

# ELECTRONICS AND COMPUTER ENGINEERING TECHNOLOGY

## Certificate of Completion #24171

This certificate program prepares individuals either for initial employment or for enhancement of existing skills in the electronics field, or for transfer into B.S. programs in Electronics Technology or Industrial Technology. Students are exposed to core topics such as components and circuits as well as coursework in advanced areas including microcontrollers and interfacing, communications, and industrial electronic controls.

### Program Learning Outcomes

- Students will show evidence of demonstrating higher-level thought processes by relating specific tasks to more general principles.
- Students will employ polar and/or rectangular notation to determine the magnitude and phase shift of an unknown circuit parameter (voltage, current, impedance, and/or power).
- Students will apply knowledge of electronic principles to the areas of communications, industrial electronics, and microcontrollers.
- Students will demonstrate proper use of electronic test equipment and associate measurement results with circuit behaviors in the laboratory.
- Students will quantitatively determine unknown electrical parameters from given or measured values and use these results to assess or troubleshoot faults in circuit and system operation.
- Students will communicate, both verbally and in writing, knowledge of electrical concepts and their application to the observed behaviors of circuits and systems.
- Students will connect concepts learned in introductory courses to more general principles applicable in the employment context.

Review [Student Learning Outcomes \(SLOs\)](#) for this program.

### Required Courses

| Course Prefix | Course Name                               | Units |
|---------------|---|-------|
| VOC EL11      | Technical Applications in Microcomputers  |       |
| VOC EL12      | Computer Simulation and Troubleshooting   |       |
| VOC EL50A     | Electronic Circuits - Direct Current (DC) |       |
| VOC EL50B     | Electronic Circuits (AC)                  |       |
| VOC EL51      | Semiconductor Devices and Circuits        |       |
| VOC EL53      | Communications Systems                    |       |
| VOC EL54A     | Industrial Electronics                    |       |
| VOC EL54B     | Industrial Electronic Systems             |       |
| VOC EL55      | Microwave Communications                  |       |
| VOC EL56      | Digital Electronics                       |       |
| VOC EL61      | Electronic Assembly and Fabrication       |       |
| VOC EL74      | Microcontroller Systems                   |       |
| VOC TCH60     | Customer Relations for the Technician     |       |

### Recommended Electives

| Course Prefix | Course Name   | Units |
|---------------|---|-------|
| VOC EL62      | Advanced Surface Mount Assembly and Rework              |       |
| VOC EL76      | FCC General Radiotelephone Operator License Preparation |       |

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