SOUTHWEST TECH
SOUTHWEST TECHNICAL COLLEGE

TEEL 1210 - Electrician Apprentice IIA (3 Credits)

Course Description

The Electrician Apprentice IIA course discusses single-phase and three-phase alternating current (AC) power systems, inductance, capacitance, reactance, power factor, and power correction. In this course, students will begin a more comprehensive analysis of National Electrical Code (NEC) requirements and calculations. They will explore the NEC requirements for wiring methods and installations of electrical systems as well as electrical safety in the use of energized equipment.

Course Objectives

- Show proficiency in calculating properties of an AC circuit.
- Demonstrate proper use of hand tools and electrical equipment in practice live applications
- Demonstrate proficiency in applying and calculating the sizing of Branch circuits, feeders, services, and load calculations

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Course Outline

- Year IIA

Textbook & Reading Materials

NFPA 70: NEC National Electrical Code 2023, National Fire Protection Association (NFPA), ISBN: 9781455929320
Ugly's Electrical References, 2023 Edition, Charles R Miller, ISBN: 9781284275914
Electrical Safety: A Practical Guide to OSHA and NFPA 70E, James R. White, ISBN: 9780826935977
Delmar's Standard Book of Electricity, Stephen L. Herman, ISBN: 9781337900348
Electrical Systems Based on the 2023 NEC, Michael I. Callanan & Bill Wusinich, ISBN: 9780826920638

Assignments and Assessments

Orientation
Orientation Acknowledgement
Electrical Safety: OSHA and NFPA 70E CH 3
UNIT 6 Series Circuits
Reading
DEL Unit 6 Series Circuits Due 9-9
UNIT 7 Parallel Circuits
Reading
DEL Unit 7 Parallel Circuits Due 9-9
UNIT 8 Combination Circuits
Reading
DEL Unit 8 Combination Circuits Due 9-9
UNIT 14 Basic Trigonometry and Vectors
Reading
DEL Unit 14 Basic Trigonometry and Vect ors Due 9-16
UNIT 15 Alternating Current
Reading
DEL Unit 15 Alternating Current Due 9-16
UNIT 16 Induct ance in AC Circuits
Reading
DEL Unit 16 Inductance in AC Circuits Due 9-23
UNIT 17 Resistive-Inductive Series Circuits
Reading
DEL Unit 17 Resistive-Inductive Series Circuits Due 9-30
UNIT 18 Resistive-Inductive Parallel Circuits
Reading
DEL Unit 18 Resistive-Inductive Parallel Circu its Due 9-30
UNIT 19 Capacitors
Reading
DEL Unit 19 Capacitors 10-7
UNIT 20 Capacitance in AC Circuits
Reading
DEL Unit 20 Capacitance in AC Carcuit Due 10-7
Midterm Exam
UNIT 21 Resistive-Capacitive Series Circuits
Reading
DEL Unit 21 Resistive-Capacitive Series Circuits Due 11-11
UNIT 22 Resistive-Capacitive Parallel Circuits
Reading
DEL Unit 22 Resistive-Capacitive Parallel Circuits Due 11-11
UNIT 23 Resistive-Inductive-Capacitive Series Circuits
Reading
DEL Unit 23 Resistive-Inductive-Capacitive Series Circuits 11-18
UNIT 24 Resistive-Inductive-Capacitive Parallel Circu its
Reading
DEL Unit 24 Resistive-Inductive-Capacitive Parallel Circuits Due 11-18
UNIT 10 Using Wire Tables and Determining Conductor Sizes
Reading
DEL Unit 10 Using Wire Tables and Determining Conductor Sizes Due 11-25
UNIT 26 Three-Phase Circuits
Reading
DEL Unit 26 Three-Phase Power Due 12-9
eTextbook: Illustrated Guide to t hie National Electrical Code
IGNEC Unit 8 Load Calculations Due 12-9
ES Chapter 2-Branch Circuits and Feeders Due 11-16-23
ES Chapter 3-Dwelling Load Calculations Due 12-1-22
ES Chapter 4-Services Due 12-1-22
ES Chapter 5-Conductors and Overcurrent Protection
Final Practice Exam
ELEC 002A Final Exam
Bell Quiz 1 9-22-22
Bell Quiz 2 10-6-22
Bell Quiz 3 10-13-22
Bell Quiz 4 11-10-22
Bell Quiz 5 11-17-22
End of Course Survey
1_found_base_plan.pdf
2_first_floor plan.pdf
3_south_elev wind_door _sch.pdf
4_ east_ elev int_ elev.pdf
S_north_elev_plot_plan.pdf
6 _ west_ elev_ elec_sch.pdf
7 _cross_section_a-a.pdf
8_basement_elec_plan.pdf
9 _first_floor elec_plan.pdf
basement_electrical.pdf
first_floor _electrical.pdf

Subject to change. Please consult your Canvas course for the most current instructions and updates.

Classroom Hours

Start: 8-18-2025
End: 12-8-2025

Mo, Th
6:00 PM - 9:00 PM

For a full list of course hours visit: Course Schedule

Instructor Contact Information

Jeremy Leavitt — jleavitt@stech.edu

Office Hours: By appointment

Email is the preferred method of communication; you will receive a response within 24 hours during regular business hours.

Canvas Information

Canvas is the where course content, grades, and communication will reside for this course.

- stech.instructure.com
- For Canvas passwords or any other computer-related technical support contact Student Services.
- For regular Hours and Weekdays call (435) 586 - 2899.
- For after Hours & Weekends call (435) 865 - 3929 (Leave a message if no response).

Course Policies

Attendance is required for course credit and DOPL licensure points. You will also be required to complete the course (exams and homework) with 75% or higher accuracy for credit and DOPL licensure points.
Cell phones for many have become a distraction. When you are in class or lab we encourage you to keep your cell phones put away in a secure location. If you use ear buds we ask that you only use one so you can still hear the things going on around you. If you are using your phone for things other than school related items, instructors will ask you to put them away. Please follow the direction of your instructors. Those who have been asked to refrain from using your cell phone and fail to do so will be asked to meet with the Director of Transportation and student services will be notified.

Additional Information

InformaCast Statement: Southwest Tech uses InformaCast to ensure the safety and well-being of our students. In times of emergency, such as weather closures and delays, this app allows us to promptly deliver notifications directly to your mobile devices. To stay informed and receive real-time updates, we encourage all students to sign up for notifications. Your safety is our priority, and staying connected ensures a swift response to any unforeseen circumstances. More information and directions for signing up are available at: https://stech.edu/emergency-notifications/

Internet Acceptable Use Policy: The student is expected to review and follow the Southwest Technical College Internet Safety Policy at: https://stech.edu/students/policies/

Student Code of Conduct Policy: The student is expected to review and follow the Southwest Technical College Student Code of Conduct Policy at: https://stech.edu/students/policies/

Accommodations: Students with medical, psychological, learning, or other disabilities desiring accommodations or services under ADA, must contact the Student Services Office. Student Services determines eligibility for and authorizes the provision of these accommodations and services. Students must voluntarily disclose that they have a disability, request an accommodation, and provide documentation of their disability. Students with disabilities may apply for accommodations, based on an eligible disability, through the Student Services office located at 757 W. 800 S., Cedar City, UT 84720, and by phone at (435) 586-2899. No diagnostic services are currently available through Southwest Technical College.

Safety and Building Maintenance: The College has developed and follows a variety of plans to ensure the safe and effective operation of its facilities and programs. The following plans are available online:
1) Facilities Operations and Maintenance Plan; 2) Technical Infrastructure Plan; and 3) Health and Safety Plan.

Withdrawals and Refunds: Please refer to the Southwest Technical College Refund Policy at:
https://stech.edu/students/policies/

Any high school or adult student, who declares a technical training objective is eligible for admission at Southwest Technical College (Southwest Tech). Program-specific admissions requirements may exist and will be listed on the Southwest Tech website. A high school diploma or equivalent is not required for admission but is mandatory for students seeking Title IV Federal Financial Aid.

Non-Discriminatory Policy: Southwest Technical College affirms its commitment to promote the goals of fairness and equity in all aspects of the educational enterprise, and bases its policies on the idea of global human dignity.

Southwest Tech is committed to a policy of nondiscrimination. No otherwise qualified person may be excluded from participation in or be subjected to discrimination in any course, program or activity because of race, age, color, religion, sex, pregnancy, national origin or disability. Southwest Technical College does not discriminate on the basis of sex in the education programs or activities that it operates, as required by Title IX and 34 CFR part 106. The requirement not to discriminate in education programs or activities extends to admission and employment. Inquiries about Title IX and its regulations to STECH may be referred to the Title IX Coordinator, to the Department of Education, and/or to the Office for Civil rights.

If you believe you have experienced discrimination or harassment on our campus, please contact the Title IX Coordinator, Cory Estes: cestes@stech.edu, (435) 865-3938.

For special accommodations, please contact the ADA Coordinator, Cyndie Tracy: ctracy@stech.edu, (435) 865-3944.
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