

# ELECTRO-MECHANICAL TECHNOLOGY

Associate Degree  
10-620-1

The study of ElectroMechanical Technology (Automated Systems) gives graduates the ability and skills to work with today's computer integrated systems and robotics. The student will acquire knowledge and the ability to build and service equipment that is in high demand. The student will learn problem-solving skills to build and repair equipment.

The demand for automated systems technicians is high and many area companies are hiring technicians to design, construct, and support their computer systems. Graduates from this program fill positions in companies that use computer-driven control systems and mechanisms. This program emphasizes programming, design, updating, servicing, and operation of automated equipment and robotics systems. The technician is involved with many stages and aspects of an automation system.

## Program Outcomes

- Perform work safely (TSA)
- Troubleshoot electrical and mechanical systems and devices Integrates safety protocol. (TSA)
- Repair electrical and mechanical systems (TSA)
- Communicate Technical Information (TSA)
- Integrate electrical and mechanical systems and devices (TSA)
- Operate power and hand tools and standard test equipment
- Diagnose a fault condition in a component or system
- Modify systems and components.
- Interpret specifications of schematics and procedure documentation

## Graduates Have Found Employment As

- Automation Engineering Technician
- Medical Electronics Technician
- Pharmaceutical Process Technician
- Electronics Process Technician
- Robotics Technician
- Programmable Controller Program/Technician
- Vision Systems Specialist
- Field Service Technician
- Electronic Service Technician
- Maintenance Service Technician
- Network Technician
- Fluid Power Technician
- Machine Repair Technician
- CNC Service Technician

View the entire course listing (<http://catalog.blackhawk.edu/courses>).

## General Education Courses Within Program

Semester 1		Credits
620-164	Safety 1	1

620-165	Safety 2	1
620-146	Mechanics 1	1
620-147	Mechanics 2	1
620-116	Fluid Power 1: Basic Pneumatics	1
620-117	Fluid Power 2: Basic Hydraulics	1
620-173	Blueprint Reading for Machine Prints	1
620-101	Fundamentals of DC circuits 1	1
620-102	Fundamentals of DC Circuits 2	1
620-109	Relay Logic	1
442-318	Introduction to Welding	1
804-115	College Technical Mathematics 1	5
620-171	Human Relations in the Industrial Setting	2
	Credits	18

### Semester 2

442-336	Shielded Metal Arc Welding 1	1
620-170	Valves, Gaskets and Seals	1
620-106	Electric Motors	1
620-168	Lathes	1
620-113	Fundamentals of AC circuits 1	1
620-166	Conveyor Systems 1	1
620-174	Mechanical Power Transmission	1
620-107	Variable Speed Drives	1
620-118	Fluid Power Applications	1
620-167	Conveyor Systems 2	1
620-124	Programmable Logic Controllers - PLCs	1
620-172	Machine Setup & Installation	1
620-169	Mills	1
620-134	Sensors	1
801-195	Written Communication	3
	Credits	17

### Semester 3

620-103	Fundamentals of DC Circuits 3	1
801-197	Technical Reporting	3
620-111	Programming Fundamentals 1	1
620-121	Programmable Automation Controllers (PACs) 1	1
620-114	Fundamentals of AC Circuits 2	1
620-112	Programming Fundamentals 2	1
620-122	Programmable Automation Controllers (PACs) 2	1
620-175	Servomechanisms	1
620-131	Solid State Devices 1	1
620-126	Robotics 1	1
	Credits	12

### Semester 4

809-196	Introduction to Sociology	3
809-198	Introduction to Psychology	3
620-141	Process Control 1	1

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620-142	Process Control 2	1
620-143	Process Control 3	1
620-132	Solid State Devices 2	1
620-127	Robotics 2	1
620-144	Human Machine Interfaces (HMI)	1
620-148	Industrial Integration	1
	Credits	13
	Total Credits	60

Associate Degrees and Technical Diplomas are part of a larger model of BTC's Career Pathways which link related academic programs in sequence. Each program within a career pathway offers direct job preparation and a path to the next level of academic programming. To view the connected program model, visit the Electro-Mechanical Technology Career Path (<http://catalog.blackhawk.edu/academics/associate-degrees/electro-mechanical-technician/ElectroMechanicalCareerPath.pdf>) (PDF).