

Electrical/Electronic Equipment Servicing

Award: DIPLOMA

Length: A full-time student may complete this program in six semesters, which includes two summers.

Purpose: The purpose of the Electrical/Electronic Equipment Servicing program is to train, upgrade and increase technical competence of qualified personnel to operated, maintain and service electrical-electronic equipment.

Program Outcomes:

Upon successful completion of this program, students will be able to:

- Design, draw, construct, analyze, and troubleshoot basic series and parallel AC and DC electrical circuits including all typical circuit elements and explain the function of each.
- Design, draw, construct, analyze, and troubleshoot basic analog and digital electronic circuits.
- Demonstrate an understanding of electronic digital and analog stages, devices, systems and equipment.
- Identify, select, set up and operate basic electronic test and measuring equipment including ammeters, ohmmeters, voltmeters, clamp-on ammeters, multi-meters, power supplies, function generators, RF generators, logic probes, curve tracers and oscilloscopes and explain the application of each.
- Connect, configure, install, program and modify Programmable Logic Controllers.
- Build, configure, analyze, maintain, upgrade and troubleshoot personal computers.
- Plan, construct, repair, operate and test custom designed basic robotic devices.
- Program microcontrollers and explain the function of each command and demonstrate an understanding of program flow. Construct and analyze the function of microcontroller interface circuits.
- Connect, configure, install and commission process control devices and systems.
- Identify, explain, and utilize safety measures and equipment in the lab and the workplace required by NFPA, NEC and OSHA.
- Explain the characteristics and theories of operation of DC and AC single and multi-

phase electric motors and motor control devices and circuits.

- Identify, select and properly use tools that are used in the electrical and electronics industry.
- Demonstrate an understanding of commercial 3-phase electric power generation, transmission, distribution and control, including three-phase power generation, delta and wye connections, transformers and all associated calculations.
- Demonstrate an understanding of alternative energy sources and how they relate to the generation, distribution and control of residential, commercial, and industrial power.
- Demonstrate a basic familiarity with fluid mechanics concepts and equipment.
- Identify, select and install residential, commercial and industrial electrical devices and equipment.
- Demonstrate experience in the field of Electrical Electronic Equipment Servicing or equivalent coursework.