

## TEEL 1220 - Electrician Apprentice IIB (3 Credits)

### Course Description

The Electrician Apprentice IIB course continues the comprehensive analysis of the National Electrical Code (NEC). In this course, students will evaluate the functions, uses, and calculations for direct current (DC) and alternating current (AC) motors, transformers, and other equipment. They will be instructed in electrical safety regarding Personal Protective Equipment (PPE) clothing requirements.

### Course Objectives

- Identify the types and voltages of transformers
- Calculate values related to transformers
- Apply the NEC with emphasis in codes regarding Motors, Transformers, and other electrical equipment
- Identify types, categories, and ratings of PPE clothing
- Show applications of types, categories, ratings of Personal Protective Equipment (PPE)

### Course Outline

- Year IIB

### 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

UNIT 26 Three-Phase Circuits

Reading

UNIT 27 Single-Phase Transformers

Reading

DEL Unit 27 Single-Phase Transformers Due 1-13

DEL Unit 27 Single-Phase Transformers Due 1-13

UNIT 28 Three-Phase Transformers

Reading

DEL Unit 28 Three-Phase Transformers 1-27

UNIT 29 DC Generators

Reading

DEL Unit 29 DC Generators Due .2-3

UNIT 30 DC Motors

Reading

DEL Unit 30 DC Motors Due 2-3

UNIT 31 Three-Phase Alternators

Reading

DEL Unit 31 Three-Phase Alternators Due 2-10

UNIT 32 Three-Phase Motors

Reading

DEL Unit 32 Three-Phase Motors Due 2-10

Unit 17. Industrial Locations

IGNEC Unit 17 Motors Due 2-.24

Unit 9. Services and Electrical Equipment

IGNEC Unit 9 Due 3-3

Electrical Systems Ch 6 Grounding

Electrical Systems Ch 11 Motors, Generators, A/C and

Refrigeration, and Fire Pumps

Midterm Practice Exam

Midterm Exam

Unit 14. Services, Feeders, and Equipment

IGNEC Unit 14 Services, Feeders, and Equipment Due 3-17

Electrical Systems Ch 7 Wiring Methods

Unit 15. Hazardous (Classified) Locations

IGNEC Unit 15 Hazardous Locations Due 3-24

Unit 16. Health Care

IGNEC Unit 16 Health Care Facilities Due 3-24

Unit 12. General Provisions

IGNEC Unit 12 General Provisions Due 4-7

Unit 17. Industrial Locations

IGNEC Unit 17 Industrial Locations Due 4-14

ES Chapter 13 Special Locations

Electrical Safety Chapter 2 - Electrical Safety OSHA and

NFPA 70E.pdf

Electrical Safety: OSHA and NFPA 70E Chapter 2

Final Practice Exam

ELEC 002B Final Exam

Electrical Systems Ch 9 Wiring Materials

Electrical Systems Ch 10 Equipment for General Use

ES Chapter 12 Transformers

End of Course Survey

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

## Classroom Hours

Start: 1-5-2026

End: 4-30-2026

Mo, Th

6:00 PM - 9:00 PM

For a full list of course hours visit: [Course Schedule](#)

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## Instructor Contact Information

Jeremy Leavitt — [jleavitt@stech.edu](mailto: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.

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## Canvas Information

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

- [stech.instructure.com](http://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).
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## Course Policies

Course Grading: You will also be required to complete the course, exams and homework, with 75% or higher accuracy for credit and DOPL licensure points.

High School Power School Grades: Quarter student grades will be determined by student progress percentage. Faculty will use the higher percentage of either 1) quarter progress, or 2) cumulative progress for the current training plan year.

Grade Scale: The following grading scale will be used to determine a letter grade.

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|-----------------|-----------------|-----------------|-----------------|
| • A : 94 - 100% | • B : 83 - 86%  | • C : 73 - 76%  | • D : 63 - 66%  |
| • A- : 90 - 93% | • B- : 80 - 82% | • C- : 70 - 72% | • D- : 60 - 62% |
| • B+ : 87 - 89% | • C+ : 77 - 79% | • D+ : 67 - 69% | • F : 0 - 59%   |

Course Policies: 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](mailto:cestes@stech.edu), (435) 865-3938.

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

Southwest Technical College

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