



## Mission Syllabus

## Electricity

**Program Number:** I460312

**Program Hours:** 1200

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The purpose of the program reflects Emerald Coast Technical College's mission as evidenced by the desire to provide students with the training and education that is required to function successfully in the professional workforce.

**PROGRAM DESCRIPTION:** The Electricity program is to prepare students for employment or advanced training in a variety of electrical industries. The program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education.

This program covers the use of tools, Electrical Safety, Hand Bending, Fasteners and Anchors, Electrical Theory One, Electrical Theory Two, Introduction to the NEC, Raceways, Boxes, Fittings, Conductors, Introduction to Blueprints, Wiring: commercial, Wiring: Residential, Alternating Current, Motors, Grounding, Conduit Bending, Boxes and Fittings, Conductor Installation, Cable Trays, Conductor Terminations, Electrical Services, Circuit Breakers, Contactors, Electric Lighting, Branch Circuits, Conductor Calculation, Over-current Protection, Wiring Devices, Distribution Equipment, Lamps and Ballasts, Motor Calculation, Motor Maintenance, Motor Controls, Hazardous Locations, Load Calculations, Lighting applications, Standby and Emergency Systems, Basic Electronic Theory, Fire Alarm Systems, Specialty Transformers, Communication Skills, Employability Skills

**Prerequisites:** NCCER Core Curriculum

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code
A	BCV0603	Electrician Helper	ELECTRICAL @7 7G IND ENGR 7G TEC ED 1@2	300 Hours	47-3013
B	BCV0640	Residential Electrician	ELECTRICAL @7 7G	450 Hours	47-2111
C	BCV0652	Commercial Electrician		450 Hours	47-2111

### **TEXTBOOKS:**

Pre-requisite: Core Curriculum, 2015 Introductory Craft Skills, Contren Learning

ISBN: 978-0-13-608636-9, used for OCP A, OCP B, OCP C

Textbook #1: Electrical Level One, 2017 NEC Revision. Contren Learning

ISBN: 0-13-168447-7 used for OCP A, OCP B, OCP C

Textbook #2: Electrical Level Two, 2017 NEC Revision. Contren Learning

ISBN: 0-13-168448-5 used for OCP A, OCP B, OCP C

Textbook #3: Electrical Level Three, 2017 NEC Revision. Contren Learning

ISBN: 0-13-168231-8 used for OCP A, OCP B, OCP C, OCP D

Textbook #4: Electrical Level Four, 2017 NEC Revision. Contren Learning



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ISBN: 0-13-168235-0 used for OCP A, OCP B, OCP C, OCP D

Workbook #1: National Electric Code, 2017 NEC, ISBN: 978-145590673-4, used for OCP A, OCP B, OCP C

### **TOOLS / SUPPLIES:**

Students will need to purchase the following items before beginning OCP B;

- 2- Flat-head screwdrivers
- 1- Phillip-head (#2) screwdrivers
- 1- rapid drive Flat-head screwdriver
- 1- 9.5" Lineman pliers
- 1- 7" Needle nose pliers
- 1- pump pliers (channel locks)
- 1- diagonal side cutting pliers 1- "T" stripper
- 1- nut driver set
- 1- 25' measuring tape
- 1- Utility knife 1- Electrical multi-meter
- 1- torpedo level
- 1- Tool belt
- 1- 8-pocket tool pouch
- 1- Cordless drill
- 1- Bit accessory kit
- Leather shoes/boots
- 3 ring binder (2")
- Paper, pen and pencil
- ❖ ECTC Electricity Program offers all the tools listed for student purchase.

### **HOW YOU ARE MEASURED (GRADES):**

40% Competency/Performance Evaluation (Daily assignments, homework and lab activities)

40% Evaluation (Written Exams and Major Projects)

20% Work Order/Professionalism: Ability to communicate with customers and complete assigned tasks.

### **Grading Scale:**

A	93-100
B	84-92
C	70-83
F	69 & Below

### **Satisfactory Progress:**

This program is a planned sequence of instruction consisting of four occupational completion points. When the recommended sequence is followed, the structure is intended to prepare students to complete the industry certifications associated with this program of study. This program adheres to the Satisfactory Progress guidelines listed in the ECTC Catalog.

### **MAJOR COURSE OBJECTIVES:**

The courses content includes, but is not limited to:

1. Identify safe working conditions at the laboratory and workplace, and observe safety precautions.
2. Demonstrate an understanding of basic direct-current (DC) electrical-circuit skills.
3. Demonstrate appropriate communication skills.
4. Apply electrical related basic math.
5. Demonstrate an understanding of basic electricity.
6. Demonstrate employability skills.



7. Read and interpret basic electric codes.
8. Demonstrate an understanding of entrepreneurship.
9. Demonstrate positive customer-relations skills.
10. Demonstrate alternating-current (AC) circuit skills.
11. Install residential wiring.
12. Demonstrate proficiency in commercial wiring.
13. Demonstrate specialized electrical skills.
14. Demonstrate proficiency in Industrial wiring
15. Demonstrate competency in AC and DC motors.

**Instructional Delivery Methods:**

This program is a traditional program taught on ECTC campus. It uses a variety of instructional delivery methods including but not limited to:

- ❖ Hands-on training
- ❖ Lectures
- ❖ Videos
- ❖ Web-based programs

**PROGRESS:**

Students will be provided with detailed assignment sheets for each major area/topic of study. Complete mastery of an area must be achieved before proceeding further. **Students are responsible for maintaining a sufficient rate of progress throughout the course**, consistent with their individual student ability.

**LAB SHEETS:**

Student must demonstrate an understanding of theory and basic principles prior to starting labs and major projects.

**CONFERENCES AND ASSISTANCE:**

You are encouraged to come to instructor's office to talk over any problems you may have in this course. Students needing assistance with problems will research along with the instructor all possibilities and utilize all reference materials to achieve a solution. Subject-related problems can be presented to the class as a whole for research upon instructor's approval. Class interaction and discussion concerning occupational area is encouraged.

**CLASS HOURS:**

Class hours are 12:30-4:00 & 4:00-9:30, Monday - Thursday

**OFFICE HOURS:**

Regular office hours for the instructor are Monday – Friday, 7:30-3:00, or as scheduled by appointment.

**STUDENT RESPONSIBILITIES:**

Students are expected to understand and follow all school rules and policies. Students are responsible for class, lab and equipment/tool care. Students are responsible for maintaining proper industry work habits and conduct. Clean-up is the responsibility of all students and will be conducted on a daily basis.

**EXAMINATIONS:**

The course examinations consist of written knowledge examinations and performance evaluations. A knowledge examination is given upon completion of each major topic assignment. Performance evaluation must be mastered before proceeding to the next assignment. Students will be able to repeat performance evaluations until complete mastery is achieved. At the end of each module (chapter) an



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exam will required before moving forward in the course work. All exams will be conducted online and proctored.

### **LAB STATION EQUIPMENT:**

You will be assigned specific equipment for your labs. The equipment you will use is reliable. However, with abuse or misuse, it will malfunction and become inoperable. Be careful and have the instructor demonstrate the use of the equipment before using it for the first time. Read all instructions carefully and ask questions prior to use. Keep your work area and lab areas clean and orderly while performing assignments. Return all software, equipment and lab components to the proper storage area before departing at the end of the period. The classroom lab will be clean and secured at the end of each project or period whichever comes first. If a lab assignment will take more than one day notify the instructor and secure all parts and project at the end of the period.

### **EARNING INDUSTRY CERTIFICATION:**

- Students will complete course work through each module of the Level text book that they are working in (example: students enrolled in Level 1 Electricity will test through 12 modules before earning the NCCER Electrical Wiring Level 1 certification).
- Each student will take a proctored exam for each module in the Level text that they are working in.
- After satisfactory scoring 70% or higher in each module of the level, students will receive an industry certification along with a NCCER Certificate.

### **Classroom Location:**

761 N. 20<sup>th</sup> Street DeFuniak Springs, Florida 32433  
Building 100 Room 052

### **Office Location:**

761 N. 20<sup>th</sup> Street DeFuniak Springs, Florida 32433  
Building 100 Room 052

### **Office Hours:**

Regular office hours for the instructor are 7:30-8:00 a.m. (Mon-Thurs) or as scheduled by appointment.

### **Attendance:**

Attendance is mandatory. Students who believe that attendance may present a problem should discuss their situation with the instructor and with student services. Meet with instructor to schedule makeup hours.

### **Equipment:**

Students will use network and computer hardware/software used in the industry including physical security devices, industrial security panel, health industry devices and network equipment in cyber classroom.

### **Safety:**

- Safety is priority one.
- Report any unsafe conditions to the instructor immediately.
- If you are not comfortable or confident with any lab or project, stop and notify instructor.



**Emergency Procedures:**

- Emergency exits are clearly marked.
- As part of regular classroom instruction, students will be asked to participate in regular safety and emergency drills.
- Fire extinguishers are located in each area.

**Rules and Regulation / Policies and Procedures:**

Students will follow all rules/regulations outlined in the Program Handbook and the Emerald Coast Technical College Catalog.

**General Information:**

Refer to the ECTC Catalog and program handbook, both located at <http://www.ECTC.edu>, for additional information:

- Career and Counseling Services
- Services for Students with Disabilities
- Student Grievance Procedures
- Leave of Absence
- Withdrawal
- Forms