



**Course Title: Commercial Wiring**  
**Course #: ELC 111-1**

**Credit Hours: 4**  
**Semester: Spring 2022**  
**Cap: 10**

**Faculty:** Virgil T. House

**E-mail:** [vhouse@navajotech.edu](mailto:vhouse@navajotech.edu)

**Office: Room 123, Trades Building**

**Office Phone:** (505) 387-1047

**Office Hours** (face-to-face or online): 8:00am-5:00pm M-F

**Preferred Communication** (email and/or text; will respond within 24 hours): [vhouse@navajotech.edu](mailto:vhouse@navajotech.edu)

Or cell phone number (505) 459-0518

**Modality** (face-to-face, hybrid, or online):

**Class Location and Meeting Times** (if face-to-face): Trades Building, Rm 123 8:00am-9:50pm T/TH

**Meeting Hours and Online Hours** (if hybrid):

**Required Materials:**

**Textbooks: Modern Commercial Wiring 8<sup>th</sup> Edition by Harvey N. Holzman**

**Based on the 2020 NEC ISBN 978-1-63563-875-2**

**National Electrical Codebook 2020 ISBN 978-1-4559-2297-0**

**Laptop and Internet Access:** Every student is required to own a laptop and have internet access.

**Tools: Scientific Calculator (TI-30Xa)**

**Color Pencils**

**Lab Fee (if applicable): None**

**Mission, Vision, and Philosophy**

*Mission:* Navajo Technical University honors Diné culture and language, while educating for the future.

*Vision:* Navajo Technical University provides an excellent educational experience in a supportive, culturally diverse environment, enabling all community members to grow intellectually, culturally, and economically.

*Philosophy:* Through the teachings of Nitsáhákees (thinking), Nahátá (planning), Íina (implementing), and Siihasin (reflection), students acquire quality education in diverse fields, while preserving cultural values and gaining economic opportunities.

**Course Description:** This course includes electrical theory, principles and practices, as well as a thorough understanding of the National Electrical Code Requirements. The safety hazards while working with electricity. The five basic voltage systems derived from utility-supplied distribution through a single phase or three phase transformer. It provides both the fundamentals of electrical wiring and the latest practices in the trade. All practical applications will follow New Mexico and the National Electrical Code.

<b>Course Outcomes</b>	<b>Course Assessments</b>
Working Safely in a Commercial and Residential Wiring environment	Quiz, Exams, and Hands-On Procedures
Electrical Fundamentals and Theory	Quiz, Exams, and Hands-On Procedures
Safety: Identify Hazards associated with electrical work	Quiz, Exams, and Hands-On Procedures
Terminology of the National Electrical Code	Quiz, Exams, and Hands-On Procedures
Electrical Drawings and Schematics	Quiz, Exams, and Hands-On Procedures
Service and Distribution, Power Riser, Transformers, Overcurrent Protection and Grounding	Quiz, Exams, and Hands-On Procedures
Branch Circuits and Feeders	Quiz, Exams, and Hands-On Procedures
Wiring Methods: Sizing Conductors based on Load Calculation	Quiz, Exams, and Hands-On Procedures

### Connections to Program Assessment (Course-Embedded Measures)

#### Course Activities

<b>Week</b>	<b>Date</b>	<b>Class Topics/Reading Due</b>	<b>Assignments Due</b>	<b>Assessments</b>
1	1/17-1/21	Chapter 1 Electrical Fundamentals Review  Due 1/25	Chapter 1 Know and Understand, Apply and Analyze, and Workbook	Test 1/25
	<b>Jan.21</b>	<b>Last day to add/drop</b>		
2	1/24-1/28	Chapter 2 & 3 Safety and Tools  Due 2/1	Chapter 2 & 3 Know and Understand, Apply and Analyze, and Workbook	Test 2/1
3	1/31-2/4	Chapter 4 Electrical Prints, Specifications, and Codes  Due 2/8	Chapter 4 Know and Understand, Apply and Analyze, Workbook, & Know the Code	Test 2/8
4	2/7-2/11	Chapter 5 Wiring Methods  Due 2/15	Chapter 5 Know and Understand, Apply and Analyze, Workbook, & Know the Code	Test 2/15

5	2/14-2/18	Chapter 6 Conductors Due 2/22	Chapter 6 Know and Understand, Apply and Analyze, Workbook, & Know the Code	Test 2/22
6	2/21-2/25	Chapter 7 & 8 Boxes & Conduit Bodies, Overcurrent Protections Due 3/1	Chapter 7 & 8 Know and Understand, Apply and Analyze, Workbook, & Know the Code	Test 3/1
	<b>Mar.1</b>	<b>Graduation Petition Due</b>		
7	2/28-3/4	Chapter 9 Service and Distribution Due 3/8	Chapter 9 Know and Understand, Apply and Analyze, Workbook, & Know the Code	Test 3/8
	<b>Mar.31</b>	<b>Last day to withdraw with "W"</b>		
8	3/7-3/11	Midterm Grades due 3/11	Midterm Exam 3/10	Chapters 1,2,3,4,5,6,7,8, & 9
9	3/14-3/18	Spring Break		
10	3/21-3/25	Chapter 10 Transformer Due 3/29	Chapter 10 Know and Understand, Apply and Analyze, Workbook, & Know the Code	Test 3/29
11	3/28-4/1	Chapter 11 Grounding Due 4/5	Chapter 11 Know and Understand, Apply and Analyze, Workbook, & Know the Code	Test 4/5
12	4/4-4/8	Chapter 12 Branch Circuits and Feeders Due 4/12	Chapter 12 Know and Understand, Apply and Analyze, Workbook, & Know the Code	Test 4/12
13	4/11-4/15	Chapter 13 Motors Due 4/19	Chapter 13 Know and Understand, Apply and Analyze, Workbook, & Know the Code	Test 4/19

14	4/18-4/22	Chapter 14 Motor Controls Due 4/26	Chapter 14 Know and Understand, Apply and Analyze, Workbook, & Know the Code	Test 4/26
15	4/25-4/29	Chapter 16 Hazardous Locations Due 5/3	Chapter 16 Know and Understand, Apply and Analyze, Workbook, & Know the Code	Test 5/3
16	<b>5/2-5/6</b>	<b>Chapter 17 Pools and Fountains</b> <b>Due 5/10</b>	<b>Chapter 17 Know and Understand, Apply and Analyze, Workbook, &amp; Know the Code</b>	Test 5/10
17	<b>5/9-5/13</b>	<b>Final Exam Week</b>		
		<b>Final Exam 5/12</b> <b>Grades due to the Registrar 5/13</b>	<b>Finals</b>	<b>Chapters 10,11,12,13,14,16,17, and 18</b>
		<b>Graduation 5/13</b>		

### Grading Plan

Homework: 25%  
Attendance: 5%  
Class Participation: 5%  
Quizzes and Test: 25%  
Mid-term: 40%  
Portfolio:

Home work: 25%  
Attendance: 5%  
Class Participation: 5%  
Quizzes and Test: 25%  
Final Exam: 40%

A = 100-90%  
B = 89-80%  
C = 79-70%  
D = 69-60%  
F = 59% or less

**This class is required to pass with a Final Grade of “C”. If one does not meet the passing grade, the student will be required to repeat the class!**

### Grading Policy

Students must do their own work. Cheating and plagiarism are strictly forbidden. Cheating includes (but is not limited to) plagiarism, submission of work that is not one's own, submission or use of falsified data, unauthorized access to exams or assignments, use of unauthorized material during an exam, or supplying or communicating unauthorized information for assignments or exams.

## **Participation**

Students are expected to attend and participate in all class activities. Points will be given to students who actively participate in class activities including guest speakers, field trips, laboratories, and all other classroom events.

## **Cell phone and headphone use**

Please turn cell phones off **before** coming to class. Cell phone courtesy is essential to quality classroom learning. Headphones must be removed before coming to class.

## **Attendance Policy**

Students are expected to attend all class sessions. A percentage of the student's grade will be based on class attendance and participation. Absence from class, regardless of the reason, does not relieve the student of responsibility to complete all course work by required deadlines. Furthermore, it is the student's responsibility to obtain notes, handouts, and any other information covered when absent from class and to arrange to make up any in-class assignments or tests if permitted by the instructor. Incomplete or missing assignments will necessarily affect the student's grades. Instructors will report excessive and/or unexplained absences to the Counseling Department for investigation and potential intervention. **Instructors may drop students from the class after three (3) absences unless prior arrangements are made with the instructor to make up work and the instructor deems any excuse acceptable. All absences excused or unexcused will be considered not attending class! If you were to have a total of 4 combined, you will be dropped from the class.**

## **Study Time Outside of Class for Face-to-Face Courses**

**For every credit hour in class, a student is expected to spend two hours outside of class studying course materials.**

## **Study Time for Hybrid or Blended Courses**

**For a hybrid or blended course of one credit hour, a student is expected to spend three hours per week studying course materials.**

## **Study Time for Online Courses**

**For an online course of one credit hour, a student is expected to spend four hours per week studying course materials.**

## **Academic Integrity**

Integrity (honesty) is expected of every student in all academic work. The guiding principle of academic integrity is that a student's submitted work must be the student's own. Students who engage in academic dishonesty diminish their education and bring discredit to the University community. Avoid situations likely to compromise academic integrity such as: cheating, facilitating academic dishonesty, and plagiarism; modifying academic work to obtain additional credit in the same class unless approved in advance by the instructor, failure to observe rules of academic integrity established by the instructor. **The use of another person's ideas or work claimed as your own without acknowledging the original source is known as plagiarism and is prohibited.**

## **Diné Philosophy of Education**

The Diné Philosophy of Education (DPE) is incorporated into every class for students to become aware of and to understand the significance of the four Diné philosophical elements, including its affiliation with the four directions, four sacred mountains, the four set of thought processes and so forth: Nitsáhákees, Nahát'á, Íina and Siih Hasin which are essential and relevant to self-identity, respect and wisdom to achieve career goals successfully.

At NTU's Zuni Campus, the A:shiwi Philosophy of Education offers essential elements for helping students develop Indigenous and Western understandings. Yam de bena: dap haydoshna: akkyā hon detsemak a:wannikwa da: hon de:tsemak a:ts'umme. *Our language and ceremonies allow our people to maintain strength and knowledge.* A:shiwi core values of hon i:yyułashik'yanna:wa (respect), hon delank'oha:willa:wa (kindness and empathy), hon i:yyayumofa:wa (honesty and trustworthiness), and hon kohoł lewuna:wedyahnan, wan hon kela i:tsemanna (think critically) are central to attaining strength and knowledge. They help learners develop positive self-identity, respect, kindness, and critical thinking skills to achieve life goals successfully.

### **Students with Disabilities**

Navajo Technical University is committed to serving all students in a non-discriminatory and accommodating manner. Any student who feels that she or he may need special accommodations should contact the Accommodations Office (<http://www.navajotech.edu/student-services#accomodations-services>) in accordance with the university's Disability Accommodations Policy (see [http://www.navajotech.edu/images/about/policiesDocs/Disability\\_Exhibit-A\\_6-26-2018.pdf](http://www.navajotech.edu/images/about/policiesDocs/Disability_Exhibit-A_6-26-2018.pdf)).

### **Email Address**

Students are required to use NTU's email address for all communications with faculty and staff.

**Final Exam Date: December 16, 2021**