Navajo Technical University http://www.navajotech.edu
PO Box 849, Crownpoint, NM 87313 Tel: (505) 387-7401

Course Title: Electrical Trade Lab 1
Course #: ELC 102-1

Credit Hours: 2
Semester: Spring 2022
Cap: 10

Faculty: Virgil T. House **E-mail**: 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
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 3:00am-5:00pm M/W
Meeting Hours and Online Hours (if hybrid):

Required Materials:

Textbooks: **Conduit Bending Workbook**

By: Tom Henry

Tools: Hand Tools will be issued and purchased thru the student's account
Scientific Calculator: TI-30Xa or TI-84 Plus
Color Pencils
Lab Fee (if applicable): Yes

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), Íína (implementing), and Siihasin (reflection), students acquire quality education in diverse fields, while preserving cultural values and gaining economic opportunities.

Course Description: This course will include practical wiring applications: installation of nonmetallic boxes, single pole, three way, four way switches, electrical devices, duplex receptacles, ground fault circuit interrupter, and Arc Fault Circuit Breakers. Branch circuitry wiring of a residential dwelling for general branch circuits, small appliance branch circuit, water heater circuit, electric dryer and range outlets. Termination of electrical wiring in the electrical panel for a 100 amp or 200 amp service panel. The National Electrical Code will be used to determine correct procedures in the installation, fabrication, design, and testing of electrical equipment.

Course Outcomes	Course Assessments
Working Safely in a Residential Wiring environment	Hands-On Procedures
Proper Tool usage	Hands-On Procedures
Safety: Identify Hazards associated with electrical work	Hands-On Procedures
Material Identification	Hands-On Procedures
Electrical Drawings and Schematics	Quiz, Exams, and Hands-On Procedures
Conduit Bending and Installation	Quiz, Exams, and Hands-On Procedures
Sizing Proper Wire Usage	Quiz and Hands-On Procedures
Branch Circuitry and Complex Wiring Systems	Quiz, Exams, and Hands-On Procedures

Connections to Program Assessment (Course-Embedded Measures)

Course Activities

Week	Date	Class Topics/Reading Due	Assignments Due	Assessments
1	1/17-1/21	Chapter 2/3 Safety and Hand Tools Due 1/26	Chapter 2 and 3 Workbook	Test 1/26
	Jan. 21	**Last day to add/drop**		
2	1/24-1/28	Working with Nonmetallic Sheathed Cable (Hand Out) Due 2/2	NEC 334 Nonmetallic Sheathed Cable Types NM and NMC. Hand out and Branch Circuitry	Test 2/2
3	1/31-2/4	Chapter 12 Device Wiring Due 2/9	Chapter 12 Workbook, Know and Understand, Apply and Analyze, Critical Thinking, and Know the Code. Branch Circuitry	Test 2/9
4	2/7-2/11 21st President's Day Holiday	Chapter 13 Lighting Systems Due 2/16	Chapter 13 Workbook, Know and Understand, , Apply and Analyze, Critical Thinking, and Branch Circuitry	Test 2/16

5	2/14-2/18	Chapter 14 Appliance Wiring and Special Outlets Due 2/28	Chapter 14 Workbook, Review Questions, Know the Code, and Branch Circuitry	Test 2/28
6	2/21-2/25	Chapter 4 Electrical Measurement and Testing Equipment Due 3/7	Chapter 4 Workbook, Review Questions, Know the Code, and Branch Circuitry	Test 3/7
	Feb.25	Graduation Petition Due		
7	2/28-3/4	Branch Circuitry: 3 way and 4 way wiring		TBA
	Mar.31	**Last day to withdraw with "W"**		
8	3/7-3/11	Midterm Grades due 3/11	Midterm Exam 3/11	Comprehensive exam on Chapters 2, 3, 4, 13, & 14. Branch Circuitry
9	3/14-3/18	**Spring Break**		
10	3/21-3/25	Conduit Bending Workbook Due 3/28	Working with Hand Benders ½"-1 ¼"	Test 3/28
11	3/28-4/1	Conduit Bending Workbook Due 4/4	Stubs, Offsets, Back to Back Bends	Test 4/4
12	4/4-4/8	Conduit Bending Workbook Due 4/11	Kicks, 3 and 4 Bend Saddles, Layout and Parallel Offsets	Test 4/11
13	4/11-4/15	Conduit Bending Workbook Due 4/18	Offsets, and Stub 90 degree, ½"- 1"	Test 4/18
14	4/18-4/22	Conduit Bending w/a Mechanical Bender Due 4/25	Bending 90 degree stubs and offsets, ½' – 2"	Test 4/25
15	**4/25-4/29**	**Conduit Bending w/ a Electrical Bender** **Due 5/2**	**Bending Stubs and Offsets**	Test 5/2
16	**5/2-5/6**	**Conduit Bending w/ a Electrical Bender**		
17	**5/9-5/13**	**Final Exam May 11**	**Finals**	Comprehensive Exam and Conduit Bending

		Final Grades Due	**May 12**	
		Graduation	**May 13**	

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, Íína 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: akkya 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:yyayumoła:wa (honesty and trustworthiness), and hon kohoł lewuna:wediyahnan, 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).

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

Final Exam Date: May 12, 2020