

# ELECTRONICS TECHNOLOGY (IELT), CERTIFICATE

## Overview

At Dunwoody College of Technology, the Electronics Technology certificate provides evening students with the entry-level skills and theoretical knowledge needed to design and troubleshoot circuits utilizing the latest semiconductor devices, biomedical devices, microprocessors, and microcontrollers. Graduates from this program are prepared to enter the industry as assemblers, troubleshooters, calibration technicians, and field service technicians.

The course of study includes: basic electricity and electronics; digital electronics; microprocessors; and microcontrollers.

Arts & Sciences curriculum supports the technical coursework by enhancing the students' communication, mathematics, and critical thinking skills.

Credits earned in the Electronics Technology certificate directly transfer into Dunwoody's Industrial Controls & Robotics (ICON) (<https://catalog.dunwoody.edu/catalog-student-handbook/academic-programs/robotics-manufacturing/industrial-controls-robotics-icon-aas/>) or Electronics Technology (IELT) (<https://catalog.dunwoody.edu/catalog-student-handbook/academic-programs/robotics-manufacturing/electronics-technology-ielt-aas/>) associate's degree programs.

**Credential Earned:** Certificate

**Length of Program:** 1 year (2 semesters)

**Classes Offered:** Evening

**Available Starts:** Fall Semester; Spring Semester

## Program Outcomes

- Apply the concepts of basic electricity.
- Demonstrate required industry safety standards.
- Explain the operation of electronic devices.
- Troubleshoot circuits and systems using industry standard test equipment.
- Analyze electrical schematics and mechanical prints.
- Employ fundamental concepts of industrial electronics and process control.
- Apply concepts of analog and digital communication systems.
- Analyze the operation of microprocessors, micro-controllers, and computers.

## Degree Requirements

Code	Title	Credits
<b>General Requirements</b>		
MATH1000	Algebra & Trigonometry	3
<b>Technical Requirements</b>		
ELTT1100	Basic Electricity & Electronics Lab	2
ELTT1120	Basic Electricity & Electronics Theory	8
ELTT1200	Digital & Microprocessors Lab	2
ELTT1220	Digital & Microprocessors Theory	8
<b>Total Credits</b>		<b>23</b>

## Courses

### Descriptions

**ELTT1100 | Basic Electricity & Electronics Lab | Laboratory (2 Credits)**

Analyze, design, and build series, parallel and combination AC and DC circuits. Build and test semiconductor circuits, power supplies, transistor circuits using protoboards and various test equipment.

**Corequisite(s):** ELTT1120

**ELTT1120 | Basic Electricity & Electronics Theory | Lecture (8 Credits)**

Identification, recognition and calculations associated with basic electricity, including Ohm's Law, resistance, capacitance, inductance in AC and DC circuits, as well as solid state principles of diodes, power supplies and transistors.

**Corequisite(s):** ELTT1100 ELTT1110

**ELTT1200 | Digital & Microprocessors Lab | Laboratory (2 Credits)**

Design, build, and troubleshoot digital circuits. Debug and program microprocessors and microcontrollers for various operations and interface to external devices. Analyze digital and microprocessor circuits using industry standard test equipment.

**Prerequisite(s):** ELTT1100

**ELTT1220 | Digital & Microprocessors Theory | Lecture (8 Credits)**

Identification, recognition and calculations associated with combinational and sequential logic circuits as well as internal architecture of microprocessors and microcontrollers, programming, logic operations, memory mapping, addressing, data transfer, and system control.

**Prerequisite(s):** ELTT1120

**MATH1000 | Algebra & Trigonometry | Lecture (3 Credits)**

Real numbers and polynomials, exponents and radicals, fractional equations; proportions and linear equations; trigonometric functions, solutions of triangles, radians, trig functions graphs, vectors, and basic identities.

**General Education:** Mathematics