

# ELECTRONICS & AUTOMATION TECHNOLOGY

## Mission

Preparing today's Electronics/Automation Technician for tomorrow's technology.

## Objectives

1. Safety procedures will be stressed to assist students in safe working practices.
2. Students shall learn the importance of human relations when associating with employers, peers, and customers.
3. Students will learn to use:
  - Oscilloscopes
  - Power Supply
  - Multi-meters
  - Function Generator
  - Transistor Testers
  - Z-meters (to measure capacitors and inductors)
  - Microcontrollers
  - Common Sensors found in industry
  - 3D Printers, CNC Router, CNC Mill and CNC Lathe
  - Programmable Logic Controllers (PLC's)
  - ABB and Other Robots
4. Students will be expected to learn:
  - Electronic Component Nomenclature
  - Circuit and Component Analysis and Troubleshooting
  - Basic Soldering including Thru-Hole Soldering
  - Programming as related to Industrial use

## Program Information

Electronics & Automation Technology is an eleven-month program designed to provide entry-level training as well as retraining of the local workforce. The training is accomplished through lectures and labs, computer software simulators, software testing and research. Students begin learning at the component level and move through complex circuits, and then into complete systems. Installation and repair of electronics equipment is stressed. Emphasis is placed on the proper use of test equipment and troubleshooting skills to enhance the students' ability to find faults, and to make repairs as quickly and safely as possible.

Students are taught proper safety procedures to assist them in safe work practices on the job. Students are also taught the importance of human relations when associating with employers, other employees, and customers. Student learning includes, but is not limited to, introduction to basic electronics, terminology, electronic component nomenclature, circuit configuration, component analysis, and basic circuit design. Students will learn soldering skills and to read schematics. Troubleshooting is stressed at each level and in every class

Labs are scheduled by the instructor to complement classroom instruction. Labs reinforce the principles and concepts presented in the class by providing hands-on practice.

Length of program: 2 semesters and 1 summer term

Estimated cost of program including in-state tuition, fees, books and supplies: \$5,316.

An Associate of Applied Science degree in Electronic Technology is offered in conjunction with the Northwest Arkansas Community College (NWACC) in Bentonville. NWTI classes are combined with academics and skills classes from NWACC to earn an AAS. The degree plan is available under Electronics at [www.nwacc.edu](http://www.nwacc.edu).

### **Dress Code**

Reasonable and appropriate clothing, appearance, and hygiene are required. No short pants and no open-toed shoes will be allowed. Students may be asked to return home to change clothing.

### **Curriculum**

The following courses must be satisfactorily completed; (Requires an A, B, or C) to receive a diploma in Electronic Technology:

Course Number	Course Name	Clock Hours	Credit Hours	FA hours
COM1103	Technical Communications I	48	3	1.6
COM1203	Technical Communications II	48	3	1.6
ELT1104	DC/AC Fundamentals	96	4	3.2
ELT1204	Digital Electronics	96	4	3.2
ELT1314	Intro to Robotics/ Automation	96	4	3.2
ELT1503	Computer Essentials for Electronic Techs	96	3	3.2
ELT2304	Solid State Devices	96	4	3.2
ELT2204	Process Control	96	4	3.2
ELT2404	Motors for Electronic Technicians	96	4	3.2
ELT3033	Special Study	48	3	1.6
ELT3314	Programmable Logic Controllers	96	4	3.2
ELT3513	Manufacturing Processes	85	3	2.83
MTH1143	ET Technical Mathematics	48	3	1.6
	Total Hours	1045	46	34.83

### **Suggested Schedule**

#### **Semester I**

COM1103 Technical Communications I  
 ELT1104 DC/AC Fundamentals  
 ELT1204 Digital Electronics  
 ELT1503 Comp. Essentials for Elect. Techs  
 ELT3314 Programmable Logic Controllers  
 MTH1143 ET Technical Mathematics

#### **Semester II**

ELT1314 Intro to Robotics/Automation  
 ELT2204 Process Control  
 ELT2304 Solid State Devices  
 ELT2404 Motors for Electronic Technicians  
 ELT3033 Special Study  
 COM1203 Technical Communication II

#### **Summer**

ELT3513 Manufacturing Processes