



ARCHITECTURE, CONSTRUCTION & MANUFACTURING TECHNOLOGIES DIVISION

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**CONSTRUCTION TECHNOLOGY DEPARTMENT  
COURSE SYLLABUS**

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COURSE NUMBER: **CNBT 1221**

COURSE TITLE: **Introduction to Electrical Safety and Tools**

CREDITS: 2 (1 lecture, 2 lab)

PREREQUISITE / COREQUISITE:

Instructor: Don Wood; Ph. 281-931-0562; Email: donald.wood1@hccs.edu

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**COURSE DESCRIPTION**

Safety rules and regulations. Includes the selection, inspection, use, and maintenance of common tools for electricians.

**END-OF-COURSE-OUTCOMES**

Explain electrical hazards and how to avoid them in the workplace; discuss safety issues concerning lockout/tagout procedures; and demonstrate safe work habits using common hand and power tools for electricians.

**COURSE OBJECTIVES**

Upon completion of this course, the student will:

- Exhibit knowledge of safety rules and regulations, and demonstrate awareness of hazards in the workplace.
- Explain the causes and results of accidents.
- Describe job site hazards.
- Explain the use of personal protective equipment.
- Describe proper lifting procedures.
- Explain causes of fires.
- Describe proper selection and use of fire extinguishers.
- Perform operations with whole numbers, fractions, and decimals.
- Use geometry to compute perimeters, areas, and volumes.
- Illustrate the proper selection and use of hand tools.
- Describe the proper selection and use of power tools.
- Explain the use and applications of blueprints.
- Specify common nomenclature using in rigging.

**COURSE REGULATIONS**

REQUIRED TEXTBOOK(S) & ADDITIONAL RESOURCES:

TITLE EDITION AUTHOR PUBLISHER ISBN REMARKS

REQUIRED STUDENT SUPPLIES

REQUIRED TOOLS

#### GRADING SCALE:

90 -100 = A (Excellent)

80 - 89 = B (Good)

70 -79 = C (Fair)

60 – 69 = D (Passing) Less than 60 = F \*(Failed)

***\*XF will be awarded to students that stop attending or do not withdraw from the class by the withdrawal deadline***

#### COURSE GRADING CRITERIA\*

ITEM QUANTITY PERCENT OF GRADE REMARKS

TESTS

QUIZZES

MIDTERM

ASSIGNMENTS

PROJECTS

FINAL PROJECT

FINAL EXAM

***\*Refer to instructor's specific course grading criteria for details***

PLEASE READ IMPORTANT INFORMATION ON PAGE 3

### COURSE POLICIES

#### **Attendance**

Students are expected to attend classes regularly, and to be on time for every class period. Students can be dropped from a class due to excessive absences. Excessive tardiness may be considered absences. Students are responsible for subjects, assignments, and projects covered during their absences. Consult the ***Student Handbook*** for more details or visit <http://www.hccs.edu/hccs/current-students/student-handbook>

#### **Academic Honesty**

Scholastic dishonesty is treated with the utmost seriousness by the instructor and the College. Academic dishonesty includes, but it is not limited to the willful attempt to misrepresent one's work, cheat, plagiarize, or impede other students' scholastic progress. Consult the ***Student Handbook*** for more details.

#### **Students with Disabilities**

HCC strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please meet with a campus Abilities Counselor as soon as possible in order to establish reasonable accommodations. Reasonable accommodations are established through an interactive process between you, your instructor(s) and Ability Services. It is the policy and practice of HCC to create inclusive and accessible learning environments consistent with federal and state law. For more information, please go to <http://www.hccs.edu/district/students/disability-services/>. Any student with a documented disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the **Disability Support Services Office** at his / her respective college at the beginning of each semester. Faculties are authorized to provide only the accommodations requested by the **Disability Support Services Office**. For Central College, call 713 – 718 – 6164.

#### **Cell Phones**

All cell phones must be muted, set to vibrate, or turned off during class. Cell phone activity during class is deemed disruptive to the academic process and will not be tolerated. If you need to make or receive an emergency call, please leave the classroom.

#### **Calculators**

If the course allows the use of a calculator during class, lab projects, and exams, the student is responsible to bring his/her calculator. Cell phones are not calculators, and are not allowed to be used for that purpose during class,

tests, or exams.

### **Student ID**

Students are required to obtain a Student ID. For additional information, consult the ***Student Handbook***.

### **Parking Rules and Regulations**

Students are required to follow HCC's regulations regarding parking and permits. For additional information, visit <http://www.hccs.edu/hccs/about-hcc/police/parking/parking-rules-and-regulations>

### **Books, Tools and Supplies**

Students are required to purchase and bring to class the required textbooks, tools, notebooks, supplies, and writing instruments as required by the instructor.

### **Dress Code**

Dress code must be appropriate for the class. Students must dress in a way that clothing and accessories do not compromise their safety, and the safety of others. Proper foot wear is required in all laboratories. Absolutely no sandals or other footwear that exposes the feet will be allowed.

### **Classroom & Laboratory Conduct**

Proper behavior is expected in all classes and laboratories. Foul language and horseplay are not allowed. Making or receiving cell phone calls during class are not allowed. Sleeping in class is not allowed.

### **Course Withdrawal**

It is the responsibility of the student to officially withdraw from a course before the official withdrawal deadline. A student who does not withdraw from a course by the deadline will receive an "F" as the final grade. Also note that under Section 51.907 of the Texas Education Code, an institution of higher education may not allow a student to drop more than six courses.

Houston Community College is committed to cultivating an environment free from inappropriate conduct of a sexual or gender-based nature including sex discrimination, sexual assault, sexual harassment, and sexual violence. Sex discrimination includes all forms of sexual and gender-based misconduct and violates an individual's fundamental rights and personal dignity. Title IX prohibits discrimination on the basis of sex-including pregnancy and parental status-in educational programs and activities. If you require an accommodation due to pregnancy please contact an Abilities Services Counselor. The Director of EEO/Compliance is designated as the Title IX Coordinator and Section 504 Coordinator. All inquiries concerning HCC policies, compliance with applicable laws, statutes, and regulations (such as Title VI, Title IX, and Section 504), and complaints may be directed to: David Cross, Director EEO/Compliance, Office of Institutional Equity & Diversity, 3100 Main, (713) 718-8271, Houston, TX 77266-7517 or Houston, TX 77266-7517 or [Institutional.Equity@hccs.edu](mailto:Institutional.Equity@hccs.edu)

## **COURSE TIMELINE, CONTENTS & ACTIVITIES**

### **COURSE RULES AND ORIENTATION**

- Introduction
- Purpose of the course
- Overview of course syllabus
- Course policies
- Required materials, textbook(s), supplies, and resources (if applicable)
- Disability Support Services
- Registration, schedules, receipts, and student ID
- Importance of updating and maintaining student data (Name, Address, ID #, phone numbers, emails)
- Parking rules and regulations
- Classroom and laboratory safety
- Course withdrawal, ***Official Day of Record***, and last day for withdrawal
- Course tests, quizzes, exams, and assignments

- Course grading policies
- Instructor information
- Campus orientation

### **Topics Covered**

- Terms
- OSHA Policies on Safety
- Safety Culture
- Incidents and Accidents: causes and results
- Construction site job hazards
- At-Risk Work Habits
- Alcohol and Drugs
- Unskilled Workers
- Intentional Acts
- Unsafe Acts
- Rationalizing Risk
- Unsafe Conditions
- Clothing
- Eye and Face Protection
- Hearing Protection
- Breathing Protection
- Fall Protection
- Scaffolding
- Ladders
- Hand Safety Tools
- Power Tool Safety
- Electrical Power
- Safety Dealing with Compressed Air
- Decks and Flooring
- Safety in and Around Excavations
- Proper lifting
- Stacking and Storing Materials
- Falling Objects
- Handling Hazardous Materials
- Jobsite Exposure Hazards
  - Lead
  - Bloodborne Pathogens
  - Chemical Splashes
  - Container Labeling
  - Radiation Hazards
  - Biological Hazards
  - Hazardous Recognition, Evaluation, and Control
- Job Safety Analysis (JSA) and Task Safety Analysis (TSA)
- Risk Assessment
- Reporting Injuries, Incidents, and Near-Misses
- Safety Data Sheets
- Hazard communication standard
- Hand tools
- Power Tools
- Meters
- Power Cords and Accessories
- Miscellaneous Tools