AUTOMATED SYSTEMS & ROBOTICS

Program Description
The Automated Systems & Robotics program provides 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 assemblers, electro-mechanical technicians, maintenance mechanics, and field service engineers.

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.

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

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

Credential Earned
AAS Degree

Classes Offered
Day

Length of Program
2 years (4 semesters)

Available Starts
Fall Semester; Spring Semester

Further Study
Bachelor’s Completion Degree in Industrial Engineering Technology

Recent Employers
Bosch
Delkor Systems, Inc.
Buhler, Inc.
Westinghouse Electrical Corporation
PaR Systems, Inc.

Salary Data
$56,000*

Placement Rate
100%**

Common Job Titles
Maintenance Mechanic
Controls Engineer
Field Service Engineer
Assembler
Electro-Mechanical Technician

Degree Requirements
ELTT1110 Basic Electricity & Electronics Lab
ELTT1120 Basic Electricity & Electronics Theory
MDES1110 Engineering Drawings with SolidWorks
MACH1200 Machine Shop Fundamentals
ASRO1210 Mechanical Transmission of Power Lab
ASRO1220 Mechanical Transmission of Power Theory
ASRO2110 Industrial Controls & PLCs Lab
ASRO2120 Industrial Controls & PLCs Theory
ASRO2210 Automation & Packaging Lab
ASRO2220 Automation & Packaging Theory
ASRO2230 Industrial Robotics Lab
ASRO2240 Industrial Robotics Theory
ASRO2290 Industrial Internship/Practicum
MATH1500 Algebra, Trigonometry & Boolean Algebra
Arts & Sciences Elective
Humanities Elective
Communications Elective
Social Sciences Elective
Diversity Elective

How to Apply

dunwoody.edu
612.374.5800
info@dunwoody.edu

**Data reflects placement for AY2015-16 graduates indicating employment in their field of study within 6 months following graduation.
Full data calculations are available for review during College open hours Monday through Friday 8 a.m. to 4 p.m. CT at Career Services or contact careerservices@dunwoody.edu.
AY2017-18 Revised: 4.4.17
Course Descriptions

ELTT1110 Basic Electricity & Electronics Lab, 5 cr.
Analyze, design and build series, parallel and combination AC and DC circuits. Semiconductor circuits, power supplies, transistor circuits are built and tested 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.

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.

MACH1200 Machine Shop Fundamentals, 3 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, radii cutting and milling procedures such as squaring stock, the use of rotary table and the many other milling and turning operations.

ASRO1210 Mechanical Transmission of Power Lab, 2 cr.
Assembling, disassembling and observing applications of bearings, gears, cams, motors, clutches, cylinders (hydraulic and pneumatic), fluid systems, mechanical systems and other automation related components. Drawing and fabrication of simple components.

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.

ASRO2110 Industrial Controls & PLCs Lab, 5 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.

ASRO2210 Automation & Packaging Lab, 2 cr.
Set up, configuration and troubleshooting of installed automation and packaging equipment using machine schematics and related documentation.

ASRO2220 Automation & Packaging Theory, 3 cr.
Identification, recognition and calculations associated with automation and packaging components, motion control, electrical safety, documentation, motors, control circuits and related documentation. Investigation of packaging and automation career options and industry related skills.

ASRO2230 Industrial Robotics Lab, 2 cr.
Set up, configuration, programming and troubleshooting industrial robots to meet industry standards. Industry safety standards, programming methods, applications and interfacing of sensors and I/O devices.

ASRO2240 Industrial Robotics Theory, 3 cr.
Identification, recognition and calculations associated with industrial robotics including terminology, safety practices and procedures, application justifications, robot types, operation, program instructions and techniques, I/O device interfacing, end of arm tooling, system integration and troubleshooting.

ASRO2290 Industrial Internship/Practicum, 3 cr.
Internship or practicum option on various manufacturing topics: automation, electronics, robotics, mechanical systems, assembly, troubleshooting, research and/or field service.

MATH1500 Algebra, Trigonometry & Boolean Algebra, 5 cr.
Polynomials, proportions and linear equations. Trig functions, graphs, and vectors. Binary, octal and hexadecimal number systems. Boolean Algebra and mapping.