INDUSTRIAL CONTROLS & ROBOTICS

Program Description
The Industrial Controls & Robotics program provides evening students with the entry-level skills and theoretical knowledge to maintain the latest in automated manufacturing, packaging, and industrial robotic systems. Graduates from this program are prepared to enter the industry as machine designers, machine assemblers, electro-mechanical technicians, maintenance mechanics, and field service technicians.

The course of study includes: basic electricity and electronics, mechanical systems, electronic sensors, programmable logic controllers (PLCs), industrial robotics, motion-control systems, and advanced packaging and manufacturing systems.

The program's curriculum is aligned with standards set forth by the Packaging Machinery Manufacturers Institute (PMMI), the Institute of Packaging Professionals (IoPP), the Robotics Industry Association (RIA), the National Fire Protection Association (NFPA), and the Instrumentation Society of America (ISA) as well as other national trade organizations. Arts & Sciences curriculum supports the technical coursework by enhancing the students' communication, mathematics, and critical thinking skills. A shorter certificate option is also available.

Dunwoody College of Technology: a non-profit, private technical college since 1914.

Credential Earned
AAS Degree

Classes Offered
Evening

Length of Program
2 years (4 semesters)

Available Starts
Fall Semester; Spring Semester

Further Study
Bachelor's Completion Degree in Industrial Engineering Technology

How to Apply

Dunwoody.edu
612.374.5800
info@dunwoody.edu

Degree Requirements

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Placement Rate
100%*

Salary Data
$56,000* Annual Average Salary

*Courses required for the Industrial Controls certificate

AY2017-18 Revised: 4-4-17
Course Descriptions

ELTT1100 Basic Electricity & Electronics Lab, 2 cr.
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.

ELTT1120 Basic Electricity & Electronics Theory, 8 cr.
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.

MACH1000 Machine Shop Fundamentals, 2 cr.
Manufacturing of parts through layout and bench work, includes the use of band saws, drill presses, surface grinders, manual lathes and vertical mills. Basic principles in metal-cutting technology includes threading, tapers, knurling, boring, radi cutting and milling procedures such as squaring stock, the use of rotary table and the many other milling and turning operations.

MDES1110 Engineering Drawings with SolidWorks, 4 cr.
Creation of 3D solid models, assemblies and related engineering documentation using SolidWorks. Blueprint reading and application of ASME/ANSI standards to CAD drawings.

ASRO1220 Mechanical Transmission of Power Theory, 4 cr.
Identification, recognition and calculations associated with various components of machines including bearings, gears, cams, motors, clutches, cylinders (hydraulic and pneumatic), fluid systems, mechanical systems and other automation related components.

ASRO2100 Industrial Controls & PLCs Lab, 2 cr.
Installation, wiring, programming, operation, testing and troubleshooting programmable logic controllers. Interfacing programmable logic controllers with switches, sensors, motors, pneumatics, and other I/O devices. Set-up, configuration and troubleshooting inductive and capacitive proximity, photo-electric, temperature and other industrial sensors.

ASRO2120 Industrial Controls & PLCs Theory, 8 cr.
Wiring and programming fundamentals associated with programmable logic controllers. Identification, recognition and calculations associated with inductive and capacitive proximity, photo-electric, temperature and other industrial sensors.

ASRO2200 Automation & Robotics Lab, 2 cr.
Set up, configuration, programming and troubleshooting industrial robots to meet industry standards. Configuration and troubleshooting of installed automation and packaging equipment using machine schematics and related documentation.

ASRO2205 Automation & Robotics Theory, 8 cr.
Identification, recognition, programming and calculations associated with automation and packaging components, motion control, industrial robotics and related documentation.

MATH1000 Algebra & Trigonometry, 3 cr.
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.

MATH1250 Boolean Algebra, 3 cr.
Binary, octal and hexadecimal number systems. Boolean algebra and mapping.