



TEXAS SOUTHWEST COLLEGE



**Student Handbook
2018-2020**

Commercial and Residential Electrician Student Handbook

Name _____

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General Information

A Message to the Students

Welcome to the Texas Southmost College **Commercial and Residential Electrician Program**. This handbook has been compiled to help familiarize you with the policies utilized by this program as well as available student services.

The Commercial and Residential Electrician Program Student Handbook pertains to students that have been admitted to that program and is a supplement to the Texas Southmost College Student Handbook. The Vice-President of Instruction and Student Services is the chief administrator for academic/non-academic policies and procedures.

It is through the spirit of cooperation and communication that students and faculty members share a common goal of learning. In this profession, competence is developed through diligence, determination, and patience in the practicum environment as well as the classroom.

The Degree Plan for Commercial and Residential Electrician has been designed to provide the student with a well-rounded curriculum.

Please remember that you, the student, are the most important asset of this program. Your suggestions are welcomed, appreciated, and may be submitted at any time to the Advisory Committee of this program or directly to the Program Faculty.

Non-Discrimination Statement

Texas Southmost College Commercial and Residential Electrician Program is non-discriminatory in regard to race, creed, color, sex, age, handicap, and national origin.

No otherwise qualified handicapped individual in the United States as defined shall, solely by reason of his handicap be excluded from participation in, be denied benefits of, or be subject to discrimination under any program or activity receiving federal assistance.

Mission of the Institution

The mission of Texas Southmost College (TSC) is to transform our communities through innovative learning opportunities.

Role and Scope

Texas Southmost College's mission is guided by our commitment to provide:

- University transfer, career, and technical programs leading to an associate degree or certificate along with courses specializing in college preparatory and developmental education, workforce

training, adult literacy, and continuing education to support the evolving needs of citizens, industry, and economic development initiatives within Cameron and Willacy Counties.

- High-quality instruction and learning opportunities in the classroom, online, and through other delivery methods; a supportive and innovative faculty and staff; appropriate technology, equipment, and learning resources; and advising and assessment services to promote transfer to a four-year baccalaureate institution, entry or advancement in the workforce, or lifelong learning.
- A learning-centered, service-oriented environment that celebrates diversity and inclusion; facilitates growth and development; fosters social responsibility, critical thinking, communication, and innovation; and empowers and engages students, faculty, and staff to achieve personal and professional goals.
- Institutional effectiveness that embraces individual accountability, data-driven decision-making, change, and an unending pursuit of excellence.

Institutional Accreditation

Texas Southmost College is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award certificate and associate degrees.

Program Information

Commercial and Residential Electrician Program Contact Information

Commercial and Residential Electrician Instructors

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Mission of the Program

The mission of the Commercial and Residential Electrician Program is to provide opportunities for individuals to develop competencies essential for lifelong learning and a career in workforce programs leading to an Associate of Applied Science (AAS) degree.

Program Outcomes (Goals)

- Goal1** - Demonstrate ability to understand requirements of the National Electrical Code in all wiring installations.
- Goal2** - Understand and apply knowledge in layout, assembly, installation, and troubleshooting of fixtures, devices, services, heating systems, pumps, motors, and motor controls used in residential, commercial, and some industrial locations.
- Goal3** - Understand and apply knowledge of electrical theory and techniques of the trade, including blueprint reading, wiring, pipe bending, motor control, switching, power circuits and lockout/tag out procedures.

Program Description

The Commercial and Residential Electrician Program is designed by the department working in close collaboration with business and industry to satisfy the need for a timely and effective workforce. The Program offer a Level I Certificate and an AAS degree consisting of coherent sequence of course intended to prepare students for employment. A degree in Commercial and Residential Electrician prepare students for entry-level positions in an electrician career. It also provides hands-on instruction in all aspects of maintenance, operations, troubleshooting and repair of circuits. Graduates from the program complete the National Center for Construction Education & Research (NCCER) at the core and level I-II certifications.

Qualifications for Applicants

Admission to TSC is sufficient to be admitted in the Commercial and Residential Electrician Program. For admission requirements at TSC, Please contact the Admission and Records at TSC for college admission requirements at (956)-295-3600. For information visit the Admission and Records Office website at <http://www.tsc.edu/index.php/admissions-and-records.html>

Student Work Policy

As in all Career and Technical Education Programs at Texas Southmost College, working full-time while enrolled in a program is difficult and not recommended since work schedules generally conflict with class and or/practicum rotations. Should a student be employed in any facility that is an affiliate of the program, they may do so only during times where it does not involve or conflict with program activities. Additionally, should a student be employed by a facility where practicum rotation is normally conducted, they may not use "employer time" to substitute for program practicum requirements.

Behavioral Conduct

TSC Commercial and Residential Electrician students representing Texas Southmost College are expected to conduct themselves in such a manner as to reflect favorably upon themselves and the program. Every effort is taken to provide for all students an academic environment that is conducive to academic endeavors, social growth, and individual self-discipline. The College expect students eligible to perform at the College level are familiar with the ordinary rules governing proper conduct and that they will observe these rules as a matter of training and habit (See TSC Student Handbook Discipline Code/Sanctions).

Classroom Conduct

Classroom activities (didactic and laboratory) are an essential part of Commercial and Residential Electrician Program courses. Although instructors strive to establish an informal classroom environment, Students must conduct themselves in a manner that continues to facilitate learning. Students are expected to:

1. Come to class prepared for the scheduled subject or activities
2. Behave in a manner that does not interrupt classroom or laboratory activities. Examples of disruptive behavior include frequent tardiness, leaving early, private conversations during class, and inappropriate or offensive behavior.
3. Ensure that cellular telephones, radios and pagers do not disrupt the classroom or laboratory activities. Students are expected to ensure that the activation of these devices does not disrupt classroom, laboratory, or clinical activities.

Attendance

Students are encouraged to attend 100% of the scheduled class sessions; otherwise, it is the student's responsibility to acquire any missed information and schedule make-ups, where applicable. The Commercial and Residential Electrician Program require students to attend classes punctually and regularly so that the learning objectives of the course may be accomplished. In each semester, the assessment of absences begins the first day of class.

Liability Insurance

All students in the Commercial and Residential Electrician program are required to have professional liability insurance. This insurance is provided on a group basis and the cost for the professional liability insurance is included in the fees paid in which a practicum course is required.

Grievance Procedure

The intention of the student grievance policy procedure at TSC is to assure the aggrieved student of due process in the disposition of the grievance or complaint. While the procedure will not guarantee the student that the result will be totally satisfactory, the college intends for the procedure to provide sufficient options for resolution of the matter. The procedure for filing a grievance can be found in the official TSC Undergraduate Catalog.

Student Records

As a student at Texas Southmost College, your education record information is protected by FERPA. The Family Educational Rights and Privacy Act (FERPA) of 1974 is a federal law that requires Texas Southmost College to treat your education records in a legally specified manner.

Technical Standards (Essential Functions)

A Commercial and Residential Electrician student must possess motor and visual skills that would enable him/her to meet program objectives and perform job duties required in the profession. Specifically, the students:

1. Must have the ability to climb ladders ranging from 4ft – 8ft.
2. Have the ability to lift and move at least 30 pounds.

Required Supplies and Materials

A Commercial and Residential Electrician student will need the following items:

1. Textbooks
2. Notebook (note taking)
3. Pens/ Pencils
4. Class uniform
5. Journeyman's set (electrical tools)
6. Safety Shoes (preferred steel toe)
7. Clear safety Glasses
8. Working gloves
9. 25ft measuring tape

Classrooms/Lab

Commercial and Residential Electrician Program Lecture and Lab courses are taught at the ITEC campus. The classroom is located in the ITEC in room C-405. Specific courses schedules are published in the TSC course schedule per semester.

Curriculum and Course Description

Certificate of Proficiency -Level One (CERT1.ELPT 2018-2019)

Residential Electrician Certificate of Proficiency - Level One

Texas Southmost College
Division of Science, Technology, Engineering & Mathematics/
Career & Technical Education

A degree in Electrician Technology will prepare students for entry level positions in an electrician career. It also provides hands-on instruction in all aspects of maintenance, operations, troubleshooting and repair of circuits.

FIRST SEMESTER	CREDIT HOURS
ELPT 1321 Introduction to Electrical Safety and Tools.....	3
ELTN 1391 Special Topics in Electrician	3
ELPT 1329 Residential Wiring.....	3
ELPT 1325 National Electrical Code I.....	3
SECOND SEMESTER	
ELPT 1345 Commercial Wiring.....	3
ELPT 1320 Fundamentals of Electricity II.....	3
ELPT 1315 Electrical Calculations I.....	3
ELTN 1343 Electrical Troubleshooting.....	3
TOTAL CREDIT HOURS FOR GRADUATION - 24	

A minimum grade of "C" must be obtained in each (ELPT, ELTN) course required in the certificate plan.

Associate of Applied Science (AAS.ELPT 2018-2019)

Commercial and Residential Electrician Associate of Applied Science

Texas Southmost College
Division of Science, Technology, Engineering & Mathematics/
Career & Technical Education

A degree in Commercial and Residential Electrician will prepare students for entry level positions in an electrician career. It also provides hands-on instruction in all aspects of maintenance, operations, troubleshooting and repair of circuits.

FIRST YEAR - FALL SEMESTER	CREDIT HOURS
ENGL 1301 ⁺ Composition I	3
ELPT 1321 ⁺ Introduction to Electrical Safety and Tools	3
ELTN 1391 ⁺ Special Topics in Electrician.....	3
ELPT 1329 ⁺ Residential Wiring	3
ELPT 1325 ⁺ National Electrical Code I	3
 FIRST YEAR - SPRING SEMESTER	
MATH 1332 ⁺ Contemporary Mathematics	3
ELPT 1345 ⁺ Commercial Wiring	3
ELPT 1320 ⁺ Fundamentals of Electricity II	3
ELPT 1315 ⁺ Electrical Calculations I.....	3
ELTN 1343 ⁺ Electrical Troubleshooting	3
 SECOND YEAR - FALL SEMESTER	
XXXX X3XX ² Social and Behavioral Sciences Elective.....	3
ELPT 1341 ⁺ Motor Control	3
ELTN 1391 ⁺ Special Topics in Electrician.....	3
ELPT 1357 ⁺ Industrial Wiring	3
ELPT 2319 ⁺ Programmatic Logic Controllers I	3
 SECOND YEAR - SPRING SEMESTER	
XXXX X3XX ¹ Language, Philosophy & Culture/Creative Arts Elective	3
SPCH 1315 Public Speaking or	
SPCH 1318 Interpersonal Communication.....	3
ELPT 2323 ⁺ Transformers.....	3
ELPT 2325 ⁺ National Electrical Code II	3
ELPT 2335 ⁺ Electrical Theory and Devices	3

TOTAL CREDIT HOURS FOR GRADUATION - 60

⁺ Grade of “C” or better is required for graduation.

¹Language, Philosophy & Culture/Creative Arts Electives: Any General Education Core course that meets these categories

²Social and Behavioral Sciences Elective: Any General Education Core course that meets this category.

A minimum grade of “C” must be obtained in each (ELTN, ELPT) course required in the degree plan.

Course Description

ELPT-1315 - Electrical Calculations I

Introduction to mathematical applications utilized to solve problems in the electrical field. Topics include fractions, decimals, percentages, simple equations, ratio and proportion, unit conversions, and applied geometry. Prerequisite: ELPT 1321 ELTN 1391 ELPT 1325, ELPT 1329 Lec 2, Lab 2, Cr 3

ELPT-1320 - Fundamentals of Electricity II

Introduces alternating current (AC). Includes AC voltage, frequency, mechanical and electrical degrees, waveforms, resistors, capacitors, and inductors. Prerequisite: ELPT 1321, ELTN 1391, ELPT 1325, ELPT 1329. Lec 2, Lab 4, Cr 3

ELPT-1321 - Introduction to Electrical Safety and Tools

Safety rules and regulations. Includes the selection, inspection, use, and maintenance of common tools for electricians. Lec 3, Lab 1, Cr 3

ELPT-1325 - National Electrical Code I

An introductory study of the National Electric Code (NEC) for those employed in fields requiring knowledge of the Code. Emphasis on wiring design, protection, methods, and materials; equipment for general use; and basic calculations. Lec 2, Lab 2, Cr 2

ELPT-1329 - Residential Wiring

Wiring methods for single family and multi-family dwellings. Includes load calculations, service entrance sizing, proper grounding techniques, and associated safety procedures. Lec 2, Lab 4, Cr 3

ELPT-1341 - Motor Control

This course covers the operating principles of solid-state and conventional controls along with their practical applications, including braking, jogging, plugging, safety interlocks, wiring, and schematic diagram interpretations. Prerequisite: ELPT 1325, ELPT 1329. Lec 2, Lab 4, Cr 3

ELPT-1345 - Commercial Wiring

Commercial wiring methods. Includes overcurrent protection, raceway panel board installation, proper grounding techniques, and associated safety procedures. Lec 2, Lab 4, Cr 3

ELPT-1357 - Industrial Wiring

This course covers the wiring methods used for industrial installations, including motor circuits, raceway and bus way installations, proper grounding techniques, and associated safety procedures. Prerequisite: ELPT 1325, ELPT 1329. Lec 2, Lab 4, Cr 3

ELPT-2319 - Programmable Logic Controllers I

This course covers the fundamental concepts of programmable logic controllers, principles of

operations, and numbering systems as applied to electrical controls. Prerequisites: ELPT 1315, ELPT 1320, ELTN 1343. Lec 2, Lab 3, Cr 3

ELPT-2323 - Transformers

Transformer types, construction, connections, protection, grounding, and associated safety procedures are covered. Prerequisites: ELPT 1320, ELPT 1315, ELPT 1341, ELTN 1391, ELPT 1357. Lec 2, Lab 2, Cr 3

ELPT-2325 - National Electrical Code II

In-depth coverage of the National Electrical Code (NEC) for those employed in fields requiring knowledge of the Code. Emphasis on wiring protection and methods, special conditions, and advanced calculations. Prerequisite: ELPT 1320, ELPT 1315, ELPT 1341, ELTN 1391, ELPT 1357. Lec 2, Lab 2, Cr 3

ELPT-2335 - Electrical Theory and Devices

Electrical and electronic measuring devices and their applications to the use of electrical power. Includes calculating and balancing single-phase and three-phase systems. Prerequisite: ELPT 1320, ELPT 1315, ELPT 1341, ELTN 1391, ELPT 1357. Lec 2, Lab 2, Cr 3

ELPT-2339 - Electrical Power Distribution

Design, operation, and technical details of modern power distribution systems including generating equipment, transmission lines, plant distribution, and protective devices. Includes calculations of fault current, system load analysis, rates, and power economics. Lec 2, Lab 2, Cr 3

ELTN-1343 - Electrical Troubleshooting

Maintenance, operation, troubleshooting, and repair of circuits of various residential, commercial, and industrial electrical systems. Prerequisite: ELPT 1321, ELTN 1391, ELPT 1329, ELPT 1325. Lec 2, Lab 2, Cr 3

ELTN-1391 - Special Topics: Electric Blueprint Reading

Topics address recently identified current events, skills, knowledges, and/or attitudes and behaviors pertinent to the technology or occupation and relevant to the professional development of the student. This course was designed to be repeated multiple times to improve student proficiency. Lec 2, Lab 4, Cr 3

Course Competencies

- Basic shop safety and maintenance
- Proper usage of hand and power tools
- Proper usage of heavy machinery
- Daily housekeeping
- Reading a tape measure
- Usage of fractions and other electrical calculations
- Identify different kind of electrical materials
- Blue print reading

- Display proper conduit bending skills
- Display proper wiring methods
- Be able to perform proper threading of rigid conduit
- Display proper installation of electrical outlets
- Display proper installation of electrical switches
- Display proper installation of electrical lighting fixtures
- Display proper usage of electrical meters and testers
- Display proper usage and knowledge of National Electrical Code book
- Display proper usage and safety of stepladders

Course Substitution

Course substitutions for supportive requirements may be carried out only if the course to be substituted is equal or superior in content to the course that is required by the Commercial and Residential Electrician curriculum.

Resources

Counseling Services

The TSC Counseling Office provides mental health and substance abuse services at no cost to currently enrolled students. Contact with TSC Counseling Center is confidential and is not part of your academic record. The TSC Counseling Center operates within professional ethical guidelines and both federal and state laws that protect the privacy of your mental health records and assure the quality of services. The TSC Counseling Office is open 8:00 a.m. to 5:00 p.m., Monday through Friday, except on designated holidays. It is located in the Camille Lightner Building. If you are in crisis after hours, please call the National Suicide Prevention Lifeline 1-800-273-TALK (8255), or 911, or Tropical Texas Center for MHMR at 1-877-289-7199 (open 24 hrs) or text 741-741

Advising

The program coordinator will be the advisor for each student upon admission to provide information about the academic program and to assist in making informed decisions. The program director may be consulted during pre-registration, for adding/dropping a course and withdrawing from the Commercial and Residential Electrician Program. All advising sessions will be documented.

Disability Services

Texas Southmost College would like to help students with disabilities achieve their highest potential in college. Students with disabilities may request assistance through the Student Services Center. Some of the services available include note-taking, taped textbook, registration assistance, diagnostic testing, special test considerations and sign language interpreting. An Adaptive Technology and Testing Service are available for student use. All services are elective and must be requested by the students. To request services, students must contact the Disability Services Office at TSC. It is advisable to make this contact well before or immediately after the semester begins. Proof of disability is required (individual documentation requirements vary depending on the disability). Students bear the responsibility of making their abilities and limitations known to the advisor. Together, the student and the advisor will decide on the appropriate accommodations and decides on a course of action for informing the instructor, if necessary. Students must request services each semester, as needed. You can start by calling the office at 956-295-3587 or email angela.dunn@tsc.edu to make an appointment.

Contact Information:

Angela Marie Dunn, MA, LPC-S

Lightner Center 100 C

Office: 956-295-3417

Fax: 956-544-9093

angela.dunn@tsc.edu

Student Financial Aid Services

TSC provides financial aid to assist students. The financial assistance for eligible students is available in the form of grants, loans, college work-study, veterans' benefits, and scholarships. The college catalog contains the financial resources available to all students. For more information, please visit <http://www.tsc.edu/index.php/financial-aid-office.html>

Library Facility

The library is a shared service between Texas Southmost College and The University of Texas at the Rio Grande Valley. For a full list of services provided by the shared service, please visit the <http://www.utrgv.edu/library/>

Our website provides 24/7 access to thousands of scholarly journals and e-books, all accessible to our students, faculty and staff from any location worldwide. Our physical libraries hold a wide array of print books, DVDs, archives, and more, as well as study rooms – available to be checked out for both group and individual study. Librarians are available to help you with your research in person, via phone, chat, text, or email.

Contact Information

Paul Sharpe

University Librarian

University Library

LIBR 2.101 A

Email: university.librarian@utrgv.edu

Phone: (956) 665-2005

Phone Alt: (956) 882-8221

Learning Labs

The College Preparatory Studies (CPS) Learning Labs provide peer tutoring services and review sessions in Math, Reading, Writing, and other subjects. The tutors, certified by the College Reading and Learning Association (CRLA), have excellent communications skills and broad knowledge of the subjects they tutor. CPS Learning Labs provide the campus community access to tutoring services and open computer labs to support student learning. More information is available at <http://www.tsc.edu/index.php/learning-lab.html>