7. Explain the mechanics and institutions of international trade and their impact on the macro economy.
8. Define economic growth and identify sources of economic growth.

**Prerequisites: None**

## **COURSE 13**

### **ACNT 1213**

#### **Computerized Accounting (QuickBooks)**

**48/48/0/4.5/4.5**

This course is designed to present accounting concepts and their relationship to QuickBooks. Students will learn the underlying accounting concepts and receive hands-on training on how to implement them in QuickBooks. The course introduces students to QuickBooks accounting for a service business, a merchandising business, payroll, and a company setup for QuickBooks. Students will record business transactions using an up-to-date commercial software program designed for and used by businesses and accountants.

Upon completion of this course, the student will be able to:

1. Recognize QuickBooks forms and understand the use of lists and registers in QuickBooks
2. Prepare QuickBooks graphs and use QuickReport within graphs
3. Create invoices, record sales transactions on account, and create payroll checks
4. Understand the concepts for computerized accounting for payables
5. Record depreciation and enter the adjusting entries required for accrual-basis accounting.
6. Use the Customer Center to obtain information regarding credit customers
7. Customize a purchase order template
8. Set up a company using the EasyStep Interview and QuickBooks Setup

**Prerequisites: ACNT 1525 Accounting Principles I**

## **COURSE 14**

### **ACNT 1229**

#### **Payroll Accounting**

**38/10/0/2.5/2.5**

Students will be introduced to payroll laws and regulations, determine gross earnings, payroll deductions, federal and state payroll taxes, and tax reports. A comprehensive practice set requires students to perform payroll functions for a small business. This practice set will conclude with the end-of-quarter and end-of-year activities that all businesses must go through.

Upon completion of this course, the student will be able to:

1. Define and explain the terms represented by these abbreviations: IRS, OASDI, FICA, FUTA, SUTA, ERISA
2. Describe the general types of withholding allowances to which an employee will be entitled
3. Define the common payroll periods: weekly, biweekly, semimonthly, and monthly and the difference between temporary and contract workers
4. Compute gross earning based on regular and overtime hours worked and describe how an EFT payroll system works
5. Name several common "pretax" items that lessen the amount of income tax for employees
6. Use federal and state wage-bracket tables to determine income taxes due on employee earnings
7. Calculate social security and Medicare taxes on employee earnings
8. Compute the earnings from tips of an employee, explain how taxes on these earnings are recorded, and complete an annual state report of wages paid and tax owed

**Prerequisites: ACNT 1525 Accounting Principles I**

## **COURSE 15**

### **GEOL 1301**

#### **Geology**

**48/0/0/3.0/3.0**

This course introduces students 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.

Upon completion of this course, the student will be able to do the following:

1. Describe how the scientific method has led to our current understanding of Earth's structure and processes.
2. Interpret the origin and distribution of minerals, rocks and geologic resources.
3. Explain the theory of plate tectonics and its relationship to the formation and distribution of Earth's crustal features.
4. Quantify the rates of physical and chemical processes acting on Earth and how these processes fit into the context of geologic time.
5. Associate how surface processes are driven by interactions among Earth's systems (e.g., the geosphere, hydrosphere, biosphere, and atmosphere).
6. Identify and describe the internal structure and dynamics of Earth.
7. Appreciate the interactions of humans with Earth (e.g., resource development or hazard assessment).

**Prerequisites:** None

## **COURSE 16**

### **BUSG 2317**

#### **Business Law**

**48/0/0/3.0/3.0**

This course provides an overview of business law and introduces fundamental principles encountered in the business environment. Some of the topics include courts and jurisdiction, judicial, bankruptcy and organization, torts, crimes and intellectual property, contracts and e-commerce, liability, equal opportunity limited partnership and special partnership, employment, and e-filing.

Upon completion of this course, the student will be able to:

1. Understand constitutional law for business and e-commerce
2. Understand criminal law and cyber crimes
3. Define third-party rights and discharge
4. Understand key terms and concepts of the formation of sales and lease contracts
5. Identify credit, mortgages, and debtor's rights
6. Become acquainted with employment, worker protection, and immigration law
7. Identify and describe the different types of business entities such as: sole proprietorship, partnerships, corporations etc.

**Prerequisites:** None

## **COURSE 17**

### **ECON 2302**

#### **Principles of Microeconomics**

**48/0/0/3.0/3.0**

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.

Upon completion of this course, the student will be able to:

1. Explain the role of scarcity, specialization, opportunity cost and cost/benefit analysis in economic decision-making.
2. Identify the determinants of supply and demand; demonstrate the impact of shifts in both market supply and demand curves on equilibrium price and output.
3. Summarize the law of diminishing marginal utility; describe the process of utility maximization.
4. Calculate supply and demand elasticities, identify the determinants of price elasticity of demand and supply, and demonstrate the relationship between elasticity and total revenue.
5. Describe the production function and the Law of Diminishing Marginal Productivity; calculate and graph short-run and long-run costs of production.
6. Identify the four market structures by characteristics; calculate and graph the profit maximizing price and quantity in the output markets by use of marginal analysis.
7. Determine the profit maximizing price and quantity of resources in factor markets under perfect and imperfect competition by use of marginal analysis.
8. Describe governmental efforts to address market failure such as monopoly power, externalities, and public goods.
9. Identify the benefits of free trade using the concept of comparative advantage.

**Prerequisites:** ECON 2301 Principles of Macroeconomics

## **COURSE 18**

### **MATH 1324**

#### **Mathematics for Business & Social Sciences**

**48/0/0/3.0/3.0**

This course explores the rich concepts and applications for students in business, management, natural and social sciences. Students will learn to apply mathematics concepts involving linear equations, quadratic equations, functions and graphs, inequalities, simple and compound interest, annuities, matrices, and probabilities.

Upon completion of this course, the student will be able to:

1. Set up and solve systems of equations using matrix methods
2. Perform operations with matrices
3. Set up and solve linear programming applications using geometric and simplex methods
4. Compute probabilities using principles of sets and counting
5. Analyze data using basic principles of statistics
6. Solve financial applications involving simple and compound interest and annuities

**Prerequisites:** MATH 1312 Algebra

**COURSE 19****PSYC 2301****General Psychology****48/0/0/3.0/3.0**

The student will be introduced to the basic principles of psychology and apply those principles to a particular field of knowledge or activity.

Upon completion of this course, the student will be able to:

1. Understand human developmental phases.
2. Explain the basic psychological concepts.
3. Appreciate the theorists' explanations of human behavior.
4. Describe the therapeutic approaches
5. Identify psychological disorders, their causes and treatments
6. Apply psychological principles to understanding and working with co-workers and clients.

**Prerequisites:** None

**COURSE 20****BUSG 2311****Entrepreneurship and Innovation****58/38/0/5.0/5.0**

This course is an introduction to Entrepreneurship and Innovation. Students will develop successful business ideas, learn how to manage and grow an entrepreneurial firm, learn how to conduct a feasibility analysis, how to write and present a business plan, how to develop a business model, and the ethical and legal issues facing new firms. Prepares students to become creative, thoughtful, and determined professionals who are able to apply their analytical skills in developing well-planned and socially responsible ventures and innovations which they can persuasively present to executive audiences.

Upon completion of this course, the student will be able to:

1. Define the characteristics of successful entrepreneurs
2. Recognize opportunities and generate ideas
3. Conduct a feasibility analysis
4. Write and present a business plan
5. Understand industry and competitor analysis
6. Develop an effective business model
7. Describe ethical and legal issues facing new firms
8. Describe how to obtain business licenses and permits
9. Understand an introduction to financial management
10. Create a new-venture team
11. Understand the importance of getting financing or funding
12. Understand how to select a market and establish a position
13. Define intellectual property and patents
14. Describe franchising and how it works
15. Brainstorm, create and utilize new ideas.
16. Understand how innovation changes the world.

**Prerequisites:** None

**COURSE 21****BMGT 3321****Production/Operation Management****48/48/0/4.5/4.5**

This course examines the functional area of production and operations management in the manufacturing industry. Topics include decision-making, capacity planning, aggregate planning, forecasting, and inventory management, distribution planning, materials requirements planning (MRP), project management and quality control.

Upon completion of this course, the student will be able to:

1. Recognize the importance of quality control.
2. Identify product and process designs.
3. Implement productivity improvement.
4. Understand Quality Management
5. Understand new product development
6. Apply forecasting methods
7. Apply capacity planning measures

**Prerequisites:** None

## **COURSE 22**

### **IBUS 3300**

#### **Logistics Management**

**48/0/0/3.0/3.0**

This course explores the rich concepts and applications of Contemporary Logistics and all its components. It will include Financial Logistics, Inventory Management Logistics, Warehouse Management Logistics, Packing and Materials Handling Logistics, and Transportation Logistics. It will also address how today's technology affects the overall environment of Logistics, organizational and managerial issues in Logistics, the importance of facility location, and transportation infrastructures.

Upon completion of this course, the student will be able to:

1. Describe a supply chain and define supply chain management.
2. Describe the opportunities and challenges of global sourcing.
3. Explain the importance of supplier partnerships.
4. Explain the role of demand forecasting.
5. Describe an ERP system and understand its advantages & Disadvantages.
6. Describe the four basic types of inventories & their functions.
7. Compare & contrast the various modes of transportation and their impacts on cost.
8. Understand the various causes of the bullwhip effect and how they impact process.

**Prerequisites:** None

## **COURSE 23**

### **HIST 1301**

#### **United States History I**

**48/0/0/3.0/3.0**

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.

Upon completion of this course, the student will be able to:

1. Create an argument through the use of historical evidence.
2. Analyze and interpret primary and secondary sources.
3. Analyze the effects of historical, social, political, economic, cultural, and global forces on this period of United States history.

**Prerequisites:** None

## **COURSE 24**

### **HIST 1302**

#### **United States History II**

**48/0/0/3.0/3.0**

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.

Upon completion of this course, the student will be able to:

1. Create an argument through the use of historical evidence.
2. Analyze and interpret primary and secondary sources.



3. Analyze the effects of historical, social, political, economic, cultural, and global forces on this period of United States history.

**Prerequisites: HIST 1301 United States History I**

## **COURSE 25**

### **LSSY 3310**

#### **Principles of Lean Six Sigma**

**48/0/0/3.0/3.0**

The course is designed to introduce the student to the world of Lean Six Sigma. Lean Six Sigma is a method that provides organizations tools to improve the capability of their business processes. The increase in performance and decrease in process variation lead to defect reduction and improvement in profits, employee morale, and quality of products or services. It adopts the approach of advancing the concept and potential of using Six Sigma tools and methodologies within an organization. Also, students will develop skills necessary to identify, monitor and control “profit-eating” practices in a process.

Upon completion of this course, the student will be able to:

1. Identify the role of a Lean Six Sigma Yellow Belt within the organization.
2. Participate as a project team member.
3. Review process improvements that support the project.
4. Understand Process Concepts and Variation
5. Understand Six Sigma Metrics.

**Prerequisites: None**

## **COURSE 26**

### **LSSG 3311**

#### **Applied Lean Six Sigma**

**48/0/48/4.5/4.5**

The Lean Six Sigma Green Belt course is designed to present the role of a Green Belt who operates in support of or under the supervision of a Six Sigma Black Belt, analyzes and solves quality problems and is involved in quality improvement projects. The course teaches the student define-measure-analyze-improve-control methodology using case studies from several industries. Also, students will learn to define improvement projects to satisfy the customer and reduce variation. Upon completion of this course, the student will be able to:

1. Analyze and solve quality problems.
2. Get involved in quality or continuous improvement projects.
3. Demonstrate knowledge in Six Sigma tools and processes.
4. Understand the DMAIC methodology (Define, Measure, Analyze, Improve, and Control).

**Prerequisites: LSSY 3310 Principles of Lean Six Sigma**

## **COURSE 27**

### **MATH 1342**

#### **Statistics**

**48/0/0/3.0/3.0**

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.

Upon completion of this course, the student will be able to:

1. Explain the use of data collection and statistics as tools to reach reasonable conclusions.
2. Recognize, examine and interpret the basic principles of describing and presenting data.
3. Compute and interpret empirical and theoretical probabilities using the rules of probabilities and combinatorics.
4. Explain the role of probability in statistics.
5. Examine, analyze and compare various sampling distributions for both discrete and continuous random variables.
6. Describe and compute confidence intervals.
7. Solve linear regression and correlation problems.
8. Perform hypothesis testing using statistical methods.

**Prerequisites: MATH 1324 Mathematics for Business & Social Sciences**

## **COURSE 28**

### **FINA 3315**

## **Business Finance**

### **48/0/0/3.0/3.0**

This course provides an overview of business financial management. Emphasis is on financial statement analysis, time value of money, management of cash flow, risk and return, and sources of financing. Upon completion, students should be able to interpret and apply the principles of financial management.

Upon completion of this course, the student will be able to:

1. Fulfill the roles, responsibilities and expectations required of the position.
2. Comprehend and apply the principles of the communication process, both as a sender and receiver of messages.
3. Demonstrate the ability to express oneself in clear and concise ways.
4. Determine the most appropriate form of communication to satisfy the intent of the message.
5. Demonstrate the ability to objectively identify and assess resources that can provide accurate information.
6. Apply planning techniques and monitor progress toward achievement.
7. Apply problem-solving techniques applicable to business decision making.
8. Recognize and comprehend the organization's goals and objectives.
9. Model and promote behavior and work habits that the organization strives to attain.
10. Apply the principles of business finance which support the overall financial strategy of the organization.
11. Apply the standard and accepted accounting principles when reporting, recording, and projecting financial information/
12. Understand the structure of financial statements.
13. Demonstrate an understanding of the basic principles of taxation relevant to business activities.
14. Effectively utilize the time value of money, and financial return and risk concepts to conduct professional financial analyses.
15. Identify the primary determinants of market interest rates and describe the responses to changes to those rates in terms of supply and demand for loanable funds.

**Prerequisites: None**

## **COURSE 29**

### **BMGT 3301**

#### **Project Management**

### **48/0/0/3.0/3.0**

The goal of this course is to provide concepts and skills that are used by managers to propose, plan, secure resources, budget, and lead project teams to successful completions of their projects. Students will understand why organizations have developed a formal project management process to gain a competitive advantage.

Upon completion of this course, the student will be able to:

1. Understand why project management is becoming such a powerful and popular practice in business
2. Recognize the key motivators that are pushing companies to adopt project management practices
3. Understand how effective project management contributes to achieving strategic objectives
4. Understand how to employ checklists and simple scoring models to select projects
5. Employ financial analysis and options analysis to evaluate the potential for new project investments
6. Distinguish between the role of a manager and the characteristics of a leader
7. Describe the roles of changes and configuration management in assessing project scope
8. Understand the steps involved in project team building
9. Describe how to achieve cross-functional cooperation in teams
10. Recognize the appropriateness of applying contingency funds for cost estimation
11. Calculate the probability of a project finishing on time under PERT estimates
12. Construct and comprehend Gantt charts
13. Apply critical chain project management to project portfolios

**Prerequisites: None**

## **COURSE 30**

### **ENGL 1302**

#### **Research Analysis**

### **48/0/0/3.0/3.0**

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.

Upon completion of this course, the student will be able to:

1. Demonstrate knowledge of individual and collaborative research processes.
2. Develop ideas and synthesize primary and secondary sources within focused academic arguments, including one or more research-based essays.
3. Analyze, interpret, and evaluate a variety of texts for the ethical and logical uses of evidence.

4. Write in a style that clearly communicates meaning, builds credibility, and inspires belief or action.
5. Apply the conventions of style manuals for specific academic disciplines (e.g., APA, CMS, MLA, etc.)

**Prerequisites:** None

## **COURSE 31**

### **BMGT 4333**

#### **Non-Profit Organization Management**

**48/0/0/3.0/3.0**

This course examines management principles and practice for nonprofit organizations. Consideration is given to leadership in a nonprofit environment, the motivation of staff and volunteers, the role of the founder and the board, and types and structures of nonprofit organizations.

Upon completion of this course, the student will be able to:

1. Discuss nonprofit structure.
2. Describe nonprofit governance and the relationship between the board and executive director.
3. Describe nonprofit servant leadership.
4. Outline key ethical issues for managers, staff and volunteers.
5. Outline the key financial and legal issues for nonprofit organizations.
6. Discuss the importance of marketing and communication and social media.
7. Explain the basics of nonprofit fundraising and grant writing process.
8. Outline methods of nonprofit performance assessment.

**Prerequisites:** None

## **COURSE 32**

### **BMGT 4302**

#### **HR Management Development**

**48/0/0/3.0/3.0**

This course is concerned with the development of knowledge and skills needed for productive and satisfying work in which in turn is critical to organizational success. As a key to human resource specialty area, it provides a vital service for today's employees, employers, corporations and society.

Upon completion of this course, the student will be able to:

1. Introduction to Human Resource Development (HRD).
2. Influences on employee behavior
3. Learning and HRD.
4. Assessing HRD needs.
5. Designing effective HRD programs.
6. Implementing HRD programs and evaluating HRD programs.
7. Onboarding employee socialization and orientation.
8. Skills and technical training.
9. Coaching and performance management.
10. Employee counseling, well-being, and wellness.
11. Career management and development.
12. Management and development.
13. Organization development and change.

**Prerequisites:** HRPO 2301 Human Resources Management

## **COURSE 33**

### **BMGT 4020**

#### **E-Business**

**48/0/0/3.0/3.0**

E-business focuses on the opportunities that IT can provide when private and public organizations interact with their customers, clients or stakeholders. You will learn to understand and develop IT-based concepts that match the needs of the users, but also how to implement and commercialize them. This allows you to create services, apps and other solutions that support the strategy and desired goal for both companies and society at large. Whether you're already working in e-commerce/e-business or hoping to launch or grow an online business, this course will help you become better equipped. Get the skills and knowledge you need for e-commerce (buying and selling over the Internet) and e-business (conducting business using Internet technology). You'll explore best practices and learn to take on a more meaningful role as a practitioner, manager or leader.

Upon completion of this course, the student will be able to:

1. Identify and explain the variety of e-business models, i.e., business to business, business to customer, consumer to consumer;
2. Determine an appropriate e-business model and apply it to a specific business;
3. Explain the benefits and limitations to using e-business models in relation to traditional models;
4. Identify and describe the four P's for a specific product;
5. Explain the implementation of the 4P's to a specific target market;

6. Identify the location of a specific product within the lifecycle;
7. Determine the product's level of competition, profit/loss, marketing approach, etc. that are characteristic of that stage.
8. Define and describe the term "Internet economy".
9. Define and describe characteristics of a traditional market economy;
10. Apply the laws of supply and demand to economic transactions between producers and consumers; Identify a company's position in the channel and explain the relationship the company has with other channel members.
11. Articulate the scope of the overall channel.
12. Describe the characteristic of each form of business ownership.
13. Identify and justify the appropriate business format for a specific business.
14. Identify the severity of down-turns in the business cycle on traditional vs. Internet businesses

**Prerequisites: None**

## **COURSE 34**

### **BMGT 4301**

#### **Advanced Project Management**

**48/48/0/4.5/4.5**

The course covers the five process groups of project management: Initiating, Planning, Executing, Monitoring, and Controlling, and Closing. The course focuses on the concepts and skills required or project managers to successfully manage a project.

Upon completion of this course, the student will be able to:

1. Recognize the appropriateness of applying contingency funds for cost estimation
2. Calculate the probability of a project finishing on time under PERT estimates
3. Construct and comprehend Gantt charts
4. Incorporate various life cycles and methodologies.
5. Identify program/portfolio management.
6. Apply critical chain project management to project portfolios

**Prerequisites: BMGT 3301 Project Management**

## **COURSE 35**

### **PHIL 1301**

#### **Introduction to Philosophy**

**48/0/0/3.0/3.0**

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.

Upon completion of this course, the student will be able to:

1. Read, analyze, and critique philosophical texts.
2. Demonstrate knowledge of key concepts, major arguments, problems, and terminology in philosophy.
3. Present logically persuasive arguments both orally and in writing.
4. Demonstrate critical thinking skills in evaluation and application of philosophical concepts to various aspects of life.
5. Evaluate the personal and social responsibilities of living in a diverse world.

**Prerequisites: None**

## **COURSE 36**

### **BMGT 4325**

#### **International Business Management**

**48/0/0/3.0/3.0**

This course provides an overview of the international organizations and the effects of the foreign environment on international business. The course will focus on cultural differences; theories of international trade and economic development; international finance; marketing internationally and practical applications of starting and maintaining international business relationships.

Upon completion of this course, the student will be able to:

1. Assess the environment: Political, Economic, Legal, and technological.
2. Understand the role of culture, communicating, cross-cultural negotiation and decision making.
3. Formulate strategy: Strategic Alliances, Small Business, Emerging Economy firms
4. Identify Organization Structure and Control Systems.
5. Apply staffing, training, and compensation for global operations.

**Prerequisites: None**

## **COURSE 37**

### **ACNT 4312**

#### **Tax Accounting**

#### **48/0/0/3.0/3.0**

This course covers the fundamentals of Federal income tax and how it influences taxpayer decisions. The course is designed to acquaint the student with the working and concepts of the federal tax law specifically to individuals and business entities. The course explains principles and concepts of federal income tax for individuals, corporations, and partnerships; underlying rationale; advance planning to minimize tax impact.

Upon completion of this course, the student will be able to:

1. Explain the primary objectives of the federal income tax law.
2. Use components of the tax formula to calculate an individual's federal income tax liability.
3. Differentiate which sources of income are considered inclusions in gross income and those which are considered exclusions from gross income.
4. Determine which sources of expenses incurred or paid are deductible for federal income tax purposes.
5. Categorize allowable deductions between business and non-business deductions.
6. Calculate depreciation and cost recovery deductions.
7. Identify and calculate the various tax credits allowed by law.
8. Determine the tax basis of property.
9. Differentiate between realization and recognition of gain or loss in property transactions.
10. Calculate the realized and recognized gain or loss in property transactions.
11. Define capital assets.
12. Explain and apply the tax rules for calculating and reporting an individual taxpayer's capital gains and losses.
13. Demonstrate the ability to conduct basic research using online data bases.

**Prerequisites: ACNT 1525 Accounting Principles I**

#### **COURSE 38**

##### **ADVT 4336**

##### **Advertising Creative Strategy & Execution**

#### **48/0/0/3.0/3.0**

Development of effective creative campaigns. Students will design advertisements for print, broadcast, interactive, and specialty media that meet specific campaign objectives. Students will cover advertising as an institution, strategy development, and creative execution in the advertising media. The coursework provides a basic understanding of the advertising process, advertising's role in society, its procedures and practices

Upon completion of this course, the student will be able to:

1. What are unexpected but relevant selling messages
2. What identity and image strategy does to products?
3. The basis for effective creative work
4. Strategy for reaching out to an ever-changing marketplace
5. Define Strategy and its components
6. How to stay up with the 21st century market
7. How to connect to the consumer's heart and mind
8. How to design and create
9. The power of radio, television, and social media
10. Define Direct Marketing and its new technology
11. Government regulations on advertising

**Prerequisites: MRKG 1311 Principles of Marketing**

#### **COURSE 39**

##### **BMGT 4300**

##### **Capstone**

#### **48/0/0/3.0/3.0**

Students will complete a variety of projects and written assignments designed to encourage self-analysis of career and intellectual interests in the student's chosen career field based on the three minors selected. This information will be used to develop a detailed project proposal and complete a final capstone project linking the three minor areas of study of the student's personalized BS degree plan with career and intellectual interests. The final written project will consist of research, reviews, and analysis targeted towards a specified audience. A presentation of the project is required. Writing Enhanced.

Upon completion of this course, the student will be able to:

1. The Strategy Making Process.
2. Stakeholders, the Mission, Governance, and Business Ethics.
3. External Analysis: The identification of opportunities and threats.
4. Building competitive advantage.
5. Business-Level Strategy and Competitive Positioning.
6. Strategy in the Global Environment.
7. Corporate-Level Strategy and Long-Run Profitability.

8. Strategic Change: Implementing Strategies to Build and Develop a Company.
9. Implementing Strategy through Organization Design.

**Prerequisites: None**

## **COURSE 40**

### **BMGT 4388**

#### **Professionalism Development and Internship**

**32/16/180/6.0/6.0**

This course focuses on career preparation, job search tools and resources, and professionalism. Student will also perform in a mock interview with a real-world employer that will grade them on their interviewing skills. The mock interview will also prepare the students for interviews in their job seeking endeavors. Internship will integrate the knowledge and skills students learned in the program. Working under the direction and supervision of business owners, managers, supervisors, or industry experts, students maintain ethical and professional work standards while applying classroom learning. Students will receive actual hands-on application in a workplace environment.

Upon completion of this course, the student will be able to:

1. Conduct a targeted job search, including a realistic job preview
2. Create a job search portfolio
3. Identify references to be used in your job search and sources for job lead
4. Identify the steps for building a resume package and create a resume and cover letter
5. Demonstrate strategies to implement when invited to an interview
6. Discuss salary negotiation strategies
7. Define a team and its functions
8. Conduct collaborative work in the community
9. Recognize individual and cultural differences and respond appropriately
10. Demonstrate initiative and interest in performing the duties assigned
11. Maintain good attendance and punctuality
12. Maintain a professional appearance and ethical behavior
13. Demonstrate competency in Word, Excel, Human Resource Management, Marketing, Advertising, Accounting, Payroll and Project Management.
14. Recognize ethical decision making
15. Use organizational skills and complete projects assigned on a timely basis
16. Demonstrate ability to work in a team, meet deadlines and keeping work area clean and organized

**Prerequisites: None**

**Note: While every effort will be made to schedule internship experiences for students in the evening program to coincide with their school schedule, most companies in the business field operate during regular business hours, which is 8:00 a.m. to 5:00 p.m. Therefore, evening students need to be prepared to attend their internships during morning and/or afternoon hours in order to successfully complete this program requirement.**

# BACHELOR OF SCIENCE IN NURSING

Available at 9451 Diana Drive Campus



## CAREER OPPORTUNITIES FOR BSN GRADUATE NURSES

According to the American Association of Colleges of Nursing, graduates of a BSN program are more likely to have job offers at the time of graduation compared with graduates in other fields. Estimate from Texas State Department of Health Services (2016), shows that by 2030, while projected supply of RN FTEs is expected to grow by 35.4%, demand for nurses will grow by 53.8%, leaving a deficit of 59, 970 RN FTEs.

Here's a look at some of the potential career opportunities for nurses available to BSN graduates.

- Hospital staff nurse
- Home Health nurse
- Nursing care facilities
- Physicians' offices
- Genetics nurse
- Critical care nurse
- Public health nurse
- Forensic nurse



Labor Market Information (2016 thru 2026 Projections)

### Texas Labor Market Information

Texas Employment 2016: 210,775  
Projected Texas Employment 2026: 261,607  
Absolute Change 2016-2026: 50,832  
Percent Change 2016-2026: 24.10  
Average Hourly Wage 2017: \$34.65  
Average Openings per year due to Replacement: 16,980  
Average Openings per year due to Growth: 261,607

### National Labor Market Information

National Employment 2016: 2,955,200  
Projected National Employment 2026: 3,393,200  
Absolute Change 2016-2026: 438,100  
Percent Change 2016-2026: 15%  
Average Hourly Wage 2017: \$33.75  
Average Openings per year due to Replacement: Not Available  
Average Openings per year due to Growth: Not Available

Source: The Labor Market & Career Information Department (LMCI) of the Texas Workforce Commission  
[www.lmci.state.tx.us](http://www.lmci.state.tx.us)

## ENTRANCE REQUIREMENTS FOR APPLICANTS PURSUING THE NURSING PROGRAM

### Admissions

Requirements for admission to WTC's Bachelor of Science in Nursing program is as follows:

1. The applicant must be at least 18 years of age at the time of start of the program.
2. The applicant must have a clean FBI criminal background check to be accepted into the nursing program.
3. Official high school transcripts must be received directly from the high school, with a 2.75 CGPA or higher, and sent to the Dean of Nursing in order to process the application. Prospective students may present a copy of their high school transcript to the admissions representative for initial evaluation, but the application will not be processed until an office transcript is received.
  - A GED will be accepted in lieu of a high school transcript.
  - The completion of 12 semester credit hours or more at the post-secondary level will be accepted in lieu of high school with a 2.75 CGPA or higher. The official transcript must be from an accredited school recognized by the Department of Education.
  - Official transcripts must be sent directly to WTC from the school.
4. Applicants must achieve a minimum score of 60% in Reading, 60% in Math, 60% in English and a minimum of 50% in Science of the Test of Essential Academic Skills (TEAS) exam. Applicants may register to take the TEAS exam at [www.atitest.com](http://www.atitest.com).
5. The applicant must be able to satisfy, with or without reasonable accommodation, the physical, mental and sensory requirements listed in the student health form.
6. A complete health clearance from a healthcare provider
7. Drug screen test with negative result
8. Immunization requirements include measles, mumps, rubella, varicella, hepatitis B, Tdap, TB test (Quantiferon TB Gold in-Tube), and seasonal flu shots.
9. Applicants must go through a panel interview

The ATI TEAS test is comprised of 170 questions set up in a multiple-choice format with four-option answers. Questions are designed to test the basic academic skills the tester will need to perform in class in the areas of: Reading, Math, Science, English and Language Usage. The total score is an adjusted percent correct score, which ranges from 0.0% to 100%. It is an equated score generated by the information from the entire set of 150 scored questions. The nursing program director ranks applicants based on qualifying (TEAS) scores and makes the selection decision for admission. Admission will be denied to an applicant who fails to meet all the admission requirements. The campus documents the basis for denial. A letter of denial will be sent to the candidate. Information on admission, transfer, progression, graduation and appeal procedures could be found in the college catalog. Western Technical College, Nursing program will not admit any student to the nursing program that does not have a clear Criminal Background Check as described by the Texas Board of Nursing. The applicant must complete the eligibility process prior to admission.

### Immunization Requirement

Immunization requirements are based on the Centers for Disease Control and Prevention (CDC) immunization recommendations for health-care workers. Student and faculty, exceptions to the immunization policy will be determined by the student/faculty's primary health care provider documentation and in consultation with the clinical agency.

The following is a list of necessary immunizations for all nursing students attending the nursing program. Proof of immunization or positive titers must be documented in the student record and may be reflected in a shot record, physical examination report, lab report, or a letter from a health care provider. All immunizations will be completed prior to the start of upper division nursing courses. Western Tech College complies with all state health care provider laws and regulations.

**Tetanus (Td or DTP):** One immunization within the past 10 years

**Measles, Mumps, Rubella (MMR):** Two inoculations from childhood should be shown on the records. If only one is shown, then a recent inoculation as an adult must also be shown. If none from childhood can be shown, then one as an adult is acceptable. Proof of immunity may also be shown by the positive titer result.

**Varicella (also known as chickenpox):** Two inoculations given four weeks apart or provide proof of immunity by the positive titer result.

**Hepatitis B (Hep. B):** A series of 3 injections. Injection #1 is given, #2 is given 30 to 60 days after injection #1. Injection #3 is given 4 to 6 months after #2. If the person waits too long between any of the injections, they may have to begin the entire series over again. Proof of immunity may also be shown with positive titer results.

**Tuberculosis Skin Test or Chest X-Ray (TB, PPD):** Skin test results or chest x-ray result within 30 days of the class start. If the student tested positive to the skin test or is allergic, they must show the results of a negative chest x-ray every two years.

Should the student be allergic to any of the above immunizations, they must provide a letter from a physician stating this. Women who are pregnant or with certain health conditions should not be immunized, again, a letter must be provided stating this.



Additional immunizations or health screening may be required to meet clinical agency requirements. Students are responsible for keeping their original immunization record and providing the campus with a copy for their student record.

### **Transfer Credit**

Applicants who wish to have their previous education considered for credit must do so prior to being accepted and prior to starting the program. Students that have taken general education coursework over the last ten (10) years, may be entitled to course exemption credit provided that the grade(s) earned are a “B” or higher. General education courses that are nursing related (A & P, Microbiology, Nutrition, Pathophysiology) and that are considered for credit will need to be retaken even if financial credit is granted.

- Students that have taken non-general education courses over the last five (5) years, may be entitled to course exemption credit provided they earned a B or higher. Although students receiving exemptions will receive financial credit, they will still be required to retake the courses.
- Official transcript(s) will be required and must be received prior to starting the BSN program.
- **Please note:** Official transcript(s) must come directly from the college and sent to the Dean of Nursing.

Upon successful completion of all admission requirements, the school will promptly notify the student whether he or she is admitted into the nursing program. If the number of qualified applicants for admission to the BSN program exceeds the space available in the program, applicants will be ranked based on the composite score each applicant received on the TEAS Exam. Students accepted to the nursing program have to meet the requirements established by WTC’s nursing program, admission policy. Applicants should comply with all required eligibility information and policies of TBON Rule 215.8 to be accepted to the nursing program. The admission policies are included in the College Catalog and the Student Handbook.

The catalog is an informational document that is designed to provide prospective students and their parents and/or other interested persons with pertinent information about the campus policies and programs. The catalog as well as the Student Handbook will be accessible on the college website upon program approval and will be distributed to all prospective and admitted nursing students. In addition, each student will also receive a USB with all the above-mentioned information.

The admissions policy adheres to the nursing program mission statements through the application and testing process that seeks to ensure that students accepted to the program possess the ability to prepare for career opportunities in their chosen field. All applicants must successfully complete the Test of Essential Academic Skills (TEAS) exam to be considered for admission.

## **POLICIES & STANDARDS SPECIFIC TO THE NURSING PROGRAM**

### **Academic Advisement**

Academic advisement is under the direction and guidance of the faculty of the course in which the student is currently enrolled. Appointments may be scheduled at a time agreeable to both teacher and student or during faculty office hours. Advising appointments should be made in a timely manner to facilitate problem solving. The faculty will provide written advising:

1. when the student is in danger of failing either the theory, skills or clinical component of any course
2. when the student has an average below 75% at mid-term, and thereafter, prior to the final grade
3. when the student is failing to meet the course/clinical objectives
4. any time unsafe clinical practice occurs

The student and faculty are required to sign and date the advisement form to document notification and subsequent advising regarding the student’s status in the course. Academic advising records should include:

1. present standing in the course
2. review of the time and requirements remaining in the course
3. input on the problem from the faculty and student
4. faculty’s specific suggestions for success
5. student’s plans for improvement
6. specific date or time when progress will be reviewed again

The advisement form will be filed in the student’s record and documented in the campus learning management system after the advising session.

### **Attendance Advisement**

Attendance advising is under the direction of the faculty of the courses in which the student is currently enrolled with guidance from the Dean. Refer to the attendance policy in the school handbook for specific criteria.

The faculty initiates advising when the student shows a pattern of absenteeism and/or tardiness. The faculty will complete the advisement form each time advising occurs to include:

1. a statement of the hours missed
2. input on the problem from the student and the faculty
3. student’s plans for improvement
4. consequences if the student continues to miss school

The form will be filed in the student’s record and documented in the campus learning management system. If the attendance/tardy issues persist, the faculty may refer the student to the Dean for further advising.

## Professional Behavior

Professional behavior advising is under the direction of the faculty of the courses in which the student is currently enrolled with guidance from the Dean. Refer to the conduct policy in the school catalog.

The faculty initiates advising any time a violation of conduct occurs. An advisement form will be completed and should include:

1. a description of the student's behavior
2. notation of the course/school policy of the standard violated (may cite the page in the school catalog)
3. student's plans for improvement
4. statement of consequences should the behavior occur again

The advisement form will be forwarded to the Dean for review. The form will be filed in the student's record and documented in the campus learning management system. The faculty will meet with the Dean prior to student advising whenever a critical violation of student conduct occurs.

## Advising for Nonacademic Issues

A student may seek personal advising with any faculty member for nonacademic issues affecting their success in school. Students may be referred to a variety of community agencies. Information and related notes obtained through personal advising sessions are considered privileged and will be kept confidential by the faculty involved. If the faculty believes that information should be shared with other individuals, the faculty member will discuss this with the student and obtain their consent. Exceptions to confidentiality are those with legal implications and/or when situations are potentially dangerous to the student and/or others.

## Test Environment

It is the policy of WTC to administer examinations in such a manner that the student's performance accurately reflects his/her knowledge and understanding of course objectives and content materials. Each faculty has a responsibility to ensure that examinations are conducted in a fair manner and to reflect each student's individual ability. Faculty will comply with this policy by proctoring all examinations. All possible measures will be taken to provide a comfortable, quiet environment for the students taking the exam. Faculty will take corrective action, as they deem necessary, to guarantee that exams are not compromised in any way.

1. Students may only have one (1) piece of paper issued by proctor. Students will also be issued a colored piece of cardstock to cover answers during an exam.
2. Backpacks, purses, phones, hats, snacks, and water must be placed in front of the classroom
3. All phones must be on mute
4. Calculators are allowed in all exams and quizzes; however, students may only use calculators issued by WT College
5. Faculty will monitor all exams
6. No talking
7. Faculty has the right to move students if they see wandering eyes
8. Once exam has begun students may not approach faculty to ask questions
9. Students may not leave the room once the exam has begun
10. Exams will be timed and must be completed at the designated time. This will require students to be present and ready to begin at the scheduled time. If a student arrives after the designated time, they will only have the remaining time to complete the exam.
11. After completing an exam, students will leave the classroom and not return until instructed by the Faculty
12. Students who are observed to violate above criteria will be asked to leave the exam, given no credit, and reported for a violation of the Student Code of Conduct.
13. WT provides accommodation for testing if proper documentation is provided by the student.

## Test Review

Review of exam will be provided by the course instructor to cover missed questions. The student who would like to review his/her exam should approach the faculty and make an appointment to review the test. Test reviews should be requested within one week from the day of the exam.

## Grading Scale

Letter Grade	Baccalaureate Nursing Major Definition	Point Scale	GPA Value
A	Excellent	90 - 100	4.0
B	Above Average	80 - 89	3.0
C+	Average	74.5 - 79	2.5

F	Failure - Not Passing	74.4 or below	0.0
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Because the nature of course work and clinical application in Nursing Program courses, faculty members believe nursing students must be held to a higher standard by the scope of responsibility and accountability for people's lives in their care.

WTC Nursing Program adheres to the following:

1. Passing a class requires a minimum 74.5% cumulative weighted average.
2. Assignments are to be turned in on time. Failure to do so will result in a penalty consistent with the policy stated in course syllabi. A penalty of 10% may be deducted for each calendar day late for a total of three days. If a student fails to submit the assignment after the three-day period, it will result in a 0 (zero) grade. No points will be given for assignments submitted three days past due date, but submission is still required.
3. All skills in Psychomotor Skills Checklist must be completed and with a passing grade by the end of course.
4. Extra points are not awarded on nursing coursework.

## Grading System

### Scholastic Standards

Academic status in the Nursing Program is established by grades as follows:

#### Satisfactory Standing

A grade of 74.5% ("C+") or above in each course, **and**

An evaluation of "satisfactory" in each clinical rotation and skills laboratory performance

#### Academic Warning

A mid-term grade below 74.5% in any course, **or**

A mid-term evaluation of "unsatisfactory" in a clinical rotation or skills laboratory performance

#### Unsatisfactory Standing

A final grade below 74.5% in any course, **or**

A final evaluation of "fail" in a clinical rotation or skills laboratory performance

In the Nursing Program, students must successfully complete all nursing courses within a semester before advancing to the next semester. Therefore, even one failed course will result in a student being retained at that level until they re-take and successfully complete with a "C+" or higher. The student is only allowed one course failure in the program. If a second failure occurs either in the same or a different course, the student is withdrawn and will not be readmitted.

The nursing curriculum consists of a variety of courses that may be didactic only, and some with skills laboratory instruction and clinical performance. Grades are based on performance on assignments; examinations; quizzes; written work; and evaluation of skills lab and clinical activities. Attendance in skills laboratory and patient clinical care is mandatory because the learning activities cannot be easily rescheduled for make-up. The weighting of grades is defined in each syllabus. Evaluation of academic performance is ongoing for each course and grades are assigned at the completion of a course. In all didactic, a 75% average is required to pass (see scale above). Courses which are patient care clinics and skills laboratory require a "pass" rating for the final evaluation period for all objectives as well as a 74.5% course average.

The grading criteria for each course is contained in each course syllabus and will be thoroughly explained at the beginning of the course by the instructor.

## Procedure

Students will receive grades on exams and quizzes usually no more than 48 hours after completing them. Students should maintain a list of their grades and are expected to calculate their own current average in their courses. The instructor provides a grade report at mid-term and completion of the course to the students.

Students will receive individual advising if their progress is not satisfactory and may be placed on academic warning until the course is completed. Progress reports are issued every time a student fails a test and when the course average falls below 75%. Advising is mandatory when the student is failing a course at mid-term. Interim progress reports and academic reports that inform and place a student on probation will be documented on an advisement form. The student will sign the form and therefore, know they are not demonstrating satisfactory progression during a course.

Sampling of knowledge and skills through observation and critical thinking, questioning, and evaluation of the patient care plans are the processes to determine if students can deliver safe and effective care, thus meeting the clinical performance objectives. If a student demonstrates a lack of basic nursing knowledge and preparation for skills regarding their patient assignment or previously taught content, a student is questioned and observed more frequently. While providing care to patients in clinical settings, students are held accountable to the same standard of care as a licensed Registered Nurse in the State of Texas.

Clinical performance is communicated on a weekly basis when written work and performance is evaluated, whether this is in the patient care setting or the skills laboratory. A mid-term formative clinical evaluation is conducted with all students to notify them of their clinical performance status. This allows the student and instructor an opportunity to develop a plan for improvement if it is needed prior to the final evaluation. Clinical performance is evaluated on a pass/fail basis using the clinical evaluation tool with behavioral objectives that the student must pass by the final summative evaluation period as well as a numerical grade on assignments. Clinical performance also has a component of weekly written work and performance in which the student receives grades. All clinical evaluation tools will be retained in the student file at the end of the course. They must be signed by the student and the faculty.

## Uniform and Personal Appearance

Students are responsible for learning and observing the basic standards of appropriate dress, personal cleanliness, modesty and good grooming. Nursing students, by the nature of their chosen career, are required to wear a uniform and other item of dress that are not offensive or hazardous to the health and safety of themselves or others. Students doesn't only represent themselves in the community, but the Western Technical College's Nursing program as well. Students are expected to be in complete uniform with name tags visible always while in the clinical area. Students must abide by the dress code of the specific agency in which they are placed for clinical practicum; therefore, the clinical faculty will be judged of appropriate uniform in a given agency.

The following standards of clinical/skills laboratory dress and grooming will be expected and upheld by all nursing students:

1. Students are expected to practice daily hygiene, remaining free of offensive body and breath odors. Perfume and aftershave will not be used in the clinical area.
2. Uniform will be clean and free of wrinkles. The uniform should be loose enough to allow for the provision of patient care in a comfortable manner. Tight-fitting, torn or soiled uniforms are unacceptable. It is recommended the student wear a white crew neck t-shirt or turtleneck shirt under the scrub top. Shoes will be polished and have clean laces.
3. A white lab coat must be worn for agency visits or when obtaining assignments. WT College patch must be worn on the front upper left chest area with an identifying name tag. When wearing lab coats, females must wear skirts, dresses, or dress slacks; males must wear dress slacks and shirt. Jeans and tennis shoes not allowed. Lab coats are not to be worn during patient care activities.
4. Hair must be clean and neatly groomed, worn above the shoulders or up off the neck and away from the face. Hair must not touch the clavicle area when leaning forward to ensure aseptic technique.
5. Hairstyle and coloring should be conservative with only natural hair colors allowed. Decorative hair accessories are not appropriate and will not be allowed.
6. Male students are expected to keep hair and facial hair neatly trimmed. An unshaven appearance is not allowed. Beards should be clean, neatly trimmed and not more than one inch in length. Mustaches should be clean, neatly trimmed and not extend below the upper lip level. Sideburns should be trimmed, evenly tapered and not to extend lower than the earlobe.
7. Make-up should be minimal, using conservative shades, with no false eyelashes. When in uniform, jewelry is limited to a wedding or engagement ring, one pair of small post earrings (no dangle or hoop earrings), and a watch with a second hand. One necklace may be worn if it is completely covered by the uniform top or undershirt.
8. Visible body piercing jewelry, i.e., eyebrows, nose, lip, or tongue, etc., is not acceptable.
9. Nails should be filed to a short length and be clean. Acrylic or other types of artificial nails are not allowed. Neutral colored nail polish is acceptable.
10. All tattoos will be covered.
11. Gum chewing will not be allowed.
12. Patients may be allergic or sensitive to fragrances and perfumes, please refrain from using these when in the clinical setting.
13. Students who smoke must be aware that many people are allergic to smoke and find cigarette odor objectionable. Students may smoke in designated areas only. Most health care facilities are non-smoking facilities.

The nursing student uniform for men and women will consist of:

1. Uniform of the WTC nursing program with the Western Tech College logo on the left chest.
2. Campus provided photo identification to be worn on the front of the scrub top above the left chest line.
3. Lab jacket or coat with WT College School of Nursing patch at the left chest.
4. Matching color or skin tone undergarments and matching socks or hose.
5. White nursing shoes with closed heels and toes; athletic shoes are acceptable if they are clean and all white.
6. A watch with a sweep second hand.

The student must have the following items in their possession when in the clinical area:

1. Black ball point pen and a black permanent felt-tip marker.
2. Stethoscope
3. Bandage scissors, approximately 6 inches long
4. A hemostat curved or straight
5. Penlight
6. Small pocket notebook
7. Any pertinent textbook or electronic resource needed to plan nursing care for assigned patients

Space in the clinical settings is limited. It is recommended that students store their belongings, including purses and valuables, in the trunk of their car. Bring to the clinical site only items what is necessary or as directed by your clinical faculty.

Any student who does not conform to the dress code standards is subject to dismissal from the clinical or laboratory area and will be counted absent.

## Graduation Requirements

A student who completes all required courses in the nursing program can apply for graduation. Graduation requirements include:

1. A student must attain an overall 3.0 cumulative grade point average for all courses and a 3.0 GPA on each nursing course, included in the Bachelor of Nursing Science program.
2. A student must successfully complete all required courses for the program within the maximum allowed time frame for completion.
3. At least 63% of the semester credit hours required to graduate from the nursing program must be earned at WTC.
4. A student must complete "graduation request" form and submit the completed form to the nursing office.

The college reserves the right to withhold official transcripts to a student until all financial obligations to the college have been fulfilled or satisfactory arrangements have been made. They must also attend and complete a financial aid exit interview. The student will be required to demonstrate an entry level degree of proficiency in each competency, outlined in each course throughout the programs. An inability to achieve the required level of competency will prevent the student from being able to graduate from Western Tech. In addition, all graduating students must attend a graduation clearance and complete a final clearance sheet before graduating. Students who fail to attend the graduation clearance must reschedule the clearance with the College Staff in order to be processed for graduation. Students will be allowed to pick up their degree/certificate of completion within approximately 4 weeks after their final completion date from the Registrar.

Students that graduate from the Nursing program will be awarded a Bachelor of Science degree.

### **Classroom and labs**

The campus has available a 10-bed Clinical Nursing Simulation Laboratory that is equipped with new furnishings, simulation mannequins, patient care monitors, technical equipment, and clinical teaching supplies. Total hours required for teaching, open practice time, skill competency testing, make-up time and clinical simulation have been placed in a lab usage model to assure that the skills lab has capacity to meet program needs at full enrollment. The maximum number of students in a classroom or laboratory will be 30.

### **Grievance Policy**

If a student feels that he or she has an issue or grievance which needs to be addressed, the student must first take the issue to an instructor, dean of nursing or other program administrators.

If the complaint cannot be adequately resolved there, the student must then address it, in writing, to the Campus President.

Schools accredited by the Accrediting Commission of Career Schools and Colleges must have a procedure and operational plan for handling student complaints. If a student does not feel that the college has adequately addressed a complaint or concern, the student may consider contacting the Accrediting Commission. All complaints considered by the Commission must be in written form, with permission, from the complainant(s) for the Commission to forward a copy of the complaint to the school for a response. The complainant(s) will be kept informed as to the status of the complaint as well as the final resolution by the Commission.

Please direct all inquiries to:

Accrediting Commission of Career Schools and Colleges  
2101 Wilson Blvd., Suite 302  
Arlington, VA 22201  
(703)247-4212  
[www.accsc.org](http://www.accsc.org)

A copy of the Commission Complaint Form is available at the school and may be obtained by contacting the Registrar, Administrative Officer or School President.

### **TECHNICAL STANDARDS AND ESSENTIAL FUNCTIONS**

To better prepare students planning to enter nursing, an understanding of the physical and mental requirements expected by employers is essential. The student is expected to meet the same professional abilities during clinical/lab instruction in the Nursing Program. Reasonable accommodations may be requested where appropriate according to student's disability. Students must be able to:

1. Demonstrate consistent ability to deliver safe competent nursing care.
2. Demonstrate ability to deliver care across the age spectrum with honesty, civility, integrity and non-discrimination.
3. Demonstrate effective communication and interpersonal skills.
4. Must be able to read and write in English and communicate verbally in English.
5. Demonstrate emotional stability and maturity in various circumstances through interpersonal relationships with staff, patients and visitors.
6. Demonstrate ability to differentiate odors and colors in the clinical setting.
7. Have normal/corrected vision and hearing within the normal range.
8. Demonstrate ability to direct and work in stressful, changing and high paced facilities demonstrating coping skills.

9. Demonstrate good body mechanics, lift/carry a minimum of twenty-five (25) lbs. independently and fifty (50) lbs. with assistance.
10. Demonstrate ability to tolerate intermittent sitting, standing, stooping and walking. Full range of motion is required.
11. Demonstrate good manual and finger dexterity.
12. Demonstrate working knowledge and ability to use computers.
13. Function to full extent as there are no "limited or light duty assignments"

Western Tech does not discriminate in admission or access to programs on the basis of any characteristic protected by law, including disability. Persons with disabilities are eligible for admission, as long as, they can carry out classroom, laboratory and clinical assignments; pass written, oral and practical examinations; and meet all requirements of the program and generally accepted requirements of the profession, with or without reasonable accommodation. Western Tech will make reasonable accommodations for disabilities. Applicants and students who require accommodation should contact the Campus Director and submit a written request for accommodation.

**BACHELOR OF SCIENCE IN NURSING  
COURSES 1-40**

**2235 CLOCK HOURS**

**120 SEMESTER CREDIT UNITS (TWC & THECB)**

**120 SEMESTER CREDIT HOURS  
(ACCSC)**

**EDUCATIONAL OBJECTIVES**

The Bachelor of Science in Nursing program at WTC provides students with the theory, laboratory and clinical experiences that will serve as preparation for an entry level position in registered nursing. Upon successful completion of the program, the graduate is eligible to take the NCLEX-RN (National Council Licensure Examination-RN) exam to obtain licensure, as required by the State of Texas to practice nursing. Nursing theory provides the foundation of the nursing practices and guides students with what and how to perform in clinical practices. The clinical portion of the program provides students with actual hands-on experience in giving basic – to - advanced nursing care to patients of all ages. Clinical experience, training is provided in skills simulation lab, in long-term treatment facilities, and at acute hospital settings.

The BSN program consists of 120 semester credit hours that is divided into 8 semesters, where the initial 3 semesters cover general education courses and the remaining 5 semesters cover the nursing major courses. The nursing program semester is 15 weeks long and the entire BSN program runs for 32 months from start to finish.

**TIME CODES**

The following time code is used on all courses to illustrate the amount of time students will spend in class or lab per course and the subsequent number of credit hours awarded.

45/0/3.0/3.0

Theory hours per course /

Lab hours per course /

Clinical hours per course/

Semester total hours per course/

**EXPECTED STUDENT OUTCOMES**

Upon completion of this program, each student will be able to do the following:

5. Integrate theory and knowledge of the science, social sciences, humanities, and nursing as a foundation for nursing practice.

6. Apply the nursing process to manage the care of individuals, families, and populations with respect for diversity in a variety of health care settings.
7. Demonstrate the inherent professional values and behaviors in the delivery of individual, families, and population centered care.
8. Demonstrate cultural sensitivity in meeting the physical and psychosocial needs of the client.
9. Analyze the effect of existing government policies on the health care delivery system.
10. Facilitate inter-professional and intra-professional communication and collaboration to improve practice, minimize risks, and optimize health outcomes.
11. Apply the competencies of leadership, quality improvement and patient safety to improve health outcomes for individuals, families, and populations.
12. Contribute to the development and implementation of a therapeutic teaching plan.
13. Critique current health delivery system, offering corrective improvement ideas.

**MISSION AND PHILOSOPHY**

***Mission Statement of the Nursing Program***

The nursing program mission is to prepare culturally sensitive professional nurses who are well versed in the delivery of safe, compassionate and holistic patient-centered care using evidence-based interventions and sound clinical judgment for individuals, families, populations and communities across the lifespan. We are committed to doing so through the application of an academically sound curriculum delivered by dedicated and exceptional educators. The mission of Western Technical College Nursing Program is incongruent with the mission of the college.

**LICENSURE EXAMINATION**

Approximately three months prior to graduation, the student will submit the required applications and fees in preparation for licensure. The application process is two-fold; first, the state board of nursing in Texas requires an application and fee to process the license, and secondly, the testing center, Pearson Vue, requires a separate application and testing fee to register the applicant to take the licensing exam. The dean of nursing will provide the students with the necessary

information to facilitate this process. Additionally, the state of Texas requires all applicants for the NCLEX-RN to pass the Texas Nursing Jurisprudence Examination online prior to being issued an authorization to test for the NCLEX examination. Refer to the TBON website <http://www.bne.state.tx.us/> under the *Licensure* tab and then click on *Examination* for details.

**PROGRAM OUTLINE: BACHELOR OF SCIENCE IN NURSING**

#	COURSE	TITLE	CLOCK HOURS (LEC/LAB/CLINICAL AFFILIATION/ TOTAL)	TWC/THECB SCU	ACCS C SCH
1	ENGL 1301	English Composition I	45/0/0/45	3.0	3.0
2	BIOL 1401	Anatomy & Physiology I	45/30/0/75	4.0	4.0
3	PHIL 1301	Philosophy I	45/0/0/45	3.0	3.0
4	HIST 1301	U.S. History I	45/0/0/45	3.0	3.0
5	MATH 1312	Algebra	45/0/0/45	3.0	3.0
6	SPCH 1315	Public Speaking	45/0/0/45	3.0	3.0
7	PHIL 2255	Medical Ethics & Issues	30/0/0/30	2.0	2.0
8	BIOL 2421	Microbiology	45/30/0/75	4.0	4.0
9	BIOL 2402	Anatomy & Physiology II	45/30/0/75	4.0	4.0
10	SOCI 1358	Sociology	45/0/0/45	3.0	3.0
11	PSYC 1380	Life Span Human Development	45/0/0/45	3.0	3.0
12	BIOL 1360	Introduction to Human Nutrition	45/0/0/45	3.0	3.0
13	PSYC 2301	General Psychology	45/0/0/45	3.0	3.0
14	ENG 1302	Research Analysis	45/0/0/45	3.0	3.0
15	MATH 1342	Statistics	45/0/0/45	3.0	3.0
16	CHEM 1470	Chemistry	45/30/0/75	4.0	4.0
17	PATHO 2330	Human Pathophysiology	45/0/0/45	3.0	3.0
18	POLS 3389	Policy & Politics in Healthcare	45/0/0/45	3.0	3.0
19	NURS 2200	Foundation of Nursing	30/0/0/30	2.0	2.0
20	NURS 2400L	Foundation of Nursing Lab/Clinical	0/60/60/120	4.0	4.0
21	NURS 2210	Gerontologic Nursing	30/0/0/30	2.0	2.0
22	NURS 2220	Health/Physical Assessment	30/0/0/30	2.0	2.0
23	NURS 2230	Pharmacology	30/0/0/30	2.0	2.0
24	NURS 3300	Medical Surgical Nursing I	30/0/0/30	2.0	2.0
25	NURS 3500L	Medical Surgical Nursing I Lab/Clinical	0/30/120/150	5.0	5.0
26	NURS 3270	Cultural Diversity & Health	30/0/0/30	2.0	2.0
27	NURS 3384	Nursing Research	45/0/0/45	3.0	3.0
28	NURS 3340	Medical Surgical Nursing II	45/0/0/45	3.0	3.0
29	NURS 3440L	Medical Surgical Nursing II Lab/Clinical	0/0/120/120	4.0	4.0
30	NURS 3250	Mental Health	30/0/0/30	2.0	2.0
31	NURS 3150L	Mental Health Lab/Clinical	0/0/30/30	1.0	1.0
32	NURS 3320	Community Health Nursing	30/0/30/60	3.0	3.0



33	NURS 4370	Medical Surgical Nursing III	45/0/0/45	3.0	3.0
34	NURS 4370L	Medical Surgical Nursing III Lab/Clinical	0/0/120/120	4.0	4.0
35	NURS 4460	Maternal Child Nursing	60/0/0/60	4.0	4.0
36	NURS 4460L	Maternal Child Nursing Lab/Clinical	0/15/45/60	2.0	2.0
37	NURS 4410	Nursing Leadership & Management	30/0/60/90	4.0	4.0
38	NURS 4250	Professional Nursing Issues	30/0/0/30	2.0	2.0
39	NURS 4380	Preceptorship + Lab/Clinical	0/0/90/90	3.0	3.0
40	NURS 4390	Nursing Capstone	45/0/0/45	3.0	3.0
<b>Bachelor of Science – Nursing</b>			<b>1335/225/675/2235</b>	<b>120.0</b>	<b>120.0</b>

**COURSE 1**  
**ENGL 1301**  
**ENGLISH COMPOSITION**  
**45/0/3.0/3.0**

The student, focusing on the academic essay, will study the principles and techniques of expository and persuasive composition, including drafting, revising, and editing in paragraphs and essays and will produce a resume.

Upon completion of this course, the student will be able to:

1. Use paragraphs as building blocks of essays
2. Write an expository essay
3. Explain the means of persuasion and strategies for evaluating evidence
4. Write a persuasive essay
5. Demonstrate technical writing skills and written concise communication.
6. Distinguish among academic writing, writing for work, and informal writing
7. Read critically and make editorial suggestions about what they have read
8. Produce a personal resume
9. Utilize the services of the Learning Resource Center

**COURSE 2**  
**BIOL 1401**  
**ANATOMY & PHYSIOLOGY I**  
**45/30/4.0/4.0**

The student will develop a critical understanding of anatomical terminology, anatomical structure and function of the muscular, endocrine, cardiovascular, immune & lymphatic, digestive, respiratory, urinary, nervous, integumentary, reproduction and development systems.

Upon completion of this course, the student will be able to:

1. Identify and describe the anatomical terms, directions, planes, axis and the cavities of the human body.
2. Describe basic organization of the human body and its structural levels.
3. Describe the atomic, molecular and cellular structure of human organs.
4. Identify the organs of each system, define function and describe their locations and relationship of its parts.
5. Describe human body homeostasis and normal lab values.

**COURSE 3**  
**PHIL 1301**  
**PHILOSOPHY I**  
**45/0/3.0/3.0**

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.

Upon completion of this course, the student will be able to:

1. Read, analyze, and critique philosophical texts.

2. Demonstrate knowledge of key concepts, major arguments, problems, and terminology in philosophy.
3. Present logically persuasive arguments both orally and in writing.
4. Demonstrate critical thinking skills in evaluation and application of philosophical concepts to various aspects of life.
5. Evaluate the personal and social responsibilities of living in a diverse world.

**COURSE 4**  
**HIST 1301**  
**U.S. HISTORY I**  
**45/0/3.0/3.0**

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.

Upon completion of this course, the student will be able to:

1. Create an argument through the use of historical evidence.
2. Analyze and interpret primary and secondary sources.
3. Analyze the effects of historical, social, political, economic, cultural, and global forces on this period of United States history.

**COURSE 5**  
**MATH 1312**  
**ALGEBRA**  
**45/0/3.0/3.0**

The student will study relations and functions, including polynomial, rational, exponential, logarithmic, and special functions. Other topics include systems of equations and its applications.

Upon completion of this course, the student will be able to:

1. Use scientific notation.
2. Perform operations on and factor polynomials.
3. Graph, solve and apply linear and quadratic equations.
4. Perform operations on and solve rational equations.
5. Calculate and define ratio and proportions.
6. Solve systems of linear equations.
7. Analyze functions.

**COURSE 6**  
**SPCH 1315**

## **PUBLIC SPEAKING**

### **45/0/3.0/3.0**

This course develops the ability to speak before audiences. Students will plan and deliver several types of speeches appropriate to occasion and audience. Clarity of purpose and organization will be emphasized. Students will practice critical thinking and listening skills and be able to identify the means of persuasion.

Upon completion of this course, students will be able to do the following:

1. Identify the basic elements of the speech process.
2. Design messages appropriate to topic, audience, and setting.
3. Demonstrate research skills necessary to preparing a speech, including selection of material and determination of which, if any, audio-visual and other resources will be used to enhance audience understanding.
4. Make best use of strategies, verbal and non-verbal, to assure clear, accurate, and engaging communication.
5. Maximize use of language and body for conveying information and convincing argument.
6. Analyze speeches critically for both content and delivery.
7. Identify and use critical listening techniques.
8. Develop the voice for strength, control, and tone.

## **COURSE 7**

### **PHIL2255**

#### **MEDICAL ETHICS & ISSUES**

### **30/0/2.0/2.0**

This course will explore the major ethical issues confronting the practices of medicine and biomedical science. We will become familiar with legal and institutional positions, consider and debate opposing arguments on the various topics, and examine relevant case studies.

Upon completion of this course, the student will be able to:

1. Increase knowledge and understanding of the ethical dimensions of professional practice.
2. Appreciate how effective interprofessional care teams collaborate to achieve a shared common good, supporting optimum health outcomes.
3. Identify how the goal of a caring response factors into a wide range of ethical issues in professional practice.
4. Recognize the nature and scope of their moral agency as health professionals and members of the interprofessional care team.
5. Competently apply ethical reasoning with the help of a straightforward problem-solving method designed for ethical situations.
6. Become competent in applying widely used ethics theories, approaches, and concepts to address ethical challenges in professional practice.

7. Recognize current and longstanding themes in professional ethics and cite examples of concrete ethical situations in clinical practice and health policy.
8. Gain insight into ethical situations and problems that are unique to their own professions, in contrast to those shared by a wide range of health professionals.
9. Recognize the ethical issues that present in the societal context of healthcare and the health professional's role in analyzing the resolving ethical problems to serve patients, families and communities, locally and globally.
10. Find resources that are useful for more in-depth study of professional ethics.

## **COURSE 8**

### **BIOL 2421**

#### **MICROBIOLOGY**

### **45/30/4.0/4.0**

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. 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.

Upon completion of this course, the student will be able to:

1. The objective of this course is to provide an overview of the discipline of microbiology to the students in order to make them understand the scope of microbiology.
2. Understand and explain microbiological processes in detail appropriate to this course.
3. History, scope and trends in microbiology.
4. Germ theory of disease and its development.
5. Aseptic procedures and materials for culturing and growth of microbes.
6. Enumerate and differentiate the groups of organisms included for study in microbiology.
7. Distinguish between eukaryotic and prokaryotic cell types.
8. Energy acquisition and utilization by microbes and the function of enzymes in cellular activities.
9. Microbial metabolism.
10. Fundamental nucleic acid chemistry including replication, genetic code, protein synthesis, metabolic regulation, and cellular reproduction.
11. Microbial genetics, including sexual & asexual reproduction, transformation, transduction and conjugation in bacteria.
12. Biotechnology related to microbes.
13. Symbiotic relationships (commensal, mutualistic, parasitic).
14. Disease process, signs, symptoms, etiology, course, prevention/control, diagnosis,

treatment of common human organ system infectious diseases.

15. Immunological processes, both (innate) nonspecific and specific (adaptive).
16. Principles and methods of diagnosing disease and epidemiology.
17. Safe laboratory practices that include aseptic techniques and appropriate disposal or biological/biohazardous waste.

## **COURSE 9**

### **BIOL 2402**

#### **ANATOMY & PHYSIOLOGY II**

**45/30/4.0/4.0**

Anatomy and physiology - II course is the second 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. 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.

Upon completion of this course, the student will be able to:

1. Identify and describe the anatomical terms, directions, planes, axis and the cavities of the human body.
2. Describe basic organization of the human body and its structural levels.
3. Describe the atomic, molecular and cellular structure of human organs.
4. Identify the organs of each system, define function and describe their locations and relationship of its parts.
5. Describe human body homeostasis and normal lab values.

## **COURSE 10**

### **SOCI 1358**

#### **SOCIOLOGY**

**45/0/3.0/3.0**

This course will focus on the basic concepts in Sociology and an analysis of culture, socialization, stratification, social organization, class, social interaction, social change, and conflict.

Upon completion of this course, the student will be able to:

1. Basic knowledge of sociological theory and concepts.
2. Logical and coherent arguments based on sociological theory and knowledge.
3. Ability to apply knowledge of sociology to a range of issues and real-life contexts.
4. Ability to present arguments and draw conclusions based on sociological knowledge.

5. Ability of make basic connections between different topics outlined in the thematic areas.
6. Explain how cultural capital operates to perpetuate inequality.
7. Identify key aspects of cultural capital in the student's own experience.
8. Discuss symbolic boundaries and their role in shaping inequality.
9. Apply cultural capital and symbolic boundaries to the workings of major social institutions.

## **COURSE 11**

### **PSYC 1380**

#### **LIFE SPAN HUMAN DEVELOPMENT**

**45/0/3.0/3.0**

This course introduces the study of human growth and development. Emphasis is on the physical, cognitive, and psychosocial aspects of development from conception to death. Upon completion, students should be able to demonstrate knowledge of development across the life span and apply this knowledge to their specific field of study.

Upon completion of this course, the student will be able to:

1. Demonstrate an understanding of theories, methods and research findings of life-span psychology.
2. Describe how people change in terms of their cognitive, physical, social & emotional development.
3. Compare the major developmental theorists and discuss what each brings to or adds to the study of human development.
4. Summarize and evaluate the research on the relative contributions of heredity (nature) versus environment (nurture) to various aspects of development.
5. Identify some of the factors that put people at increased risk for developing psychological problems at each stage of the lifespan.
6. To think critically about each of the developmental theories and research. Students will demonstrate critical thinking skills in written assignments.
7. Apply basic principles of developmental psychology to one's own life experiences.

## **COURSE 12**

### **BIOL 1360**

#### **INTRODUCTION TO HUMAN**

#### **NUTRITION**

**45/0/3.0/3.0**

This course covers principles of Human Nutrition that provides an integrated overview of the physiological requirements and functions of protein, energy, and the major vitamins and

minerals that are determinants of health and diseases in human populations.

Upon completion of this course, the student will be able to:

1. Describe how to properly design individualized eating plans by utilizing diet planning principles, the Food Guide Pyramid, Exchange System and other food guide plans that incorporate personal food preferences.
2. Explain the function of the RDA, DRI, and Tolerable Upper Intake Level.
3. Describe the digestive system, its functions, including problems that it encounters and solves during the digestive process. Identify the hormones involved in regulating digestion.
4. Explain the differences between and identify energy- and non-energy-yielding nutrients. Identify the functions of phytochemicals.
5. Distinguish between simple and complex carbohydrates in form and function and the health effects associated with carbohydrate intake including fiber and sugar intake. Describe the hormonal regulation of blood sugar and other factors affecting blood sugar.
6. Differentiate between members of the lipid family - triglycerides, phospholipids, and sterols - in form and function and the health effects associated with lipid intake, especially the factors increasing serum triglyceride and cholesterol. Identify effects and sources of omega 3 and omega 6 fatty acids.
7. Describe protein form and function, define essential amino acids, and explain the health effects of protein intake, including Protein Energy Malnutrition as well as how vegetarians and non-vegetarians obtain adequate protein.
8. Explain the steps involved in metabolism and the ways energy is derived from carbohydrate, fat, and protein, including the consequences of consuming too much and too little energy, too little carbohydrate.
9. Describe the factors associated with weight control, including causes of obesity, methods of assessing body weight and composition, and good and poor treatments for obesity.
10. State the benefits associated with physical activity, the components of a sound fitness or health program, and the fuels that are necessary for physical performance and daily activity.
11. Describe how nutrition and lifestyle choices impact the life cycle before and during pregnancy, during lactation and infancy, during childhood and adolescence, and through adulthood and aging.
12. Explain the impact of nutrition and lifestyle choices on the immune system and on diseases such as cardiovascular disease, cancer, AIDS, and diabetes.

**COURSE 13**  
**PSYC 2301**  
**GENERAL PSYCHOLOGY**  
**45/0/3.0/3.0**

The student will be introduced to the basic principles of psychology and apply those principles to a particular field of knowledge or activity.

Upon completion of this course, the student will be able to:

1. Understand human developmental phases.
2. Explain the basic psychological concepts.
3. Appreciate the theorists' explanations of human behavior.
4. Describe the therapeutic approaches
5. Identify psychological disorders, their causes and treatments
6. Apply psychological principles to understanding and working with co-workers and clients.

**COURSE 14**  
**ENGL 1302**  
**RESEARCH ANALYSIS**  
**45/0/3.0/3.0**

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.

Upon completion of this course, the student will be able to:

1. Demonstrate knowledge of individual and collaborative research processes.
2. Develop ideas and synthesize primary and secondary sources within focused academic arguments, including one or more research-based essays.
3. Analyze, interpret, and evaluate a variety of texts for the ethical and logical uses of evidence.
4. Write in a style that clearly communicates meaning, builds credibility, and inspires belief or action.
5. Apply the conventions of style manuals for specific academic disciplines (e.g., APA, CMS, MLA, etc.)

**COURSE 15**  
**MATH1342**  
**STATISTICS**  
**45/0/3.0/3.0**

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.

Upon completion of this course, the student will be able to:

1. Explain the use of data collection and statistics as tools to reach reasonable conclusions.
2. Recognize, examine and interpret the basic principles of describing and presenting data.
3. Compute and interpret empirical and theoretical probabilities using the rules of probabilities and combinatorics.
4. Explain the role of probability in statistics.
5. Examine, analyze and compare various sampling distributions for both discrete and continuous random variables.
6. Describe and compute confidence intervals.
7. Solve linear regression and correlation problems.
8. Perform hypothesis testing using statistical methods.

**COURSE 16**  
**CHEM 1470**  
**CHEMISTRY**  
**45/30/4.0/4.0**

This introductory to chemistry course covers an introduction to the basic concepts of chemistry such as systematic treatment of fundamental chemical and physical principles and their applications to the properties and transformations of materials, including the concept of energy and its uses, gas laws, kinetic molecular theory, laws of chemical combination, atomic and molecular structure, periodic classification of the elements, and chemical bonding.

Upon completion of this course, the student will be able to:

1. Describe fundamental chemical concepts and principles, including measurement, characterization of the phases of matter, properties of atoms and ions, stoichiometry and thermochemistry of chemical reactions, kinetic molecular theory, the nature of energy, chemical bonding and molecular geometry, and intermolecular forces.
2. Solve a wide variety of integrative chemistry problems that connect ideas across topics, such as the evaluation of the impact of different fuels on the environment.
3. Apply models of atoms, molecules, and their interactions to explain the physical and chemical macroscopic properties of gases, liquids and solids.
4. Visualize and apply chemical and mathematical models to rationalize the organization of the periodic table, to predict molecular geometry, to explain chemical reactivity, and to calculate energy flow in chemical processes.
5. Design, conduct, and analyze experiments pertaining to stoichiometry, thermochemistry, and spectrometry while developing fundamental safety, measurement, and sample isolation techniques.
6. Demonstrate growth as reflective, self-directed learners through assessing their work, identifying misconceptions, and

critically evaluating information from a variety of sources.

7. Articulate the rationale behind experimental results and answers to conceptual problems in verbal communications and written assessments using scientifically appropriate language.

**COURSE 17**  
**PATHO 2330**  
**HUMAN PATHOPHYSIOLOGY**  
**45/0/3.0/3.0**

This course provides an in-depth study of human pathological processes and their effects on homeostasis. Content builds on basic anatomy and physiology, microbiology, and chemistry content obtained from earlier courses. Course topics include the etiology, physical signs and symptoms, prognosis, and complications of commonly occurring diseases and their management.

Upon completion of this course, the student will be able to:

1. Utilize medical terminology as it applies to the pathophysiological basis for alterations in health.
2. Demonstrate knowledge of the mechanisms of normal anatomic structure, physiological function, and biochemical processes within the human body.
3. Demonstrate knowledge of the mechanisms of altered anatomic structure and physiological function within the human body.
4. Explain signs and symptoms of diseases and their relationship to specific pathophysiological changes in the human body.
5. Describe the relationships between basic pathophysiology and selected diagnostic and therapeutic modalities.
6. Explain the basis for actions that could be taken to avoid pathophysiological states or conditions or to reduce the risks of occurrence of pathophysiological states or conditions.

**COURSE 18**  
**POLS 3389**  
**POLICY & POLITICS IN**  
**HEALTHCARE**  
**45/0/3.0/3.0**

This course provides an in-depth orientation to the actors, processes, and institutions that make up the political system in Texas, with a strong emphasis on the development of applied knowledge. Instructional material focuses on how politics in Texas shapes the operation of Texas political institutions, with attention to the interplay between public opinion, conflict among elites, and the policy environment in the state.

Upon completion of this course, the student will be able to:

1. Explain the history, goals, purpose, components, and dynamics of the health care system in the U.S.
2. Discuss the connections and interconnections between the components of the health care system.
3. Describe the history of health reform and the strengths and limitations of the Patient Protection and Affordable Care Act.
4. Identify social, cultural, economic, environmental, and political forces that shape the health care system and influence access to health and health care.
5. Reflect on special topics in healthcare including healthcare professions, behavioral healthcare, and long-term services.
6. Identify underserved populations facing health disparities or other health differences and connect these with the structure of the health care system.
7. Be critical about the current health care system and new policy proposals for changing it.
8. Compare the weaknesses and strengths of healthcare in the U.S. to the systems of other countries' and suggest new avenues for reform.
9. Communicate effectively on the topic of healthcare in America.
10. Use the facts and perspectives gained through this class to participate intelligently in decision-making about health care, both in the public sphere and for oneself.

**COURSE 19  
NURS 2200  
FOUNDATION OF NURSING  
30/0/2.0/2.0**

This course promotes nursing as an evolving art and science directed to human health and well-being. Students will cultivate the Quality and Safety Education for Nurses (QSEN), critical thinking, and blended skills practiced within the nursing process to serve patients and the public. Students will combine cognitive, technical, and interpersonal skills to promote the four aims of nursing: promoting health; preventing illness; restoring health and facilitating coping with illness or death. Students will identify with their profession and share in its rewards by developing an attitude of caring and accountability in patient care. The NUR200L Foundation of Nursing Lab/Clinical course must be taken concurrently with this course.

Upon completion of this course, the student will be able to:

1. Describe the foundations of nursing, including health and illness, human needs, nursing theory, research and evidence-based practice.
2. Evaluate the settings in which health care is practiced and the methods taken to ensure continuity of care for the patient.

3. Describe and practice the components of the nursing process: assessing; diagnosing; planning; implementing; and evaluating.
4. Use theories of growth and development across the lifespan to enhance the patient care plan.
5. Describe the roles basic to nursing care, including communicator; teacher; counselor; leader; manager and care coordinator.
6. Discuss the actions basic to nursing care: maintaining asepsis, measuring vital signs, assessing health promoting safety, incorporating complementary and alternative therapies, administering medications, and caring for patients in all healthcare settings.
7. Promote healthy physiologic responses in patients: hygiene, skin integrity and wound care, activity, rest and sleep, comfort and pain management, nutrition, urinary and bowel elimination, oxygenation and perfusion, electrolyte and acid-base balance.
8. Develop plans of care to help patients meet basic psychosocial needs: self-concept; stress and adaptation; loss, grief, and dying; sensory stimulation; sexuality; and spirituality.

**COURSE 20  
NURS 2400L  
FOUNDATION OF NURSING  
LAB/CLINICAL  
0/60/4.0/4.0**

This course presents basic nursing skills that will assist nursing students to incorporate cognitive, technical, interpersonal, and ethical/legal skills into safe and effective patient care. The skills included focus on basic principles of patient care, including an emphasis on safe medication administration. Students will apply the nursing process as they care for patients in skilled units of a long-term care facility.

Upon completion of this course, the student will be able to:

1. Demonstrate basic nursing care in a safe manner in an instructor supervised skills laboratory and real-life patient care settings.
2. Collect subjective and objective health assessment data for adult patients in a long-term care setting.
3. Apply the nursing process as a method for clinical reasoning and decision making.
4. Use effective communication with patients, instructor and peers.
5. Demonstrate accurate calculation of medication dosages.
6. Demonstrate accurate and complete documentation of patient care in the DocuCare electronic medical record.
7. Demonstrate nursing interventions to promote basic needs in the clinical setting, including activity and exercise; patient safety; hygiene; oxygenation, fluid, electrolyte and acid base balance; sleep; pain

management; nutrition; urinary elimination; bowel elimination; skin integrity and wound care; and sensory alterations.

8. In a simulated laboratory setting and where opportunities are available in a real-life patient setting, demonstrate the following procedures according to best practices and evidenced based research:
9. Asepsis and Infection Control: handwashing; PPE; sterile field; sterile gloves
10. Vital Signs
11. Safety: fall prevention and restraints
12. Medication Administration: oral, injectable (intra dermal, SQ, IM); transdermal; eye drops; ear drops; nasal spray; vaginal; rectal; inhaled; metric and household systems of measurement; drug abbreviations, labels, and packaging; calculation of oral medications; calculation of liquids for injection
13. Perioperative: deep breathing; coughing; splinting; leg exercises; post-op receiving to room
14. Hygiene: bathing; oral care; contact lenses; hair; shaving; nail care; bed making
15. Skin Integrity and Wound Care: dry, sterile dressing; saline-moistened dressing; hydrocolloid dressing; wound irrigation; wound culture; Montgomery straps; suture removal; staple removal; heating pad; warm compress; cold therapy
16. Activity: turning in bed; moving a patient up in bed; transferring; ROM exercises; ambulation; graduated compression stockings; pneumatic compression devices; CPM device; sling
17. Comfort and Pain Management: promoting comfort; back massage
18. Nutrition: assisting with eating
19. Urinary Elimination: bedpan, urinal, bedside commode
20. Bowel Elimination: enema; digital removal of stool; fecal incontinence device
21. Oxygenation: pulse oximeter; incentive spirometer; oxygen by nasal cannula and mask
22. Cardiovascular Care: CPR
23. Neurologic Care: logrolling; cervical collar; seizure precautions
24. Laboratory Specimen collection: nasal swab; nasopharyngeal swab; sputum specimen; urine specimen, clean catch; occult blood in stool; stool for culture; capillary blood sample for glucose testing

**COURSE 21**  
**NURS 2210**  
**GERONTOLOGIC NURSING**  
**30/0/2.0/2.0**

This course provides a foundation for the nurse's role in providing wellness-oriented nursing care in all stages of health and illness for older adults in any health care setting. Students will understand the complex needs of older adults in the context of age-related changes and individual risk factors as they apply the nursing process to deliver holistic care in

a long-term care clinical setting through the roles of practitioner, educator, advocate and researcher.

Upon completion of this course, the student will be able to:

1. Develop a wellness philosophy in the care of older adults.
2. Explain the Functional Consequences Theory applied to the nursing care of older adults.
3. Describe the role of the nurse in promoting wellness for older adults with regard to aspects of daily life as well as complex situations such as medication management, elder abuse, and legal and ethical concerns.
4. Apply nursing interventions to support wellness in psychosocial functioning.
5. Differentiate between age-related changes and risk factors that affect all aspects of physiologic and psychosocial function for older adults and identify those that are most amenable to health promotion interventions.
6. Apply concepts of wellness to older adults through all stages of health and illness, including acute and chronic conditions, pain management, and at the end of life.

**COURSE 22**  
**NURS 2220**  
**HEALTH/PHYSICAL ASSESSMENT**  
**30/0/2.0/2.0**

This course provides assessment tools to assist the student to obtain a thorough history and perform a comprehensive physical examination of adult and geriatric patients. The student will learn to elicit information related to patient complaints and use the history findings and critical thinking skills to prioritize and guide the physical examination. The findings obtained will provide the basis for the nursing diagnoses and patient plan of care. Health promotion and disease prevention are highlighted for students to incorporate when educating patients, families and communities.

Upon completion of this course, the student will be able to:

1. Explain the components of the health assessment.
2. Analyze a written patient history and physical examination findings to identify patient problems and develop a nursing care plan.
3. Describe the phases of the nurse-patient interview.
4. Use therapeutic communication techniques during the patient interview and physical examination. a
5. Obtain a comprehensive health history from a patient.
6. Perform and document a comprehensive physical examination using a systematic, head-to-toe approach on a simulated adult patient.
7. Recognize normal physiologic changes in the older adult.



8. Perform and document a health history and physical examination utilizing screening tools which address common concerns in the older adult.
9. Demonstrate proper use of equipment utilized in physical examination.

**COURSE 23**  
**NURS 2230**  
**PHARMACOLOGY**  
**30/0/2.0/2.0**

This course introduces nursing pharmacology to build a foundation for administering drug therapy to patients. Discussion of the major drug groups focuses on therapeutic actions and indications, pharmacokinetics, contraindications and cautions, adverse effects, clinically important drug-drug interactions and nursing considerations which emphasize the nursing process and focus on patient care and teaching. Prototypes of the major drug groups are emphasized. Lifespan considerations, evidence for best practice, patient safety, and critical thinking are integrated throughout the course.

Upon completion of this course, the student will be able to:

1. Discuss the major concepts associated with pharmacology including pharmacodynamics, pharmacokinetics, therapeutic effects, adverse effects, and factors affecting drug therapy.
2. Explain the legal regulation for drug development, approval and testing.
3. Discuss the challenges associated with drug therapy in current times.
4. Describe the major drug groups and their indications for use.
5. Correlate the actions of the major drug groups with the body system(s) affected.
6. Identify the prototype for each of the major drug groups.
7. Discuss the important lifespan considerations associated with the major drug groups.
8. Explain the mechanism of action, indications, contraindications and cautions, common adverse effects, and clinically important drug-drug interactions for each of the major drug groups.
9. Relate the importance of renal and hepatic function with drug therapy.
10. Describe the nursing considerations related to drug therapy, including important teaching points, for each of the major drug groups.

**COURSE 24**  
**NURS 3300**  
**MEDICAL SURGICAL NURSING I**  
**30/0/2.0/2.0**

This course provides an understanding of the nurse's role in patient-centered care within evolving practice environments and across the spectrum of

health and illness. This course will address nursing care issues including pain management; fluid and electrolyte balance; perioperative care; gas exchange; digestive function; renal function; sensory and integumentary function from a physiologic, pathophysiologic, and psychosocial context. Students will apply this knowledge through the nursing process and clinical reasoning in an acute care clinical setting as they assume the roles of practitioner, educator, advocate and researcher through NUR300L Medical Surgical Nursing I Lab/Clinical which must be taken concurrently.

Upon completion of this course, the student will be able to:

1. Discuss genetics and genomics, chronic illness and rehabilitation as they relate to professional nursing practice.
2. Demonstrate a comprehensive understanding of pain, fluid and electrolyte balance, perioperative care, gas exchange, digestive, renal, sensory and integumentary function.
3. Apply the nursing process to patients experiencing pain, fluid and electrolyte imbalance, surgery, and disorders of gas exchange, digestion, renal, sensory and integumentary dysfunction.
4. Discuss safe, effective nursing care for patients with pain, fluid and electrolyte imbalance, perioperative needs, and disorders of gas exchange, digestion, renal, sensory and integumentary dysfunction through the nursing roles of practitioner, educator, advocate and researcher.

**COURSE 25**  
**NURS 3500L**  
**MEDICAL SURGICAL NURSING I**  
**LAB/CLINICAL**  
**0/30/5.0/5.0**

This course emphasizes safe, effective, compassionate patient care as nursing students learn to incorporate cognitive, technical, interpersonal, and ethical/legal aspects of skill application. The skills include interventions commonly applied to patients experiencing acute and critically acute health conditions, with an emphasis on safe intravenous medication administration, ECG interpretation and life-saving nursing interventions. Students will apply this knowledge through the nursing process and clinical reasoning in an acute care clinical setting as they assume the roles of practitioner, educator, advocate and researcher.

Upon completion of this course, the student will be able to:

1. Demonstrate nursing care in a safe manner in an instructor supervised skills laboratory and real-life patient care settings.
2. Collect subjective and objective health assessment data for adult patients in an acute care setting.

3. Apply the nursing process as a method for clinical reasoning and decision making.
4. Use effective communication with patients, instructor and peers.
5. Demonstrate accurate calculation and administration of medication dosages including intravenous therapy.
6. Demonstrate accurate and complete documentation of patient care in the DocuCare electronic medical record.
7. In a simulated laboratory setting and where opportunities are available in a real-life patient setting, demonstrate the following procedures according to best practices and evidenced based research:
8. Medication Administration: via gastric tube; SQ infusion; IV; nebulizer; calculation of IV medications
9. Skin Integrity and Wound Care: Penrose drain; T-Tube drain; Jackson-Pratt drain; Hemovac drain; negative pressure wound therapy
10. Activity: figure-eight bandage; cast application; cast care; skin traction; skeletal traction; external fixation device
11. Comfort and Pain Management: TENS unit; patient-controlled analgesia; continuous wound perfusion pain management
12. Nutrition: NG tube insertion; tube feeding; NG tube removal; caring for a gastrostomy tube
13. Urinary Elimination: bladder scanner; condom cath; female and male urinary catheterization; cath removal; intermittent irrigation; continuous bladder irrigation; stoma care for ileal conduit; suprapubic cath care; peritoneal dialysis cath care; hemodialysis access
14. Bowel Elimination: ostomy care; irrigating a colostomy; NG tube irrigation
15. Oxygenation: suctioning; artificial airway insertion; tracheostomy care; chest drainage care; chest tube removal; manual resuscitation bag and mask; care of the patient on a mechanical ventilator
16. Cardiovascular: emergency automated external defibrillation; manual external defibrillation; obtaining an ECG; ECG interpretation; applying a cardiac monitor; external pacemaker; arterial blood sample from an arterial catheter; removing peripheral arterial catheters
17. Fluid, Electrolyte, and Acid-Base Balance: initiating IV access; changing an IV container and administration set; monitoring an IV infusion; IV dressing change; peripheral venous access flushing; administering a blood transfusion; central venous access devices; accessing an implanted port; removing a peripherally inserted central catheter
18. Laboratory Specimen collection: urine specimen from a catheter; venipuncture for routine blood sample; venous blood specimen for culture and sensitivity; arterial blood specimen for blood gas analysis

19. Neurologic Care: halo traction; external ventriculostomy; fiber optic intracranial catheter
20. Apply the nursing process to patients experiencing pain, fluid and electrolyte imbalance, surgery, and disorders of gas exchange, digestion, renal, sensory and integumentary dysfunction.
21. Implement safe, effective nursing care for patients with pain, fluid and electrolyte imbalance, perioperative needs, and disorders of gas exchange, digestion, renal, sensory and integumentary dysfunction through the nursing roles of practitioner, educator, advocate and researcher.
22. Demonstrate nursing interventions to promote basic needs including activity and exercise; patient safety; hygiene; oxygenation, fluid, electrolyte and acid base balance; sleep; pain management; nutrition; urinary elimination; bowel elimination; skin integrity and wound care; and sensory alterations.

**COURSE 26**  
**NURS 3270**  
**CULTURAL DIVERSITY & HEALTH**  
**30/0/2.0/2.0**

This course focuses on the role of the nurse to address the needs of clients in diverse populations across the life span. Theory and research-based evidence from nursing and other disciplines are integrated with concepts of caring and cultural competences. Concepts such as cultural awareness, readiness, sensitivity, and cultural education will be emphasized. In partnership with clients, the student develops, implements, and evaluates a cultural teaching plan designed to produce a desired change in behavior.

Upon completion of this course, the student will be able to:

1. Describe influences that affect culturally competent healthcare.
2. Discuss examples of how diversity affects health and illness care, including culturally based traditional care.
3. Describe cultural competence when assessing and providing
4. nursing care for patients from diverse cultural groups.
5. Discuss factors in the healthcare system and in nursing that
6. facilitate or impede culturally competent nursing care.

**COURSE 27**  
**NURS 3384**  
**NURSING RESEARCH**  
**45/0/3.0/3.0**

This course helps students learn how to read and critique research reports and to develop an appreciation of research as a path to enhancing nursing practice.

Upon completion of this course, the student will be able to:

1. Discuss the need for evidence-based practice.
2. Compare quantitative research with qualitative research.
3. Identify the components of a well-worded clinical question and be able to frame such a question.
4. Describe the flow and sequence of activities in quantitative and qualitative research and discuss why they differ.
5. Describe aspects of a research critique.
6. Describe the process of developing and refining a research problem.
7. Understand the process of screening, abstracting, critiquing, and organizing research evidence.
8. Describe approaches for assessing the reliability and validity of measures.
9. Critique researchers' interpretation of their results in a discussion section of a report.
10. Describe key decisions and steps in doing a meta-analysis and meta-synthesis.

## **COURSE 28**

### **NURS 3340**

#### **MEDICAL SURGICAL NURSING II**

**45/0/3.0/3.0**

This course provides an understanding of the nurse's role in patient-centered care within evolving practice environments and across the spectrum of health and illness. This course will address nursing care issues including cancer care; end-of-life care; hematologic; immunologic; musculoskeletal; metabolic; endocrine; and reproductive function from a physiologic, pathophysiologic, and psychosocial context. Students will apply this knowledge through the nursing process and clinical reasoning in an acute care clinical setting as they assume the roles of practitioner, educator, advocate and researcher through the NURS 3340L Medical Surgical Nursing II Lab/Clinical course which must be taken concurrently.

Upon completion of this course, the student will be able to:

1. Discuss end-of-life issues and care as they relate to professional nursing practice.
2. Demonstrate a comprehensive understanding of cancer, hematologic, immunologic, musculoskeletal, metabolic, endocrine, and reproductive function.
3. Apply the nursing process to patients experiencing cancer, hematologic, immunologic, musculoskeletal, metabolic, endocrine and reproductive dysfunction.
4. Describe safe, effective nursing care for patients with cancer, hematologic, immunologic, musculoskeletal, metabolic, endocrine and reproductive dysfunction through the nursing roles of practitioner, educator, advocate and researcher.

## **COURSE 29**

### **NURS 3440L**

#### **MEDICAL SURGICAL NURSING II**

#### **LAB/CLINIC**

**0/0/4.0/4.0**

This course provides an opportunity for students to apply their growing knowledge base of adult medical surgical conditions through the nursing process and clinical reasoning in an acute care clinical setting as they assume the roles of practitioner, educator, advocate and researcher. This course must be taken concurrently with NURS 3340 Medical Surgical Nursing II.

Upon completion of this course, the student will be able to:

1. Demonstrate nursing care in a safe manner in an instructor supervised real life patient care setting.
2. Collect subjective and objective health assessment data for adult patients in an acute care setting.
3. Apply the nursing process as a method for clinical reasoning and decision making.
4. Use effective communication with patients, instructor and peers.
5. Demonstrate accurate calculation and administration of medication dosages including intravenous therapy.
6. Demonstrate accurate and complete documentation of patient care in the DocuCare electronic medical record.
7. Where opportunities are available in the real-life patient setting, demonstrate all procedures learned in previous semesters according to best practices and evidenced based research.
8. Apply the nursing process to patients experiencing cancer, hematologic, immunologic, musculoskeletal, metabolic, endocrine and reproductive dysfunction.
9. Implement safe, effective nursing care for patients with cancer, hematologic, immunologic, musculoskeletal, metabolic, endocrine and reproductive dysfunction through the nursing roles of practitioner, educator, advocate and researcher.
10. Demonstrate nursing interventions to promote basic needs including activity and exercise; patient safety; hygiene; oxygenation, fluid, electrolyte and acid base balance; sleep; pain management; nutrition; urinary elimination; bowel elimination; skin integrity and wound care; and sensory alterations.

## **COURSE 30**

### **NURS 3250**

#### **MENTAL HEALTH**

**30/0/2.0/2.0**

This course provides a foundation for the nurse's role in mental health care. This course will present sound nursing theory, therapeutic modalities, and clinical

applications across the treatment continuum and in various clinical settings using a nursing process framework. Students will apply this knowledge through the nursing process and clinical reasoning in an inpatient psychiatric clinical setting as they assume the roles of practitioner, educator, advocate and researcher through NUR350L Mental Health Lab/Clinical which must be taken concurrently.

Upon completion of this course, the student will be able to:

1. Discuss current trends in the treatment of people with mental illness.
2. Discuss neuro-biologic theories and medication management for patients with mental illness.
3. Explain the basic beliefs and approaches of the contemporary psychosocial theories of mental illness.
4. Describe different types of residential and community treatment settings and the services they provide.
5. Demonstrate effective therapeutic responses to simulated client situations.
6. Obtain and organize psychosocial assessment data to use as a basis for planning nursing care.
7. Identify legal and ethical issues in the practice of psychiatric nursing.
8. Apply the nursing process to the care of clients experiencing: grief and loss; anger, hostility and aggression; abuse and violence; and psychiatric disorders including trauma and stressor-related, anxiety, obsessive-compulsive, schizophrenia, mood, suicide, personality, addiction, eating disorders, somatic, neurodevelopmental, disruptive behavior, and cognitive disorders.

### **COURSE 31 NURS 3150L MENTAL HEALTH LAB/CLINICAL 0/0/1.0/1.0**

This course emphasizes safe, effective, compassionate patient care as nursing students learn to incorporate cognitive, technical, interpersonal, and ethical/legal aspects of nursing care to patients with mental health disorders. Students will use therapeutic communication and evidence-based interventions as they apply the nursing process to deliver holistic care in an in-patient mental health clinical setting through the roles of practitioner, educator, advocate and researcher.

Upon completion of this course, the student will be able to:

1. Demonstrate nursing care in a safe manner to patients in an instructor-supervised patient care setting.

2. Collect subjective and objective data for patients in a residential psychiatric care setting.
3. Use effective communication with patients, instructor and peers.
4. Demonstrate accurate and complete documentation of patient care in the DocuCare electronic medical record.
5. Apply the nursing process to the care of clients experiencing: grief and loss; anger, hostility and aggression; abuse and violence; and psychiatric disorders including trauma and stressor-related, anxiety, obsessive-compulsive, schizophrenia, mood, suicide, personality, addiction, eating disorders, somatic, neurodevelopmental, disruptive behavior, and cognitive disorders.

### **COURSE 32 NURS 3320 COMMUNITY HEALTH NURSING 30/0/3.0/3.0**

This course focuses on evidence-based practice in community and public health nursing by blending the nursing process and the epidemiologic process to provide a framework for gathering evidence about health problems, analyzing the information, generating diagnoses or hypotheses, planning for resolution, implementing plans of action, and evaluating the results. Students will understand the nurse's role as a change agent and leader in implementing culturally appropriate, community-based programs to remedy the conditions that contribute to health disparities. The five common specialty practices of mental health, school health, faith-oriented communities, palliative care and occupational health nursing are explored. This course must be taken concurrently with NUR420L Community Health Nursing Lab/Clinical.

Upon completion of this course, the student will be able to:

1. Discuss the challenges for public health nurses in the 21<sup>st</sup> century to include infectious and communicable diseases, emerging infectious diseases, violence and abuse, substance use, underserved populations, environmental health, and community preparedness for disaster and terrorism.
2. Describe the structure of public healthcare in the United States.
3. Discuss the role of nurses in informing healthcare policies.
4. Describe key indicators of health that can be measured or used as benchmarks to examine the health outcomes of a population.
5. Identify epidemiologic and health behavior change models of health promotion and modifiable risk reduction.
6. Generate research questions related to problems identified in community and public health nursing practice.

## **COURSE 33**

**NURS 4370**

### **MEDICAL SURGICAL NURSING III**

**45/0/3.0/3.0**

This course provides an understanding of the nurse's role in patient-centered care within evolving practice environments and across the spectrum of health and illness. This course will address nursing care issues including shock; multiple organ dysfunction; trauma; cardiovascular; circulation; burns; neurologic; and emergencies from a physiologic, pathophysiologic, and psychosocial context. Students will apply this knowledge through the nursing process and clinical reasoning in an acute care clinical setting caring for high acuity patients as they assume the roles of practitioner, educator, advocate and researcher in the NURS 4370L Medical Surgical Nursing III Lab/Clinical course which must be taken concurrently.

Upon completion of this course, the student will be able to:

1. Demonstrate a comprehensive understanding of shock, multiple organ dysfunction, trauma, cardiovascular, circulation, burns, and neurologic function.
2. Describe the nursing process for patients experiencing emergencies, shock, multiple organ dysfunction, trauma, cardiovascular, circulation, burns, and neurologic dysfunction.
3. Discuss safe, effective nursing care for patients with emergencies, shock, multiple organ dysfunction, trauma, cardiovascular, circulation, burns, and neurologic dysfunction through the nursing roles of practitioner, educator, advocate and researcher.

## **COURSE 34**

**NURS 4370L**

### **MEDICAL SURGICAL NURSING III**

**LAB/CLINICAL**

**0/0/4.0/4.0**

This course provides an opportunity for students to apply their growing knowledge base of adult medical surgical conditions through the nursing process and clinical reasoning in an acute care clinical setting for high acuity patients as they assume the roles of practitioner, educator, advocate and researcher. This course must be taken concurrently with NURS 4370 Medical Surgical Nursing III.

Upon completion of this course, the student will be able to:

1. Demonstrate nursing care in a safe manner in an instructor supervised real life patient care setting.

2. Collect subjective and objective health assessment data for adult patients in an acute care setting.
3. Apply the nursing process as a method for clinical reasoning and decision making.
4. Use effective communication with patients, instructor and peers.
5. Demonstrate accurate calculation and administration of medication dosages including intravenous therapy.
6. Demonstrate accurate and complete documentation of patient care in the DocuCare electronic medical record.
7. Where opportunities are available in the real-life patient setting, demonstrate all procedures learned in previous semesters according to best practices and evidenced based research.
8. Apply the nursing process to patients experiencing emergencies, shock, multiple organ dysfunction, trauma, cardiovascular, circulation, burns, and neurologic dysfunction.
9. Implement safe, effective nursing care for patients with emergencies, shock, multiple organ dysfunction, trauma, cardiovascular, circulation, burns, and neurologic dysfunction through the nursing roles of practitioner, educator, advocate and researcher.
10. Demonstrate nursing interventions to promote basic needs including activity and exercise; patient safety; hygiene; oxygenation, fluid, electrolyte and acid base balance; sleep; pain management; nutrition; urinary elimination; bowel elimination; skin integrity and wound care; and sensory alterations.

## **COURSE 35**

**NURS 4460**

### **MATERNAL CHILD NURSING**

**60/0/4.0/4.0**

This course focuses on evidence-based practice and family-centered care in maternity and pediatric nursing. The topics of pregnancy, labor and birth, postpartum, newborn, growth and development of the well child from newborn through adolescence, health promotion for well children as well as care of the child with a health disorder are explored. Students apply the knowledge in acute care hospital clinical units during NUR360L Maternal Child Nursing Lab/Clinical which must be taken concurrently.

Upon completion of this course, the student will be able to:

1. Examine the major components and key elements of family-centered care.
2. Describe maternal physiologic changes that occur during pregnancy.
3. Describe nursing management to promote maternal self-care and to manage high-risk pregnancy.

4. Explain the tests used to assess maternal and fetal well-being, including nursing management for each.
5. Summarize the nursing care throughout the labor and birth process.
6. Plan postpartum nursing care with interventions to reduce common postpartum complications and foster maternal/infant bonding.
7. Discuss the areas of health education needed for discharge planning, home care, and follow-up.
8. Describe a nursing care plan to address common issues related to growth and development for newborns through adolescents.
9. Apply the nursing process to the care of children with special needs and health disorders affecting each body system.
10. Identify appropriate nursing assessments and interventions for the child with a mental health disorder.

**COURSE 36**  
**NURS 4460L**  
**MATERNAL CHILD NURSING**  
**LAB/CLINICAL**  
**0/15/2.0/2.0**

This course focuses on evidence-based practice and family-centered care in maternity and pediatric nursing. Nursing skills for maternal, newborn and childcare are included in the laboratory component. Students apply the knowledge in acute care hospital labor and delivery, postpartum, newborn nursery, and pediatric clinical units. This course must be taken concurrently with NUR360 Maternal Child Nursing.

Upon completion of this course, the student will be able to:

1. Demonstrate nursing care in a safe manner in an instructor supervised skills laboratory and real-life patient care settings.
2. Collect subjective and objective health assessment data for women, infants and children in an acute care setting.
3. Apply the nursing process to a woman in labor as a method for clinical reasoning and decision making.
4. Demonstrate postpartum nursing care with interventions to reduce common postpartum complications and foster maternal/infant bonding.
5. Demonstrate health education to parents for discharge planning, home care, and follow-up.
6. Implement a nursing care plan to address common issues related to growth and development for newborns through adolescents.

7. Apply the nursing process to the care of children with special needs and health disorders affecting each body system.
8. Demonstrate care of the normal newborn.
9. Use effective communication with patients, instructor and peers.
10. Demonstrate accurate calculation and administration of medication dosages including intravenous therapy.
11. Demonstrate accurate and complete documentation of patient care in the DocuCare electronic medical record.
12. In a simulated laboratory setting and where opportunities are available in a real-life patient setting, demonstrate the following procedures according to best practices and evidenced based research:
13. Assessment: maternal and newborn, pediatric
14. Antepartum Care: Intrapartum vaginal exam, administration of RhoGAM
15. Intrapartum Care: Assisting with amniotomy; auscultating fetal heart rate, external and internal electronic fetal monitoring, monitoring a patient undergoing induction of labor, caring for a patient with an epidural
16. Postpartum Care: assessing the perineum, assessing the uterine fundus following birth, evaluating lochia, assisting with breastfeeding
17. Newborn Care: APGAR scores, thermoregulation, applying, caring for, and removing an umbilical cord clamp, assisting with circumcision and providing circumcision care, initial newborn bath, phototherapy for infant.
18. Medication Administration and Calculation: adult, infant, and children
19. Demonstrate nursing interventions for women, infants and children to promote basic needs including activity and exercise; patient safety; hygiene; oxygenation, fluid, electrolyte and acid base balance; sleep; pain management; nutrition; urinary elimination; bowel elimination; skin integrity and wound care; and sensory alterations.

**COURSE 37**  
**NURS 4410**  
**NURSING LEADERSHIP &**  
**MANAGEMENT**  
**30/0/4.0/4.0**

This course allows the student to explore management topics while building effective leadership skills, so they may function effectively in the rapidly changing health-care industry. Management and leadership issues such as operational planning, planned change, time management, professional advocacy, staffing, motivating, delegation, quality control and conflict resolution are discussed. Students will apply this knowledge through the nursing process and clinical reasoning in an acute care clinical setting as they develop their professional role of leader and

manager in the NUR410L Nursing Leadership and Management Lab/Clinical course which must be taken concurrently.

Upon completion of this course, the student will be able to:

1. Differentiate between leadership roles and management functions.
2. Analyze how current and future paradigm shifts in healthcare may affect the leadership skills needed by nurses in the 21<sup>st</sup> century.
3. Discuss ethical decision making congruent with the ANA Code of Ethics and Interpretive Statements and professional standards.
4. Differentiate between the manager's responsibility to advocate for patients, subordinates, the organization, the profession, and for self.
5. Develop a time management tool to complete nursing care according to the priority level they have been assigned and on time.
6. Recognize and problem solve budgetary constraints.
7. Describe characteristics of magnet designated health-care organizations that exemplify the 14 forces of magnetism.
8. Differentiate among various types of patient care delivery systems.
9. Address the unique challenges of building a cohesive team through education and socialization, when a diverse workforce exists.
10. Select appropriate staffing policies for a given situation.
11. Determine whether delegation to an unlicensed worker is appropriate in a given situation, using a decision tree developed by the NCSBN and/or TBON.
12. Describe key components of total quality management.

**COURSE 38**  
**NURS 4250**  
**PROFESSIONAL NURSING ISSUES**  
**30/0/2.0/2.0**

This course provides an overview of significant issues that impact the nursing profession. Both enduring professional issues and the most pressing contemporary issues facing the profession are explored, to include furthering the profession, issues of the workforce, workplace, nursing education, and legal and ethical issues, and professional power.

Upon completion of this course, the student will be able to:

1. Analyze the potential impacts of raising the educational entry level on the current nursing shortage, workforce diversity, and intra-professional conflict.
2. Describe the driving and restraining forces for increasing the entry educational level for advanced practice nursing to that of a practice doctorate.
3. Evaluate strategies directed at both supply and demand factors that have been proposed

in an effort to reduce the current nursing shortage.

4. Integrate ethical, legal, and human rights as guides for developing best practices to guard against and respond to workplace violence.
5. Analyze how social media can be effectively used by the professional nurse.
6. Identify at least three models of transition to practice programs.
7. Discuss consequences of a lack of academic integrity in nursing programs.
8. Compare continuing education requirements for nurses with those for other health care professionals.
9. Identify issues currently being debated in the legislature that affect nursing and health care.
10. Explore the roles and responsibilities that individual nurses, employers, professional associations, and the media have to ensure that nurses are portrayed accurately and positively to the public.
11. Describe types of nursing associations and their value to members and the profession.

**COURSE 39**  
**NURS 4380**  
**PRECEPTORSHIP + LAB/CLINICAL**  
**0/0/3.0/3.0**

This course builds on the knowledge and skills obtained in the nursing curriculum and integrates the curriculum concepts in varied/diverse practice settings. Synthesis of management, organizational, culture and interpersonal relationship principles are applied with developing independence in the practice of nursing. This course facilitates the students' evaluation of principles and practices of the profession of nursing while assisting in the role transition to a practicing registered nurse. Clinical environments could be, but are not limited to medical/surgical, mental health, pediatric, maternity, critical care, home, nursing home and extended or ambulatory care units.

Upon completion of this course, the student will be able to:

1. Deliver holistic nursing care to groups of patients consistent with the job description for a registered nurse in the assigned clinical practice setting.
2. Apply the nursing process and critical thinking skills when implementing safe, appropriate and caring interventions within the professional nursing scope of practice.
3. Demonstrate effective management of both the patients and staff through collaboration and delegation.
4. Evaluate how the organizational design and culture of the health care system affects the delivery of nursing care.
5. Demonstrate professional communication techniques when interacting with staff, patients, and families.
6. Evaluate the legal and ethical aspects of the professional nursing role in the assigned clinical practice setting.

7. Use standards of practice to evaluate care administered by the interdisciplinary health care team.
8. Participate in coordination of patient transfer to and from the assigned clinical practice unit and/or setting.

**COURSE 40**  
**NURS 4390**  
**NURSING CAPSTONE**  
**45/0/3.0/3.0**

This course prepares students to transition to the professional nursing role as an entry-level registered nurse. Students will understand the importance of effective inter- and intra-professional communication and work dynamics, the employment process, career development, nursing jurisprudence related to the provision of safe and effective nursing care, and preparation for the NCLEX-RN examination.

Upon completion of this course, the student will be able to:

1. Identify individual nursing content areas of mastery and weakness.
2. Develop an individualized study plan for the NCLEX-RN.
3. Discuss differentiated practice as it applies to Texas Board of Nursing educational outcomes for graduates of Texas nursing programs.
4. Explain the competencies needed by the new graduate as outlined by the job analysis study that is the basis for the NCLEX-RN.
5. Meet the Texas Board of Nursing criteria for successful completion of the Texas Nursing Jurisprudence examination.
6. Develop a personal career plan.
7. Create a professional portfolio.
8. Demonstrate a variety of communication modes for effective organizational communication.
9. Describe group dynamics and roles to facilitate communication and productivity.



# WESTERN TECH

## POLICIES AND STANDARDS

### Awards

Honor Student Awards are given at the end of each grading period to outstanding student(s) in each department. Selections are based on those performance characteristics that employers frequently look for in a graduate: shop/lab grades, exam grades, attendance, shop safety, dependability, cooperation, and initiative. Students who achieve at least a 95% grade average and a 98% attendance will be eligible for Honor Student Awards.

Directors Honor Roll Certificates are awarded at the end of each grading period to students who achieve at least a 90% grade average and a 98% attendance record.

Perfect Attendance Awards are presented to those students who complete each grading period with 100% attendance.

### Attendance Policies

In order to better prepare students for employment, by developing good habits, it is essential that absenteeism and tardiness be kept to an absolute minimum. Western Tech strives to enforce attendance policies which require students to regularly and punctually attend class. All absences and tardiness are recorded regardless of the reason.

The College will evaluate each student's attendance at the end of each semester. In cases of excessive absenteeism or tardiness, the College may take disciplinary action prior to the end of the semester, however the student will be afforded reasonable opportunities in which to bring his/her overall attendance to the minimum benchmark of 85% within the semester. Students who miss more than 15% of their scheduled classes after the first semester will be placed on attendance probation for the following semester. A student missing over 15% of the scheduled class days during the probationary semester may be terminated from the College. Student is at risk of being terminated when his/her absences exceed 15% of the total cumulative hours in the program. Authorized Leaves of Absence (LOA) will not be included in the attendance percentage of a course.

As mandated by the Texas Workforce Commission, the school's regulating body, consecutive absences (without an approved leave of absence) cannot exceed ten (10) consecutive days or more than 20% (25% for the Commercial Driver Training program) of the scheduled course time for the program, whichever is less. To do so may result in the student being processed as a drop from the program. The Campus President may exercise an exception to this policy if the absences exceed 10 days due to extenuating circumstances. Any student who is terminated for unsatisfactory attendance may not re-enter college before the start of the next grading period and will only be readmitted if the factor(s) contributing to the poor attendance has been resolved to the College's satisfaction. A student who was terminated for violating the attendance policy and that is readmitted will be placed on attendance probation for at least one course.

College holidays and scheduled annual breaks are not considered days of absence. However, the Veterans Administration regulations require that all scheduled school breaks be reported.

### Tardy Policy

Students will be deducted time to the nearest quarter for coming in late to class and from breaks and for leaving early for the day. If a student arrives any time after 8:00 a.m., but before 8:15 a.m., the student will be charged 15 minutes. If the student arrives after 8:15 a.m. but before 8:30 a.m., the student will be charged for 30 minutes, and so on. The same applies when a student leaves class for any reason.

All tardiness is reported by the instructor to the registrar and will be used as part of the overall attendance percentage. A student can end up on attendance probation without having missed a day of school if the tardiness accumulates. Furthermore, instructors have the authority to request work at the start of class, and students arriving late may end up with a lesser grade or a zero for a grade, depending on the policy laid out by the instructor. Instructors can further schedule quizzes and exams at the start of class. Students arriving late may also be subject to receiving a lesser grade or a zero, depending on the class policy. Students missing 30% of an entire course may be required to retake the course in its entirety. It's important to arrive to school on time, and not leave class early.

### Make-up Work & Hours

At its discretion, the College may allow a student, who for reasons acceptable to the College, is experiencing non-repetitive, extreme attendance problems, to make up essential coursework previously missed due to absenteeism. It is the student's responsibility to contact his/her department program director and instructor to arrange for any make-up work & hours. **No more than 5% of the total program clock hours can be made up.** In the event that a student misses a significant number of hours in a course, the instructor may determine that's in the best interest of the student to repeat the entire course.

Instructors are required to advise students of their current attendance as well as academic status in school and generate advising forms for any academic or attendance issues that occur. If make-up hours are required, the instructor and PD will ensure that all make-up hours are completed before the end of each semester.

### All make-up work & hours must:

1. Be approved by the Instructor and department Program Director.
2. Be supervised by an instructor approved to teach the subject matter being made up.
3. Require the student to demonstrate the same level of knowledge and competence

expected of a student who attended the scheduled class session.

4. Be completed within two weeks following the date of the absence or the date in which the student returns to college.
5. Be documented by the instructor as being completed. The documentation should include the date, time, duration of the make-up session, as well as the name of the supervising instructor.
6. Be signed and dated by the student and the instructor to acknowledge the make-up session.
7. Be documented using a make-up time form.

### Leaves of Absence (LOA)

A leave of absence (LOA) is a temporary interruption in a student's program of study and should only be requested in case of emergencies and extenuating circumstances including but not limited to medical reasons, military service, or death of a family member. In order to request a LOA, the student must submit a signed, written request to the registrar Administrative Supervisor or Student Services Coordinator. The written request should include the reason for the LOA and the amount of time needed. All LOAs must have prior approval by the students' program director, Student Financial Services Director and Campus President.

In the rare event the student is unable to submit a letter requesting the leave, the student must verbally communicate with his/her Program Director, Financial Aid Director or Campus President.

Leaves of absence shall be reasonable in duration, preferably not to exceed 30 calendar days. Western Tech highly discourages any requests for an additional leave of absence; however, Western Tech may grant more than one LOA in the event that an unforeseen circumstance arises, such as medical reasons, military service, or jury duty. The LOA, together with any additional leaves of absence, must not exceed a total of 180 days in any 12-month period. However, Western Tech may grant only one (1) more additional LOA within a 12-month period, in the event that an unforeseen circumstance arises.

### All Students:

- Retaking a course may affect the student's graduation date and depending on course schedules and availability, may require the student to change class schedules for the remainder of their training.
- Students on a LOA remain in Active Status; therefore, they are still obligated to maintain payments due to Western Tech.
- **Students must return on or before the day they are required to from their Leave of Absence. Failure to do so will result in being dropped from the program.**

In order to graduate, a student's cumulative absences (not including Leave of Absence) must not exceed 15% of the total program hours.

Refer to the Active Military and Veterans section for the veteran leave of absence policy.

### Drop/Withdrawal

If a student should elect to withdraw from his/her program for any reason before the completion of his/her training, the student is required to inform Western Tech in writing. **Notification must be delivered to the college director prior to withdrawing.**

Upon withdrawing or being dropped from a program, any scholarship(s) or exemption credit(s) for courses not taken, may be charged back to the student. Any credits to the students' account will follow the Return to Title IV policy, located in the Student Financial Services section and any unused VA benefits will be returned to the VA. The students will be charged a restocking fee for programs that issue tools, and any other administrative fees attached to the drop process.

### Withdrawn (W) and Withdrawn and Failed (WF)

Students who withdraw from a course before completing 75% of their course, will earn a "W" for Withdrawn. Students who withdraw from a course after completing a minimum of 75% will earn a "WF" for Withdrawn and Failed.

### Cancellation

Students who decide to leave their program within the first **14 days school days** of starting their program will be entitled to a full tuition refund, less administrative fees not to exceed \$100.00, and will be eligible for a full refund of books, tools and supplies (including uniforms) if returned to WTC in good condition.

### Probation

Students falling below minimum attendance and academic requirements, will have the length of the semester to coordinate with their instructor to improve their grades and attendance in order to meet the minimum standards. Students that fail to meet the minimum requirements will be placed on attendance and/or academic probation. If students still do not meet the minimum requirements after their probationary period ends, they will be dropped from their program.

### Restarts

Previous students that wish to return to WTC to complete their previous program, will be required to go through the admissions process, only if the program has changed significantly. All previous students from the Performance Tuning and Light Duty Diesel programs will need to go through the Admissions process.

### Readmittance

Students who have dropped from the college or have been terminated for violation of the College policies and standards, attendance or academic issues may request consideration for re-admittance by writing a letter to the Campus President specifically explaining the following:

1. What variables prevented them from maintaining satisfactory attendance, academic requirements or adhering to the Western Tech policies and standards.

2. What has been done to correct the issue(s).
3. What can the college expect from the individual if allowed to return?

Students that are dropped for attendance or academics and have earned an “F” for the course, may be allowed to retake the course at no cost to them. If the student fails the course again, the student will be required to pay for the course at a 50% reduced cost.

**Students will only be allowed to restart once in the same program.** The student must also be able to demonstrate that he/she has the financial resources to complete the program.

**NOTE:** If a program changes from the time the student dropped to the time, he/she re-enters, the student will be required to retake all courses that have revised objectives, regardless of the course code.

### Clearance by WTC to complete Internship

Students will not be allowed to go to Internship until they have been cleared through Career Services, Student Loan Advisors, Financial Aid, Student Accounts and the Administrative Supervisor. The clearance through these departments will occur a minimum of 45 days before the scheduled internship.

## STUDENT ACADEMIC PROGRESS (SAP)

### Attendance Symbols Used by Faculty

Below is a list of symbols used by the College to document attendance for students. Attendance is recorded by the instructor and posted on a daily basis.

P – Present

A – Absent

P Number of Hours Present

Example: P<sub>3</sub> = Student was present for 3 hours.

W – Withdrawn

LOA – Leave of Absence

LDA – Last Day of Attendance

I – Incomplete

M – Make Up

S – Class Audit (Sit-In)

### Academic Grading Scale

Numeric Scale	Letter
98 – 100 4.0	A+
94 – 97.9 4.0	A
90 – 93.9 4.0	A-
88 – 89.9 3.75	B+
84 – 87.9 3.5	B
80 – 83.9 3.0	B-
78 – 79.9 2.75	C+
74 – 77.9 2.5	C
70 – 73.9 2.0	C-
68 – 69.9 1.75	D+
64 – 67.9 1.5	D
60 – 63.9 1.0	D-
BELOW 60 0.0	F

### Satisfactory Progress

Upon completion of each course, all students will be able to access their progress report through the student portal. Students must achieve and maintain a CUMULATIVE grade point average (GPA) of 2.0 in all courses, and all course work must be satisfactorily completed to be eligible for graduation.

### Unsatisfactory Progress

If a student’s GPA falls below 2.0 at the end of the first course, the student may be dropped from the

program for not meeting the GPA requirements. If a student’s GPA falls below a 2.0 at the end of any course after the first, the student will be placed on academic probation for the following term. If a student fails to achieve the required GPA of 2.0 while on probation, it may be extended for a second course during which the student’s CUMULATIVE GPA must be a 2.0 or higher. A student failing to achieve the required GPA during this time will be terminated.

Students on academic probation are given written notification that if the unsatisfactory progress continues, it will result in their termination from the College.

A student whose enrollment was terminated for unsatisfactory progress may be re-entered after a minimum of one (1) grading period. A student who returns after the enrollment was terminated for unsatisfactory progress shall be placed on academic probation for the next grading period.

Students who miss their final for the course are required to prove (or demonstrate) that an emergency occurred preventing them from being present at the exam, otherwise students will receive a ZERO. Students who miss an exam for a death in the family, jury duty or while on an authorized leave of absence (LOA) will be allowed to take a make-up exam for full credit.

Students receiving an “F” grade must repeat the failed course in order to receive credit. It is at the discretion of the Program Director to allow the student to continue until the course becomes available.

Students who are required to repeat a failed course will not be charged for their first retake within their program of study. If a student is required to repeat any additional course(s) beyond the first retake, the student will be charged 50% of the cost of tuition for that course.

No make-up work will be allowed on missed or failed “pop quizzes” or open book tests.

The student will be required to demonstrate an entry-level degree of proficiency in each competency which has been warranted during the course it is taught. An inability to achieve the required level of competency in the warranted skills will prevent the student from being able to advance into the next course or graduate.

Refer to the Nursing, Physical Therapy Assistant and Massage Therapy program pages for more information on their specific academic policies.

## STUDENT CODE OF CONDUCT

Any violation of Western Tech policies & standards, including safety violations, abusive language, drinking or illegal use of drugs (on or off campus) may result in suspension or termination. Improper conduct off campus may also result in suspension or termination.

Students are required to follow college policies and standards while attending Western Tech. It is the student’s responsibility to conduct them-selves in a proper and respectable manner while attending the College.

Any student who fails to comply with the conduct standards and policies as published on the Western Tech website, ([www.westerntech.edu](http://www.westerntech.edu)), may be subject to verbal or written reprimand, probation, suspension, or termination from Western Tech depending on the nature

and severity of the violation. Re-admittance following such termination is at the discretion of the College and relative to the nature and severity of the conduct violation. Students should immediately report any conduct violations to their instructor or other school official.

A detailed list of infractions against WTC's conduct policies can be located in the student handbook and on WTC's website, [www.westerntech.edu](http://www.westerntech.edu).

### **Suspension**

A student may be suspended due to a violation of any Western Tech policies or standards. All suspensions are determined by the Campus President, instructor, and program director. There is a maximum time frame of three (3) days per suspension.

## **SUPPORT SERVICES**

### **Student Services**

The purpose of the Student Services is to provide assistance to students that may be experiencing difficult life situations while enrolled at Western Tech. Available resources to students include:

- Federal Work Study Job Opportunities
- Transportation
- Off Campus Housing Information
- Local Health Clinics

Student Services partners with individual organizations, agencies and companies throughout the region to provide employment opportunities, community resources and volunteer activities that will assist students in their educational process.

### **Learning Resource Center**

The Learning Resource Center (LRC) is available to both current students and graduates of Western Tech. The LRC provides instruction, services and materials to help enhance academic growth and personal enrichment to help support the college's mission. The center provides a range of services for faculty as well as for students and alumni including but not limited to the following:

- Book borrowing and searching capabilities
- Online catalog
- Online databases

The LRC hours of operation are found in the student handbook, posted in the library, and on WTC's website ([www.westerntech.edu](http://www.westerntech.edu)).

### **Tutoring**

Tutoring services are offered for students experiencing difficulty with their studies or wanting additional academic assistance. Students on academic probation should attend tutoring sessions. This tutoring is offered as a free service for the benefit of students.

### **Advising**

Academic, attendance, career, professional development, and continuing education advising is provided by faculty, program directors, administrative supervisor, dean, student services coordinator, and Campus Presidents.

Advising services are provided on an individual or small group basis to help students deal with concerns or problems so that he/she may maximize his/her college experience.

Western Tech does not offer counseling services. However, a resource directory is available for students seeking professional counseling, health, financial, legal, and other services. Copies of the directory are located throughout the campus and are available upon request.

### **Testing Center**

Western Tech offers testing facilities for our students and the community alike. We are authorized to provide certification and professional licensure examinations through GED and Pearson Vue testing partners. Main hours of operation are from 8:00 am until 5:00 pm, Monday through Thursday, and 8:00 am through 12:30 pm on Fridays. For more information, please contact a test administrator at 1-800-225-5984.

## **STUDENT COMPLAINT/GRIEVANCE PROCEDURE**

If a student feels that he or she has an issue or grievance which needs to be addressed, the student must first take the issue to an instructor, program director.

If the complaint cannot be adequately resolved there, the student must then address it, in writing, to the Campus President and if not resolved at that level then the complaint should then be addressed to the CEO.

Schools accredited by the Accrediting Commission of Career Schools and Colleges must have a procedure and operational plan for handling student complaints. If a student does not feel that the College has adequately addressed a complaint or concern, the student may consider contacting the Accrediting Commission. All complaints considered by the Commission must be in written form, with permission from the complainant(s) for the Commission to forward a copy of the complaint to the school for a response. The complainant(s) will be kept informed as to the status of the complaint as well as the final resolution by the Commission.

Please direct all inquiries to:

Accrediting Commission of Career Schools and Colleges  
2101 Wilson Blvd., Suite 302  
Arlington, VA 22201  
(703)247-4212  
[www.accsc.org](http://www.accsc.org)

A copy of the Commission Complaint form is available at the College and may be obtained by contacting the registrar or Campus President.

### **The following is the TWC Complaint Procedure:**

Dear Students:

This school has a Certificate of Approval from the Texas Workforce Commission (TWC).

The TWC-assigned school number is: S0117 (Branch) and S0118 (Main).

The school's programs are approved by the following entities: TWC, Career Colleges & Schools of

Texas, Texas Higher Education Coordinating Board, and the Accrediting Commission of Career Schools and Colleges. For school S0017 (Branch), the Texas Department of State Health Services approves Massage Therapy Program, and the Commission on Accreditation in Physical Therapy Education approves the Physical Therapist Assistant Program.

Students must address their concerns about this school or any of its educational programs by following the grievance process outlined in the school's catalog. Schools are responsible for ensuring and documenting that all students have received a copy of the school's grievance procedures and for describing these procedures in the school's published catalog. If, as a student, you were not provided with this information, please inform school management.

Students dissatisfied with this school's response to their complaint or who are not able to file a complaint with the school, can file a formal complaint with TWC, as well as with other relevant agencies or accreditors, if applicable.

Information on filing a complaint with TWC can be found on TWC's Career Schools and Colleges Website at <http://csc.twc.state.tx.us/>.

If a student does not feel that the College has adequately addressed a grievance or concern, students may contact the state licensing in writing at:

The Texas Workforce Commission,  
Career Schools and Colleges Section,  
101 East 15th St., Austin, TX 78778-0001

### **Contact information for filling student complaints with the Texas Higher Education Coordinating Board including:**

**How to submit a Student Complaint:** After exhausting the institution's grievance/complaint process, current, former, and prospective students may initiate a complaint with THECB by sending the required forms either by electronic mail to [StudentComplaints@thecb.state.tx.us](mailto:StudentComplaints@thecb.state.tx.us), or by mail to the Texas Higher Education Coordinating Board, Office of General Counsel, P.O. Box 12788, Austin, Texas 78711-2788. Facsimile transmissions of the forms are not accepted.

The web address for the Texas Higher Education Coordinating Board's Student Complaints page with forms and a description of the complaint procedure: <http://www.thecb.state.tx.us/links/student-complaints/>  
The THECB complaint form is: <http://reportcenter.thecb.state.tx.us/agency-publication/blank-forms-templates/student-complaints-form/>

### **Massage Therapy: Contacting the Texas Department of Licensing and Regulation (TDLR)**

Standard Western Tech protocol will be followed in regard to the grievance policy however, with some variations that are specific to the Massage Therapy program. Those variations can be found in the

individual program section of this catalog and on the Western Tech website, [www.westerntech.edu](http://www.westerntech.edu).

### **Physical Therapist Assistant**

Standard Western Tech protocol will be followed in regard to the grievance policy however, with some variations that are specific to the Physical Therapist Assistant program. Those variations can be found in the individual program section of this catalog and on the Western Tech website, [www.westerntech.edu](http://www.westerntech.edu).

### **Appeals**

A student has the right to appeal depending on the nature and severity of the situation, as noted in the Student Handbook Code of Conduct. The student will be required to do the following:

1. Submit a letter to the attention of the Campus President, detailing the issues that surrounded the dismissal.
2. Request an appeal of the decision rendered, with reasons stating why WTC should reconsider
3. The letter can be mailed or presented in person and **MUST** be signed by the student. Letters sent by email **WILL NOT** be accepted.
4. Letters must be sent within 10 days from the day of dismissal in order to be considered.

Upon the Campus President receiving the letter, the student will be notified within 48 hours by the Campus President who will determine if the violation merits further action or not.

In most cases, a panel will be assembled.

**NOTE:** If student is allowed back in school, the student may or may not end up in the same classroom, and may have to consider a different schedule, or a different start date for the following class. This decision is at the discretion of the Program Director and Campus President.

## **INTERNSHIP/CLINICAL REQUIREMENTS**

Students must complete all program requirements before going on internship; to include obtaining required certifications, competency testing, and term papers due. Failure to fulfill this requirement will result in a delayed internship start until the requirement is met.

Internships provide students the opportunity to apply their knowledge and skills learned in school at an actual employer job site prior to graduation. They will improve their new skills by working alongside experienced professionals in the field. During internship students must attend the same work schedule and hours as regular employees at their intern site.

During their internship, students may be required to work up to eight (8) hours per day and will need to adjust their schedules accordingly. Any exceptions must be approved by the internship coordinator.

Each student will be placed into an approved business location relative to his/her field of study. Normally, internships are unpaid.

The internship coordinator will supervise each student's progress. Supervision will consist of reviewing student evaluations provided by the sponsor site and regular intern site visits. The intern site manager or supervisor will complete weekly student evaluations. During this review, any deficiencies indicated will be addressed with the student. The student will work with the internship program coordinator to establish an individual study program designed to address and correct the areas that may need improvement.

Clinical and internship sites may require drug testing and or background checks prior to the student's scheduled internship/clinical experience. The cost(s) of testing is the responsibility of the student, and the student will be required to make payments in full directly to the college. Drug screens are \$30.00, and background checks are \$32.75.

In the event a student tests positive for illegal drugs, the student will be automatically suspended from his/her program of study for a period of no less than thirty (30) days. At the completion of thirty (30) days, the student will be required to re-take a drug test at their cost. If the drug screen returns negative, the intern coordinator or Academic Coordinator of Clinical Education (ACCE) will be allowed to work with the student to place them at a site. If it returns positive, the student will be dropped from the program. Students will be provided with a resource directory and Western Tech will advise the student to seek counseling. If the student chooses to go through drug counseling, the student may re-apply for their respective program thirty (30) days after termination, given the student can provide proof of having successfully completed drug counseling.

Students from all disciplines are encouraged to be truthful and honest about their backgrounds. In the event the background check reveals any misdemeanor or felony convictions in which the student did not make Western Tech aware of before the check was administered, Western Tech reserves the right to take action against the student, to include, but not limited to suspension or termination from the program. This depends upon the severity of the infraction, and will be determined by the program director, academic dean, and Campus President.

The student must successfully complete the internship program before he/she will be allowed to graduate.

### **Internship Dress Code**

The Employer /Internship sites may have dress code policies which students are required to abide by. Failure to comply may result in termination of student internship opportunity, which may affect the student's status in his/her educational program. Students may be required to remove any piercings, adjust attire/uniform or cover tattoos/body art to start and complete their internship.

**Note: While every effort will be made to schedule internship experiences for students in the evening program to coincide with their school schedule, most**

**companies in the business field operate during regular business hours, which is 8:00 a.m. to 5:00 p.m. Therefore, evening students need to be prepared to attend their internship during morning, afternoon, and/or weekends hours in order to successfully complete this program requirement.**

### **GENERAL INFORMATION**

#### **Program Changes**

Any changes to a student's program must be made through the registrar at each campus. Changes affecting the length or attendance schedule of a student's program may have a significant effect on the student's financial arrangements with Western Tech. All program changes are subject to review by the Campus President, financial services, student accounts, and program director.

In addition, any student who requests a transfer to a different schedule must receive prior approval from the program director and all changes must be processed through the registrar of that campus. Students are allowed to transfer to a different schedule twice during the length of their program

#### **Curricula Revisions**

The College reserves the right to vary the sequence of courses and revise and/or update curriculum content, textbooks and tool sets as needed, with or without notification.

#### **Grade Levels**

Students attending Western Tech should consider themselves as having advanced beyond post-secondary freshman grade level upon successful completion of a minimum of twenty-four (24) semester hours and thirty (30) weeks of training. Each additional twenty-four (24) semester hours and thirty (30) weeks of successful training represent advancement beyond the next grade level.

#### **Semester Credit Units (TWC & THECB)**

A semester credit unit (SCU) earned is defined as the successful completion of fifteen (15) clock hours of theory instruction, thirty (30) clock hours of laboratory instruction, or forty-five (45) clock hours of internship. Each clock hour is at least fifty (50) minutes in length. At least one hour of study time is recommended for each hour of lecture.

All conversions for Semester Credit Units are defined by state regulators; namely Texas Workforce Commission (TWC) and Texas Higher Education Coordinating Board (THECB).

#### **Semester Credit Hours (ACCSC)**

Semester Credit Hours are defined by Western Tech's Accreditor, the Accrediting Commission of Career Schools and Colleges (ACCSC) and are approved by the US Department of Education. ACCSC approved SCHs are used Title IV Financial Aid disbursement.

Credit units and credit hours are discussed in detail in the College catalog. We use multiple sources to ensure that the assignment of credit hours conforms to commonly accepted practice in higher education. We use the state's inventory of courses, the Higher Education Coordinating Board's Workforce Education Course Manual that provides guidance for

technical courses throughout the state for our AAS degree programs and the Academic Course Guide Manual as a guide for our general education courses. These manuals provide to both public and private institutions accepted thresholds on course length, content, and objectives that are used statewide. We also rely heavily on input from our Program Advisory Committees, who twice a year influence the direction of our offerings by recommending deletions and additions to our program listings. Finally, we rely on employers who hire our graduates. These employers keep us most current because they describe the immediate needs of the workplace.

### Physical Therapist Assistant Specific Requirements

Standard Western Tech protocol will be followed in regard to earning semester credit hours however, with some variations that are specific to the Physical Therapist Assistant program. Those variations can be found in the Physical Therapist Assistant program section of this catalog and on the Western Tech website, [www.westerntech.edu](http://www.westerntech.edu).

### Program Advisory Committee (PAC)

Every program taught at Western Tech has a Program Advisory Committee (PAC). The members of the Committee are employers who hire Western Tech graduates and who are leaders in their technical fields. All Programs Advisory Committees meet twice a year.

The Advisory Committees are designed to help keep Western Tech curricula up to date with ever-changing procedures and equipment improvements in the technical industry. By keeping in touch with and seeking the advice of those companies that employ Western Tech graduates, the college is able to better train its students to successfully compete in today's global economy.

### Dress Code

All students at Western Technical College are required to wear specific uniforms each day. Variations of the dress code may occur for your program under the direction of your program director and/or instructors. The Western Tech student dress code is as follows:

- a. All students must wear their student issued uniforms or scrubs while they are attending school.
- b. All students must wear closed toe shoes with socks. All welding students must wear leather boots.
- c. Where applicable, personal protective equipment must be worn as directed by each department.
- d. Shorts, tank tops, sweatpants or other clothing or headwear considered inappropriate by the school, may not be worn at school.
- e. Excessively long hair and beards may create a safety hazard and must be tied or braided during shop/laboratory.
- f. Sunglasses are not to be worn anywhere inside the building.

**NOTE: Program Directors and Instructors have the authority not to allow baseball caps or other**

**headgear to be worn in the classroom, shop areas or lab areas.**

### Books & Tools Buy-Back Policy

Western Tech will, on a case-by-case basis, consider a buy-back of books, supplies, and tools that are, in the College's sole discretion, in a good condition such that they could be re-issued. The student's program director will take an inventory of all tools and supplies, determine their condition, and either approve or deny the buy-back.

Due to the used nature of the books, tools, and supplies; all buy-backs will be at a reduced price of the original cost to the student and carry an associated restocking fee and administration fee.

Buy-backs are not a cash transaction. When a buyback is approved, the associated amount will be credited to the student's ledger to offset a balance due.

Western Tech does not guarantee the buy-back of any item.

### Official Communication Policy

Any official correspondence from Western Tech to students will be made:

- **In Writing:** at the permanent postal mailing address, or via personal delivery within the school premises; and/or
- **Via Email:** at the Western Tech email address provided to all students.

Students are responsible for reading and responding appropriately to any official correspondence upon receipt from Western Tech staff or faculty.

### Change in Scheduled Operations

A change in scheduled operations including weather-related closing announcements, class cancellations, early dismissal, emergency evacuation, etc. will be made:

- Through the Western Tech text message alert system;
- On-site at both campuses via signage;
- Via the Western Tech email address provided to students, instructors and staff;
- [www.westerntech.edu](http://www.westerntech.edu) – Western Tech homepage; and/or via local broadcast media.

### Class Size

The number of students per class or per instructor varies depending on the course of study. Generally, lecture class limits the maximum number of students to 30 per instructor. The maximum ratio for lab/shop instruction is set at 20 students per instructor.

For students enrolled in the Massage Therapy program, no more than 3 students can work from 1 table during lab time.

Class size for Massage Therapy: A maximum of 24 students per class.

Class size for Physical Therapist Assistant: A maximum of 24 students per class and a maximum of 12:1 student instructor ratio for laboratory.

### Comparable Program Information

Students who desire to compare program information related to tuition and program length may do so by writing or calling the following agencies:

**Texas Workforce Commission**  
Proprietary Schools Section  
101 East 15th Street

Austin, Texas 78778-0001

**The Accrediting Commission of Career Schools and Colleges**

2101 Wilson Blvd., Suite 302  
Arlington, VA 22201  
Telephone: (703) 247-4212



## FAMILY EDUCATIONAL RIGHTS AND PRIVACY ACT (FERPA)

The Family Educational Rights and Privacy Act (FERPA), of 1974, is a federal law that pertains to the release of and access to student educational records. FERPA rights apply to students and guardians of a dependent minor student; a student is a person who is, or has been, in attendance at the College, regardless of the person's age. Under FERPA, a student has a right to:

- Inspect and review his or her educational records
- Request to amend his or her educational records
- Have some control over the disclosure of information from his or her educational records

The directory information made available by the School is:

- Name (maiden, other, preferred, primary)
- Address (all known)
- Telephone (all known)
- Date of Birth
- Birth Location
- Course
- Dates of Attendance
- Degrees & Awards Received
- Most Recent Previous Educational Institution Attended

The Family Educational Rights and Privacy Act also authorizes disclosure of this information without the student's consent under certain circumstances. Directory information will be provided to the public upon request unless the student files a request with the College asking to be excluded from the directory or from any other requests for open directory information from outside entities. A student may update access to their information by contacting a school employee and filing a request to be excluded from the directory or from any other requests for open directory information.

According to FERPA, some non-directory student records may not be released without prior written consent from the student. A record is any information recorded in any way, including but not limited to handwriting, print, tape, film, microfilm, microfiche, and digital image. Educational records are all records that contain information that is directly related to a student and that are maintained by an educational agency or institution or by a party acting on its behalf. Educational records do not include the following:

- Sole possession records (those records kept in the sole possession of the maker which are used only as a personal memory aid and are not accessible or reviewed by any other person except a temporary substitute for the maker of the record)
- Medical or psychological treatment records that include but are not limited to records maintained by physicians, psychiatrists, and psychologists
- Employment records, provided that employment is not contingent upon being a student
- Law enforcement records

The College will disclose information from a student's education record without the written consent of the student to staff members who require access to educational records in order to perform their legitimate educational duties; officials of other schools in which the student seeks or intends to enroll; and in connection with a student's application for, or receipt of, financial aid; and state, federal, and accrediting agencies as required.

Under FERPA, students have a right to see, inspect and request changes to their educational records. Upon request, the College shall provide a student access to his or her educational records except for financial records of the student's parents or guardian; and confidential letters of recommendation where the student has signed a waiver of right of access. Educational records covered by FERPA normally will be made available within ten (10) days of the request. All records are to be reviewed by students in the presence of a staff member. The contents of a student's educational records may be challenged by the student on the grounds that they are inaccurate, misleading, or otherwise in violation of the privacy rights of the student by submitting a written statement to the school.

It is the policy of the College that it will maintain the FERPA disclosure code in effect at the time of a student's last term of enrollment for former students. Furthermore, the College will honor a request from a former student, not re-enrolled, to add or delete a non-disclosure request.

Rights under FERPA cease upon death. However, it is the policy of the College that no records of deceased students be released for a period of five (5) years after the date of the student's death, unless specifically authorized by the executor of the deceased's estate or by next of kin.

If students believe that their FERPA rights have been violated, they may contact the Family Policy Compliance Office at the Department of Education, 400 Maryland Ave. SW, Washington DC 2002-4605. Additional information is available at [www.ed.gov/policy/gen/guid/fpco/](http://www.ed.gov/policy/gen/guid/fpco/)

### Parents Rights under FERPA

At the post-secondary level, parents have no inherent right to access or inspect their son's or daughter's educational records, including final grades, grades on exams, and other information about academic progress. This information is protected under FERPA and parents do not have access to it unless the student has provided express,

written authorization, or unless the student is a dependent as defined in Section 152 of the Internal Revenue code of 1954.

Students can give express written permission of access to their educational record by completing the FERPA Release Form and remitting it to the school.

In emergency or crisis situations, the school may release non-directory information if the institution determines that the information is necessary to protect the health or safety of the student or other individuals.

### **General Policy**

Under the authority of the Family Educational Rights and Privacy Act of 1974, as amended, students have the right to examine certain files, records, or documents maintained by the school, which pertain to them. The College will permit students to examine such records within forty-five (45) days after submission of a written request, and to obtain copies of such records upon payment of a reproduction fee.

Students may request that the College amend their education records on the grounds that they are inaccurate, misleading, or in violation of their right to privacy. In the event that the College refuses to so amend the records, students may request a hearing. If the outcome of a hearing is unsatisfactory, the student may submit an explanatory statement for inclusion in the education record.

Students have the right to file complaints with the U.S. Department of Education concerning the school's alleged failure to comply with the Act.

### **Education Records**

Education records are files, records, or documents maintained by the school, which contain information directly related to the students. Examples of education records are student education files, placement files, and financial aid files. The only persons permitted access to such records are those who have legitimate administrative or educational interest.

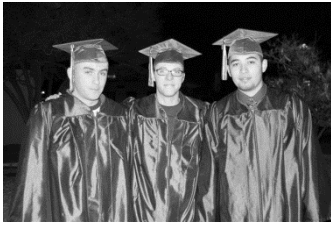
### **Exemptions**

The following items are exempt from the Act:

- a) Parents' Confidential Statements and the Financial Need Analysis Report.
- b) Confidential letters of recommendation received by the school prior to January 1, 1975. The Act permits students to waive their right of access to letters received after 1974 if the letters are related to admissions, employment, or honors.
- c) Records about students made by teachers or administrators which are maintained by and accessible only to teachers or administrators.
- d) School security records.
- e) Employment records for school employees who are also current or former students.
- f) Records compiled or maintained by a physician, psychiatrist, psychologist, or other recognized professional or paraprofessional acting or assisting in such capacities, for treatment purposes, which are available only to persons providing the treatment.

### **Review of Records**

The College monitors educational records to ensure that they do not contain information that is inaccurate, misleading, or otherwise inappropriate. Western Tech may destroy records that are no longer useful or pertinent to the students' circumstance.



*Western Tech is proud of the success of our graduates in their field of study. Listed below are a few words of achievements*

*"I am satisfied that I made the right choice, and that choice was Western Tech. Everyone in the school cares about all the students so much that you don't have a choice but to be successful in your future endeavors once you graduate. All you need is for one person to care about you, here, the whole Western Tech team cares."*

**Jose Coffie**, Intel, Manufacturing Technician  
Community College Ambassador

*"Western Tech offered me very good training in all the skills I needed to work in the medical field. It was a fast transition from graduation to working. Thanks goes to the help of Career Services."*

**Sara Angelica Terrazas**, Southwest Urgent Care Center, Medical Assistant

*"My Training/Education at Western Tech was the best thing that ever happened to me. Western Tech gave me the confidence that never in my mind, I thought I would have. With the help from the Instructors, I would not be as successful. I am glad to be part of the Western Tech FAMILY; I wouldn't change it for anything."*

**Ruben Bernal**, Plant Operations Director  
East El Paso Physicians Medical Center, LLC

*"Western Tech was a great experience and I learned a lot from my instructors. Internship also provided real world, hands-on training that I enjoyed. Western Tech opened up an opportunity where I am now employed."*

**Christopher Oliva**, Welder  
Rig Works, Inc.

*"The training I received at Western Tech fully prepared me to embrace a career in the Massage Therapy field and open my own successful business."*

**Gregory Keith Roseman**, LMT, AMTA  
Massage Therapy  
Southwest Wellness Clinic

*"Western Tech provided me with the right skills and techniques to satisfy my clients in my workplace."*

**Stephanie Ruiz**, Massage Therapist  
Grace Therapeutic Massage

*"I strongly believe Western Tech provided me all of the resources needed to obtain employment in my field of study. The experience and knowledge of each instructor brings positive and all-around training to the students. The sky is the limit. I am successfully employed in the automotive industry".*

**Danny Montes**, Technician  
Audi of El Paso

## GRADUATION REQUIREMENTS and services

In order to graduate from Western Tech, all students must obtain a minimum of 2.0 cumulative GPA, meet attendance and other college requirements, and pass all required courses, including undergoing a mock interview with an actual employer and submit an updated resume to Career Services.

Students seeking an Associate of Occupational Studies Degree, Associate of Applied Science Degree, or a Bachelor's Degree must earn at least fifty percent (50%) of the semester credit units of the degree program at Western Tech.

The college reserves the right to withhold official transcripts to a student until all financial obligations to the college have been fulfilled or satisfactory arrangements have been made. They must also attend and complete a financial aid exit interview.

The student will be required to demonstrate an entry-level degree of proficiency in each competency, outlined in each course throughout the programs. An inability to achieve the required level of competency will prevent the student from being able to graduate from Western Tech.

In addition, all graduating students must attend a graduation clearance and complete a final clearance sheet before graduating. Students who fail to attend the graduation clearance must reschedule the clearance with the Registrar(s) in order to be processed for graduation. Students will be allowed to pick up their degree/certificate of completion within approximately 4 weeks after their final completion date from the Registrar.

### Automotive Technology, Light Duty Diesel, Performance Tuning and Diesel Mechanics:

Students graduating from these programs are required to achieve at a minimum one (1) ASE certification in the following subjects: Automotive and Performance Tuner students must pass the ASE G1 exam; Light Duty Diesel students must pass the ASE A9 exam; and Diesel Mechanics students must pass the ASE T8 exam prior to their scheduled graduation dates.

### Refrigeration & HVAC Technology:

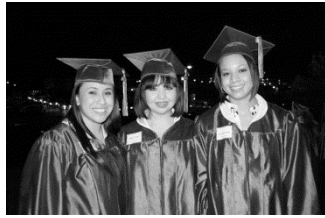
Students graduating from this program are required to achieve the EPA 608 certification (minimum TYPE II certification) prior to their scheduled graduation dates.

### Advanced Welding Technology:

The Advanced Welding program requires that all "Structural" certification tests be passed as a prerequisite for the "Pipe" welding portion of the program. WTC Welding certifications will only be awarded upon completion of the program in its entirety.

### Medical/Clinical Assistant with X-Ray Technology and Medical Billing & Coding:

Students graduating from these programs are required to achieve one (1) relative industry certification of their choice prior to the completion of the scheduled graduation date.



### Information Systems and Security:

Students graduating from these programs are required to achieve two (2) relative industry certifications of their choice prior to the completion of the scheduled graduation date.

### Electronics Engineering Technology:

Students graduating from these programs are required to achieve two (2) relative industry certifications of their choice prior to the completion of the scheduled graduation date.

## GRADUATION CEREMONIES

Western Tech graduation ceremonies represent the culmination of a student's academic achievement. It is a time of celebration and reflection for students, families, friends, faculty and staff.

In addition to celebrating each student's accomplishments, graduates with exemplary academics and/or attendance are recognized during the ceremony. The following categories will be recognized: **Summa Cum Laude** (White sash): 4.0 GPA and 98%-100% Attendance, **Magna Cum Laude** (Gold Cord): 3.8- 4.0 GPA and 97% or higher Attendance, **GPA Recognition** (Blue Cord): 3.8-4.0 GPA, **Attendance Recognition** (Red Cord): 97% or higher attendance.

Western Tech commencement ceremonies are held twice a year, once in the summer and again during the winter and are conducted in the Don Haskins center located at the University of Texas at El Paso. All family members and friends are invited and welcome to attend to help celebrate the achievements of the graduates.

In order to ensure that all graduates are prepared and have all necessary requirements completed prior to graduation, each student will receive a graduation packet one (1) month prior to the commencement ceremonies.

In this packet, students will receive:

- A congratulatory letter detailing the events for the day of graduation (time, date)
- Graduation photography information
- Do's and Don'ts of graduation
- Directions to and map of the venue

The commencement ceremony is a special celebration and at this time your degree/certification will be officially conferred upon you.

## CERTIFICATES / DIPLOMAS Certificate

A certificate indicates satisfactory completion of a Diploma Program covering the fundamentals of a particular subject(s).

### **Associate of Occupational Studies Degree/ Associate of Applied Science Degree**

A diploma indicates the satisfactory completion of a comprehensive study of a particular subject(s). This degree is of limited transferability since it is not designed as being automatically transferable to a college or university. Its outcome is, as it says, "Occupational" or "Applied," and is designed to prepare a person for entry-level employment in a particular occupation. It may also be an appropriate

qualification for future advancement or promotion within a company.

### **Bachelor Degree**

The bachelor degree is an undergraduate academic degree awarded upon completion of the program of study and is designed to be completed in 30 months (2.5 years) for students attending full-time. This degree is designed to develop students' skills in management and may also lead to future advancement or promotion within a company.

## **CONTINUING EDUCATION**

### **Articulation Agreements**

For graduates wishing to continue their education elsewhere, Western Tech has structured articulation agreements with the University of Phoenix, Western Governors and Grand Canyon University. For further information, graduates should contact these institutions for particulars regarding course exemptions and credits.

### **For Students/Graduates Who Want to Transfer Their Western Tech Credits to Another Institution**

Other than specific colleges/universities that have formal articulation agreements with Western Tech, it is unlikely that credits earned at Western Tech will transfer to another postsecondary institution. It is the student's responsibility to confirm whether or not credits from Western Tech are accepted by another college. Western Tech does not imply, promise, or guarantee transferability of its credits to any other institution. In the United States Higher Education system, transferability of credit is always determined by the receiving institution, taking into account such factors as course content, grades, accreditation and licensing.

### **Refresher Training**

In order to stay current with ever-changing technological developments in their industry, graduates may return to Western Tech and retake any courses of the program from which they graduated according to the following conditions:

1. Refresher training will be allowed on a "space available" basis only and requires the approval of both the program director and Campus President.
2. Graduates may repeat up to three courses in the same program from which they graduated at no tuition charge. Any additional courses may be taken at a charge of 25% of the current tuition rate.
3. To take a new course in the same program from which they graduated, the graduate will pay 50% of the current tuition rate.
4. Graduates must pay the current cost of any and all books, tools, supplies, lab fees, certification test fees, student insurance fee, or any other fees or charges associated with the course or program they are refreshing.
5. Graduates must be in satisfactory standing with Western Tech. For the purposes of this policy, satisfactory standing is defined as a graduate:
  - a. Is current in all their financial obligations to Western Tech and any student loans.
  - b. Has NOT been discharged from a job due to misconduct such as stealing, sexual harassment, substance abuse, etc.
  - c. Has NOT failed nor refused to take an employment related physical due to illegal drug use.
  - d. Did not have any instances of misconduct, suspension, or other significant issues while they were a student at Western Tech.
6. Graduates will be given a transcript indicating a grade for the refresher training completed.
7. Graduates taking refresher training must comply with all Western Tech policies and regulations.

**Note: WTC is not required to provide refresher training. As a result, WTC exercises the right in using discretionary measures to determine who is eligible for updates. Specifically, WTC will not allow graduates to return for update training if there is a conflict of interest, i.e. graduate is working for a competitor school.**

# CAREER SERVICES

## GRADUATE EMPLOYMENT ASSISTANCE

Western Tech places great importance in assisting graduates starting their careers! The Career Services team at WTC, together with faculty, Program Directors, and Internship Coordinators, work closely to place students (soon to be graduates) and graduates alike, into career related jobs. Employment assistance services are provided to students from the time they enter school up until the time they graduate, and thereafter (provided they are in good standing\*). Students receive the training and skills needed to conduct their own employment opportunity research, résumé writing, interview skills, and networking skills. The success of our graduates is the success of the school!

Students will be required to undergo a mock interview with an employer in their field of study before going to internship or clinicals (depending on the program). The mock interview may be recorded and then critiqued with the student. In addition, The Career Services staff offers workshops for students to provide valuable training in successful interviewing techniques, tips on completing successful online applications, writing effective cover letters and thank you letters.

Western Tech works diligently to assist new and previous graduates to obtain employment in their field of study. We wish to make it clear however, that due to the vastly different personalities, characteristics, and backgrounds of each individual graduate, the college does not guarantee employment. The college does accept the responsibility of making every reasonable effort to assist each graduate in finding employment in his/her field. Graduates may need to consider relocating to areas where the greatest career opportunities exist. Graduate employment results are greatly influenced by student's attendance, overall attitude, academic performance, driving record and background.

*(\*good standing requires that the graduate has not been fired due to misconduct, failing or refusing a drug screen, or defaulting on his student loans)*

## EMPLOYER EXPECTATIONS

Western Tech strives to ensure that every graduate is given every opportunity to interview and secure a job in his/her field of study. Education on what employers expect is crucial to becoming gainfully employed in your field of study. Requirements vary from business to business, and many will require one or more of the items listed below:

1. **Clean Driving Record:** Some organizations have multiple locations and may require the employee to use his/her own vehicle to travel between the different locations or may require the employee to travel to a customer site (i.e. service tech). For all transportation programs for example, there are companies that require their employees to drive company vehicles, pick-up and drop off customers. For these scenarios, a clean driving record becomes a hiring requirement in order to be insurable by the employer's insurance carrier. Furthermore, the hiring requirement is a means to maintain the position.
2. **A Current Driver's License:** Failure to produce a current driver's license at the time of interview may prevent the graduate from getting hired. Without a license, how will the graduate get to work? An employer has the right to ask.
3. **A Criminal Background Check:** Most Background checks not only reveal misdemeanors and/or felonies in one's background, but also any pending arrests. The criminal check can go as far back as the employer wants to go. Failure to report any criminal conviction may result in being disqualified for hire or terminated from employment if the information surfaces after hire.
4. **Drug Testing:** More than 90% of employers in the US drug test new hires before making a bona-fide offer of employment, contingent upon the

results of the background check and drug testing. The most common is urinalysis testing, but follicle testing is much more accurate and is becoming much more affordable to employers. Drug and/or alcohol use, impairs memory, alertness and achievement. Their use erodes the capacity to perform, think and act responsibly.

5. **Credit Checks:** Businesses of all types and sizes are turning to credit checks in an effort to help determine an applicant's integrity and ability to handle money. In the cyber world we live in, employers are required to be more diligent in protecting their customers personal information from theft. All employees that handle government contracts or the government entities themselves, (i.e. FBI, CIA, Border Patrol, etc.), will require government security clearances. In order to qualify for a government security clearance, the applicant will need to have a good credit rating score. Applicants that have claimed bankruptcy or have had to undergo credit counseling will find that this may prevent them from being considered for employment. Applicants that possess a poor credit score rating are considered "high-risk" and may not be trusted to handle and maintain security information.

## GRADUATE EMPLOYMENT SEVERANCE

Employment assistance is an ongoing service available to all graduates in satisfactory standing. To protect the college's reputation as well as the employment opportunities of future graduates, a graduate is considered to be in unsatisfactory standing and may forfeit their graduate employment assistance privilege under the following conditions:

1. Have failed or refused to take an employee physical relative to drug or substance testing.
2. Have defaulted on a student loan.

3. Have been discharged from a job since graduating from the college, for misconduct such as stealing, substance abuse, sexual harassment, etc.

4. Are in violation of any of the items listed under Employer Expectations.

## WHERE ARE WTC GRADUATES WORKING

WESTERN TECHNICAL COLLEGE BOASTS OVER HUNDREDS OF EMPLOYERS THAT HAVE SUCCESSFULLY RECRUITED GRADUATES FROM ALL THE PROGRAMS OFFERED AND MORE ARE RECRUITING STUDENTS YEAR AFTER YEAR. WTC IS PROUD TO SAY THAT RECORDS HAVE BEEN SET IN EMPLOYER PARTICIPATION IN OUR ANNUAL CAREER FAIRS (DAY AND EVENING) AT BOTH CAMPUSES. HERE ARE SOME OF THE EMPLOYERS THAT HAVE HELPED OUR GRADUATES OVER THE LAST FOUR YEARS:

### INFORMATION SYSTEMS AND SECURITY

- ADVANCED SECURITY CONTRACTORS, INC.
- ALASKA COMMUNICATIONS
- ALTEP INC.
- ANTHONY ISD
- BMW MAZDA OF EL PASO
- BEST BUY GEEK SQUAD
- CENTRO DE SALUD LA FE
- CACI
- CASH REGISTER SYSTEMS OF EL PASO
- CITY OF EL PASO
- CLINT INDEPENDENT SCHOOL DISTRICT
- COMPUTER NET SOLUTIONS
- CONCENTRIX
- CSC (COMPUTER SCIENCE CORPS)
- CURREY@ADKINS
- DAHILL EL PASO
- DATAMARK
- DELL
- DESERT COMMUNICATIONS
- DM DICKASON
- DISH NETWORK
- DIVERSE MOBILE TECHNOLOGIES
- DORNEY SECURITY
- DYONYX
- EL PASO AREA TEACHERS FEDERAL CREDIT UNION
- EL PASO COUNTY
- EL PASO ELECTRIC COMPANY
- EL PASO INDEPENDENT SCHOOL DISTRICT
- EL PASO LIMOUSINE EXPRESS
- EL PASO TIMES CORPORATION
- EL PASO WATER UTILITIES
- ENTRAVISION COMMUNICATIONS
- EPIAA
- EPCOM
- ERACOM PC
- ESEL, INC.
- FIELD NATION
- DISH NETWORK
- DOC INVESTMENTS LLC
- FRED LOYA INSURANCE
- GAMWELL TECH
- GARCOM
- GENERAL DYNAMICS
- GENESYS COMPUTERS
- GLACIER TECHNOLOGY
- HALLIBURTON
- HELEN OF TROY
- HONEYWELL
- HUNTLEIGH TECHNOLOGY GROUP

- INTEGRATED HUMAN CAPITAL
- INTEL CORPORATION
- KERI KUSTOM METAL ART
- LAUTERBACH BORSHOW AND COMPANY
- LEAR CORPORATION
- LOCKHEED MARTIN
- LONESTAR TITLE
- LNF DISTRIBUTION
- MAKIOS
- MANPOWER
- MASSER TECHNOLOGIES
- MIRATEK
- MOUYAN SCIENCE AND TECHNOLOGY
- NEW MEXICO STATE UNIVERSITY
- PC TECHNOLOGIES
- PIZZA PROPERTIES, LTD.
- PRETTY IN PINK DAYCARE
- RAYTHEON TECHNICAL SERVICES COMPANY
- SANDIA LABS
- SIERRA PROVIDENCE HEALTH NETWORK
- SOCORRO INDEPENDENT SCHOOL DISTRICT
- SOUTHWEST WIRELESS
- SPECPRO
- SPECTRUM TECHNOLOGY GROUP
- SPEAKING ROCK ENTERTAINMENT
- SPRINT
- STORMWIND STUDIOS
- SYNETRA
- TANDAM HR
- TEK SYSTEMS
- TELERX
- TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
- TIME WARNER COMMUNICATIONS
- UNITED STATES ARMY
- VARAY SYSTEMS
- VIVINT
- YSLETA INDEPENDENT SCHOOL DISTRICT

### ELECTRONICS ENGINEERING TECHNOLOGY

- AECOM
- AEROTEK
- ALLEGIANCE STAFFING
- B&N MACHINERY COMPANY
- BEST BUY
- BRADY INDUSTRIES
- DALTILE
- DAVE & BUSTER
- DM DICKASON

- DESERT COMMUNICATIONS
- DORNEY SECURITY
- EL PASO WATER UTILITIES
- FEDERAL AVIATION ADMINISTRATION
- FEDERAL BUREAU OF INVESTIGATION
- GARCOM
- GEORGIA PACIFIC
- GENERAL DYNAMICS
- GREENBAY PACKAGING
- DISH NETWORK
- HALLIBURTON
- HELEN OF TROY
- HITACHI
- HOMELAND SECURITY
- HONEYWELL
- HUNTLEIGH TELECOM
- INTEGRATED HUMAN CAPITAL
- INTEL CORPORATION
- LOCKHEED MARTIN
- MAILING & SHIPPING
- MANPOWER
- NASA
- PROTECH GLOBAL SOLUTIONS
- RAYTHEON TECHNICAL SERVICES COMPANY
- RELIANT LABELS AND PRINTING
- RTC COMMUNICATIONS
- SIEMENS
- SOUTHWESTERN WIRELESS
- SOUTHWIRE
- SUNCITY CABLING
- SUNCITY COMMUNICATION
- SCHNEIDER
- SCHLUMBERGER
- SUNLAND PARK CASINO
- SYNETRA
- TEXAS GAS SERVICE
- TEXZAK ELECTRIC
- TIME WARNER COMMUNICATIONS
- TRAX
- TRI STATE ELECTRIC
- TRUTEMPS
- V-GROUP
- VERIZON WIRELESS
- VINTON STEEL
- WEBATRON

**AUTOMOTIVE TECHNOLOGY /  
AUTOMOTIVE TECHNOLOGY WITH A  
SUBSPECIALTY IN LIGHT DUTY  
DIESEL**

- ACURA- INFINITI
- ALAMO AUTO GLASS
- AUDI OF EL PASO
- AUTOZONE
- BMW OF EL PASO
- BORMAN HONDA/HYUNDAI
- BRAKE MASTERS
- BRAVO CADILLAC/OLDSMOBILE
- CAMPING WORLD
- CARMAX
- CASA FORD
- CASA NISSAN
- CHARLIE CLARK NISSAN
- CITY OF EL PASO
- CLINT TRANSPORTATION

- CORONADO CAR CARE
- CRAWFORD BUICK GMC
- DICK POE CHRYSLER
- DICK POE DODGE
- DISCOUNT TIRE
- EL PASO HONDA
- EL PASO KIA & MITSUBISHI
- FIRESTONE
- FMH MATERIAL HANDLING
- HOY FAMILY AUTO
- FOX TOYOTA LEXUS OF EL PASO
- HYUNDAI OF EL PASO
- JACK KEY CHRYSLER, JEEP, DODGE
- JAY'S AUTOMOTIVE
- LUBE N GO
- MARTIN TIRE
- MERCEDES BENZ OF EL PASO
- MISSION CHEVROLET
- NAPA AUTOMOTIVE
- OREILLY AUTO PARTS
- PEP BOYS
- PIT STOP LUBE CENTER
- POE TOYOTA
- RAM, INC
- RAYTHEON AEROSPACE
- RESLER AUTOMOTIVE
- RUDOLPH CHEVROLET
- RUDOLPH VOLKSWAGON
- RUDOLPH MAZDA EAST & WEST
- RUDOLPH HONDA
- SEARS AUTO CENTER
- SHAMALEY FORD
- SHAMALEY PONTIAC, BUICK, GMC
- SISBARRO DEALERSHIPS
- SUN METRO
- TIRE CLUB
- TIRE XPRESS
- U.S. ARMY
- U.S. BORDER PATROL
- U-HAUL
- VIVA CHEVROLET
- VIVA DODGE
- VIVA FORD
- VIVA KIA/ MITSUBISHI
- VIVA NISSAN
- WALMART QUICK LUBE
- WINGFOOT

**AUTOMOTIVE TECHNOLOGY WITH A  
SUBSPECIALTY IN PERFORMANCE  
TUNING**

- 4-WHEEL CENTER
- 4 WHEEL PARTS
- AUTOZONE
- CARS PLUS
- DEL MOTORSPORTS
- DICK POE CHRYSLER
- DICK POE DODGE
- DISCOUNT TIRE
- DON SCHUMACHER RACING
- EL PASO HONDA
- GARCIA SUBARU
- JOHN FORCE RACING
- LITHIA DODGE
- NAPA AUTO PARTS
- NISSAN OF LAS CRUCES



- OASIS TIRES AND WHEELS
- PATTERSON PERFORMANCE
- PEP BOYS
- RESLER AUTOMOTIVE
- THE AUTO CLINIC
- VINTAGE STEEL AND CUSTOM
- VIVA CHEVROLET
- VIVA KIA/MITSUBISHI
- VIVA NISSAN
- VIVA DODGE
- WALMART TIRE & LUBE EXPRESS

## **DIESEL MECHANICS**

- 4 RIVERS
- AM TRUCK REPAIR
- AD TOWING
- BCD DIESEL
- BORDER INTERNATIONAL TRUCKS
- CASA FORD
- CEMEX
- CENTRAL TRANSPORT
- CITY OF EL PASO
- COCA-COLA
- CUDD ENERGY
- CUMMINS ROCKY MOUNTAIN
- DOGGET FREIGHTLINER
- DONA ANA COUNTY OF NEW MEXICO
- ELITE MEDICAL TRANSPORT
- EL PASO DISPOSAL
- EL PASO COUNTY WATER IMPROVEMENT DISTRICT
- El Paso ISD
- FAR WEST SERVICES, INC.
- FLYING J TRUCK STOP
- HALLIBURTON
- JOBE CONCRETE
- LOVES TRUCK TIRE SHOP
- MALIN
- MARK'S MOBILE SERVICES
- MESILLA VALLEY TRANSPORTATION
- MHC KENWORTH
- PENSKE
- PETRO LUBE CENTER
- PETRO TRUCK CENTER
- PILOT TRUCK CARE CENTER
- PRANA MACHINERY
- RAM, INC.
- RAYTHEON
- RUSH TRUCK CENTERS
- RWC INTERNATIONAL
- RYDER
- SCHLUMBERGER
- SIERRA MACHINERY
- SKY TRANSPORTATION
- SOCORRO ISD
- SOUTH PLAINS IMPLEMENTS
- SOUTHWEST FREIGHTLINER
- STEWART & STEVENSON
- SUN STATE EQUIPMENT
- SUN METRO
- SWIFT TRANSPORTATION
- TECH FLEET SERVICES
- TECHNICA
- TEXAS DEPARTMENT OF TRANSPORTATION
- TRUCK ENTERPRISE INC.

- UNION PACIFIC RAILROAD
- UNITED RENTALS
- US RENTALS
- WAGNER CAT
- WARREN CAT
- WESTERN DAIRY TRANSPORT
- YSLETA ISD

## **ADVANCED WELDING**

- AC CUSTUM WELDING
- ADECCO EMPLOYMENT
- AREA IRON & STEEL
- ARMOR METAL
- B DANIELS CONSTRUCTION
- BORDER MECHANICAL
- BOWEN INDUSTRIAL CONTRACTORS
- CASEEM STAFFING
- CITY OF ALPINE GAS DEPARTMENT
- DICKSON PROCESS SYSTEMS
- EL PASO INTERNATIONAL AIRPORT
- EL PASO COUNTY WATER IMPROVEMENT DISTRICT #1
- EL PASO DISPOSAL
- EL PASO TRAILERS
- FOAM APPLICATIONS
- GARCIA'S WELDING
- KALISCH STEEL
- KIEWIT
- LABOR FORCE
- LONE STAR WELDING
- MODERN IRON WORKS
- RAYTHEON
- RED BEARD FABRICATIONS
- REYCON CONSTRUCTION SOLUTIONS
- RIVERBEND CRANE & RIGGING
- ROBERT'S IRONWORKS
- RULY'S MOBILE WELDING
- STEEL SPECIALTIES
- STRUCTURAL STEEL SERVICES
- TEXAS GAS
- TJ FABRICATIONS
- U.S. NAVY
- WESTERN REFINING
- WYLER INDUSTRIAL WORKS
- Z TEX CONSTRUCTION

## **REFRIGERATION & HVAC TECHNOLOGY**

- 7-11 STORES
- AC REFRIGERATION
- AIR FLOW HEATING & COOLING
- AIR WORKS
- AM REFRIGERATION
- ANTHONY ISD
- BALFOUR BEATTY COMMUNITIES, FORT BLISS
- B&G AIR CONDITIONING
- BLUE ORIGIN
- BOHANNON DEVELOPMENT CORP
- BORDER MECHANICAL
- BOWEN INDUSTRIAL CONTRACTORS
- BUNGALOWS AT NORTH HILLS
- CALDARELLA'S RESTAURANT SUPPLY
- CITY OF ODESSA

- COCA-COLA
- COEFFICIENT MECHANICAL SYSTEMS
- COMFORT EXPERTS
- DEL SOL HOSPITAL
- DIAZ SERVICES
- DOMINGUEZ SHEET METAL
- DOSHER REFRIGERATION
- DYNAMIC HEATING & COOLING
- EL PASO COUNTY SHERIFF'S DEPT.
- EL PASO HOUSING AUTHORITY
- EL PASO ISD
- EL PASO SHEET METAL
- EPI CENTER
- EXPERT REFRIGERATION
- FABENS ISD
- FOUR SEASONS HEATING & COOLING
- GADSDEN INDEPENDENT SCHOOL DISTRICT
- GRAY REFRIGERATION
- HAMPTON INN & SUITES
- HILTON GADEN INN
- HIGH TECH REPAIRS
- HI-TECH SOUTHWEST
- KING'S AIRE
- MARRIOTT HOTEL
- MECHANICAL TECHNOLOGIES
- NATIVE ENERGY
- ONE HOUR SERVICE
- PATRIOT AIR CONDITIONING
- PC AUTOMATED
- PINION TRAIL APARTMENTS
- PIZZA HUT
- PRIDE INDUSTRIES
- PROVIDENCE HOSPITAL
- RADISSON SUITE HOTEL
- RAYTHEON
- SAENZ REFRIGERATION
- SAN ELIZARIO INDEPENDENT SCHOOL DISTRICT
- SMART TECH
- SPEAKING ROCK
- SOCORRO INDEPENDENT SCHOOL DISTRICT
- SOUTHWEST CHIMNEY
- SUN CITY A/C
- TEXAS GAS
- TEXAS TECH
- THE AIR CONDITIONING COMPANY
- THE HOSPITALS OF PROVIDENCE
- THE JOB CONNECTION
- THE POINTE APARTMENTS
- THERMO KING
- TIMES REFRIGERATION
- TORNILLO INDEPENDENT SCHOOL DISTRICT
- TRANE
- UNION SHEET METAL
- WEIDNER APARTMENTS
- WISCO SUPPLY
- YSLETA INDEPENDENT SCHOOL DISTRICT

### **MEDICAL BILLING & CODING**

- ACCESS ADMINISTRATORS
- ACTION CARE PEDIATRIC THERAPY
- ACCOUNT TEMPS
- ATLANTIS MEDICAL SERVICES
- ALLEGIANCE STAFFING

- ALLIANCE BEHAVIORAL
- ANESTHESIA CONSULTANTS
- BIENVIVIR HEALTH SERVICES CENTER
- CARDIOLOGY CARE CONSULTANTS
- CENTER FOR INTEGRATIVE CANCER MEDICINE
- CENTRO SAN VICENTE
- CENTRO DE SALUD LA FE
- DEL SOL MEDICAL CENTER
- DM DICKASON
- DR. ABEDIN
- DR. PITRE
- EL PASO INTERGRATED PHYSICIAN GROUP
- EL PASO 1ST CHOICE
- EL PASO CANCER TREATMENT CENTER
- EL PASO CARDIAC
- EL PASO EAR NOSE AND THROAT
- EL PASO OB-GYN
- EL PASO ORTHOPEDIC
- EL PASO PEDIATRICS
- EL PASO PHYSICAL THERAPY
- EL PASO PREMIER
- EL PASO PULMONARY
- EL PASO RADIOLOGY BILLING
- EL PASO SPECIALTY HOSPITAL
- EMERGENCE HEALTH NETWORK
- FRANKLIN MEDICAL CENTER
- GK DREAMS
- GONZALEZ CHIROPRACTIC CLINIC
- HGS
- KELLY SERVICES
- LAS NUBES WOMEN'S HEALTHCARE
- LAS PALMAS MEDICAL
- LIFE AMBULANCE SERVICE
- MEDICAL BILLING UNLIMITED (MBU)
- MEMORIAL MEDICAL CENTER
- MILLENIUM CHIROPRACTIC
- MT. WEST FAMILY HEALTH CENTER
- MONTE CRISTO HEALTHCARE
- NORTHEAST CORNERSTONE PEDIATRIC
- PAIN MANAGEMENT ASSOCIATION
- PASOS HOME HEALTHCARE
- PROVIDENCE MEMORIAL HOSPITAL
- QUEST HEALTHCARE
- RADIOLOGY & ASSOCIATES
- RIO GRANDE HEALTH CLINIC
- RIO GRANDE UROLOGY
- RM PERSONNEL
- SIERRA MEDICAL CENTER
- SOUTHWEST EYE INSTITUTE
- SOUTHWEST HOME HEALTH
- SUN CITY FAMILY PHYSICIANS
- SUNWEST ANESTHESIA
- TEXAS TECH UNIVERSITY
- UNIVERSITY MEDICAL CENTER
- WELLCARE INC.
- WILLIAM BEAUMONT ARMY MEDICAL CENTER

### **MEDICAL/CLINICAL ASSISTANT WITH X-RAY TECHNOLOGY**

- AL-NAJJAR, MOHAMMED MD
- ALTERNATIVES CENTRE
- ARMENDARIZ, RAFAEL MD
- AULURI, SPRINIVASA MD
- CANALES, ROBERTO MD

- CARDIOLOGY CARE
- CASTILLO, GREGORIO MD
- CENTER FOR HEALTH PSYCHOLOGY
- CENTRO DE SALUD LA FE
- CENTRO SAN VICENTE
- CLINICAL PATHOLOGY LABORATORIES
- COMPLETE INJURY CARE CONSULTANTS
- CONCENTRA
- COORDINATED CARE
- DAVITA CORPORATION
- DEL SOL MEDICAL CENTER
- DEL SOL SLEEP DISORDER CENTER
- DESERT MOUNTAIN OB/GYN
- DESERT WEST SURGERY
- DIGESTIVE HEALTH CLINIC OF EL PASO
- DM DICKASON
- DOCTORS OF SANTA TERESA
- DOKA, DAVID MD
- EAST SIDE MEDICAL CLINIC
- EAST SIDE TOTAL HEALTH CARE
- EL PASO CARDIOLOGY
- EL PASO EYE CENTER
- EL PASO FIRST CARE CLINIC
- EL PASO HAND REHABILITATION CENTER
- EL PASO OB/GYN
- EL PASO ONCOLOGY
- EL PASO ORTHOPEDIC GROUP
- EL PASO PEDIATRICS
- EL PASO PHYSICAL THERAPY
- EL PASO PULMONARY
- EL PASO REGAIONAL CANCER CENTER
- EL PASO SLEEP CENTER
- ELEJE, AUGUSTINE MD
- FIERRO, RODOLFO MD
- GEORGE, THOMAS MD
- GRIFOLS
- HILL TOP WOMEN'S REPRODUCTIVE CLINIC
- INJURY MEDICAL CLINIC
- INTERNAL MEDICINE
- INVOGUE TOTAL WOMANS HEALTHCARE
- JIMENEZ, MAURICIO MD
- KAIM, BORIS MD
- KELLY SERVICES
- LAB CORP
- LAS PALMAS MEDICAL CENTER
- LAZAR, GABRIEL MD
- LIFE CARE CENTER
- MARQUEZ-SMITH, TERESA MD
- MEMORIAL MEDICAL CENTER
- MONTWOOD MEDICAL CLINI
- MOUNTAIN STAR INJURY CLINIC
- NDUKA, CHINWE MD
- NEW HORIZONS PEDIATRICS
- NORTHEAST CORNER STONE PEDIATRICS
- NORTH PARK MEDICAL CENTER
- OPEN MRI
- OREGON IMAGING CENTER
- PHYSICIANS HEALTH CARE
- QUEST HEALTH CARE
- RIO GRANDE HEALTH
- RIO VISTA REHABILITATION
- RM PERSONNEL
- SALUD Y VIDA
- SONNO SLEEP DISORDER CENTER
- SOUTHWEST X-RAY
- SIERRA PROVIDENCE MEDICAL CENTER

- SUMMIT URGENT CARE
- THE DR'S INN
- UNITED BLOOD SERVICES
- UNIVERSITY MEDICAL CENTER
- UPPER VALLEY URGENT CARE
- VILLALOBOS, VICTOR MD
- WELLMED
- WILLIAM BEAUMONT MEDICAL CENTER

### **MASSAGE THERAPY**

- AKTIVE INTEGRATIVE CHIROPRACTIC AND PERFORMANCE
- ATLAS CHIROPRACTIC
- APERION MASSAGE
- AXIS CHIROPRACTIC
- BALANCE FOR LIFE
- BALI BODY WORKS
- BARRAGANS HAIR SALON
- BARKER CHIROPRACTIC
- BIEN ESTAR MASSAGE
- BODY CREATIONS
- DEL NORTE CHIROPRACTIC
- DR. CAMPBELL
- DR. UNTERSEE
- DR WEBB
- DR. WILSON
- DYNAMISM MANUAL THERAPY
- EASTSIDE REHAB
- EL PASO DOCTORS OF CHIROPRACTORS
- FAMILY CHIROPRACTIC CLINIC
- FOLIAGE
- INJURY MEDICAL CLINIC
- GRACE THERAPEUTIC MASSAGE
- LAS PALMAS LIFE CARE CLINIC
- LIFE CARE CHIROPRACTIC & REHABILITATION CENTER
- LIFE CHIROPRACTOR
- MASSAGE ENVY
- MY LIFE CHIROPRACTIC
- "N" DULGE
- NATURES TOUCH
- NORTHEAST CHIROPRACTIC HEALTH CENTER
- REJUVENATE WELLNESS CENTER PLLC
- THE BODY BAR
- TRUE CARE CHIROPRACTIC
- SOUTHWEST CHIROPRACTIC
- SOUTHWEST WELLNESS CLINIC
- SYME CHIROPRACTIC
- VISION CHIROPRACTIC
- VISTA HILLS CHIROPRACTIC CLINIC
- VITAL HEALTH AND WELLNESS
- VITALITY MEDSPA

### **PHYSICAL THERAPIST ASSISTANT**

- ACTION CARE PEDIATRIC THERAPY
- ATRIUM PHYSICAL THERAPY
- BORDER THERAPY
- CARE FOR KIDS
- EL PASO REHABILITATION
- ERNEST HEALTH
- 800 CARE/REHAB
- HOSPICE EL PASO
- LAS CRUCES ORTHOPEDIC
- MILLENUM PHYSICAL THERAPY
- MOUNTAIN VIEW

- PALOMA WELLNESS AND REHAB
- PASITOS HEALTH CLINIC
- PRS (PROGRESSIVE RESIDENTIAL SERVICES)
- PHYSICIANS HEALTHCARE ASSOCIATION HOSPITAL
- REACTION PHYSICAL THERAPY
- REHAB CARE
- REHAB HOSPITAL OF SOUTHERN NEW MEXICO
- SENIOR REHAB SOLUTIONS
- SPECTRUM REHAB SERVICES
- SPINE AND REHAB SPECIALIST
- UNIVERSITY MEDICAL CENTER
- CENTER FOR THERAPUTIC SERVICES
- LAS PALMAS/DEL SOL HOSPITALS
- SYMMETRY REHAB
- TIER 1 THERAPY
- TRESKO
- TRIUMPH LONG-TERM CARE HOSPITAL
- REGENT CARE CENTER
- URGENT CARE HOMEHEALTH

**BUSINESS ADMINISTRATION  
MANAGEMENT**

- ACADEMY SPORTS AND OUTDOOR
- ALORICA
- BETTER BUSINESS BUREAU
- CARMAX

- CENTRO DE SALUD LA FE
- CROWN HERITAGE
- DISH NETWORK
- DM DICKASON
- FEDEX EXPRESS
- FEDERAL MOGUL
- GRAND CANYON UNIVERSITY
- H&H TAX SERVICE
- HOBBY LOBBY
- HOME INSURANCE AGENCY
- INFINITO INC.
- INTEGRATED HUMAN CAPITAL
- MAZZO AUTO
- MESILLA VALLEY TRANSPORTION
- MONTANA BARBER INSTITUTE
- PAPA JOHN'S
- OLIVAS MUSIC
- ONCE UPON A CHILD
- RJ REMODELING
- SPEAKING ROCK
- SUPREME GLASS
- TAXES 4 TIPS
- THE DIESEL PIT
- TORNILLO ISD
- TRIMCO
- TORNILLO ISD
- UNIVERSITY MEDICAL CENTER

# CANCELLATION & REFUNDS POLICY

## CANCELLATION POLICY

A full refund will be made to any student who cancels the enrollment contract within 72 hours (until midnight of the third day excluding Saturdays, Sundays and legal holidays) after the enrollment contract is signed. A full refund will also be made to any student who cancels enrollment within the student's first three scheduled class days, except that the school may retain not more than \$100 in any administrative fees charged and items of extra expense that are necessary for the portion of the program attended and stated separately on the enrollment agreement.

## COLLEGE CANCELLATION POLICY

Students who decide to leave their program within the first 14 school days of starting their program will be entitled to a full tuition refund, less administrative fees not to exceed \$100, and will be eligible for a full refund of books, tools, and supplies (including uniforms) if returned to Western Tech in good condition. Any books and supplies that are distributed and are not returned back to WTC will be billed to the student. Any balances that remain for non-returned items will be billed to the student, and any balance owed needs to be paid within 3 months to avoid the account from being sent to collections. Written notice of cancellation must be addressed to the registrar of Western Tech at the address on the enrollment agreement by certified or registered mail or hand delivered.

## REFUND POLICY

1. Refund computations will be based on scheduled clock hours of class attendance through the last date of attendance. Leaves of absence, suspensions, and school holidays will not be counted as part of the scheduled class attendance.
2. The effective date of termination for refund purposes will be the earliest of the following:
  - a) The last day of attendance, if the student is terminated by the school;
  - b) The date of receipt of written notice from the student; or
  - c) Ten school days following the last date of attendance.
3. If tuition and fees are collected in advance of entrance, and if after expiration of the 72-hour cancellation privilege the student does not enter school, not more than \$100 in nonrefundable administrative fees shall be retained by the school for the entire residence program or synchronous distance education course.
4. In the event that a student account has a credit balance, it is the policy of the College to refund the amount according to the completed Student Account Closeout form on file with the Financial Aid office. Refunds are only issued in the event of a credit balance.
5. If a student enters a residence or synchronous distance education program and withdraws or is otherwise terminated, the school or college may retain not more than \$100 in nonrefundable administrative fees for the entire program. The minimum refund of the remaining tuition and fees will be the pro rata portion of tuition, fees, and other charges that the number of hours remaining in the portion of the course or program for which the student has been charged after the effective date of termination bears to the total number of hours in the portion of the course or program for which the student has been charged, except that a student may not collect a refund if the student has completed 75 percent or more of the total number of hours in the portion of the program for which the student has been charged on the effective date of termination.
6. Refunds for books, tools, or other supplies should be handled separately from refund of tuition and other academic fees. The student will not be required to purchase instructional supplies, books and tools until such time as these materials are required. Once these materials are purchased, no refund will be made.
7. A student who withdraws for a reason unrelated to the student's academic status after the 75 percent completion mark and requests a grade at the time of withdrawal shall be given a grade of "incomplete" and permitted to re-enroll in the course or program during the 12-month period following the date the student withdrew without payment of additional tuition for that portion of the course or program.
8. A full refund of all tuition and fees is due and refundable in each of the following cases:
  - a) An enrollee is not accepted by the school;
  - b) If the course of instruction is discontinued by the school and this prevents the student from completing the course; or
  - c) If the student's enrollment was procured as a result of any misrepresentation in advertising, promotional materials of the school, or representations by the owner or representatives of the school.

*A full or partial refund may also be due in other circumstances of program deficiencies or violations of requirements for career schools and colleges.*

9. If during the program of training, the school determines that a student is not adapted for this field, the school reserves the right to terminate the student's training. Unused prepaid tuition will be refunded in accordance with the refund policy.

#### **REFUND POLICY FOR STUDENTS CALLED TO ACTIVE MILITARY SERVICE.**

10. A student of the school or college who withdraws from the school or college as a result of the student being called to active duty in a military service of the United States or the Texas National Guard may elect one of the following options for each program in which the student is enrolled:
  - a) if tuition and fees are collected in advance of the withdrawal, a pro rata refund of any tuition, fees, or other charges paid by the student for the program and a cancellation of any unpaid tuition, fees, or other charges owed by the student for the portion of the program the student does not complete following withdrawal;
  - b) a grade of incomplete with the designation "withdrawn-military" for the courses in the program, other than courses for which the student has previously received a grade on the student's transcript, and the right to re-enroll in the program, or a substantially equivalent program if that program is no longer available, not later than the first anniversary of the date the student is discharged from active military duty without payment of additional tuition, fees, or other charges for the program other than any previously unpaid balance of the original tuition, fees, and charges for books for the program; or
  - c) the assignment of an appropriate final grade or credit for the courses in the program, but only if the instructor or instructors of the program determine that the student has:
    1. Satisfactorily completed at least 90 percent of the required coursework for the program; and
    2. Demonstrated sufficient mastery of the program material to receive credit for completing the program.
11. The payment of refunds will be totally completed such that the refund instrument has been negotiated or credited into the proper account(s), within 60 days after the effective date of termination.

*\*In all cases, refunds will meet or exceed the requirements of TEC, §§132.061 and 0611.*