Engineering Technology w/Emphasis in Mechatronics

Award Type: Associate in Science

The associate in science degree offers students a comprehensive program of study in the software, electronics, and mechanics of technologies used in automation (process control), robotics and machine design and maintenance.

The graduate of the Associate in Science in Engineering Technology w/Emphasis in Mechatronics will:

- Demonstrate a fundamental mastery of knowledge and the use of electronic equipment in electrical, digital and analog circuits.
- Use computer simulation and design software to conduct, analyze and interpret electrical, digital and analog circuits.
- Make calculations involving various electrical laws, formulas and principles for predicting circuit parameters using algebra and trigonometry required for electronics.
- Use research strategies to acquire information pertinent to the solution of electronic circuits and systems.
- Write technical laboratory reports with conclusions.
- Demonstrate learned skills with a capstone project requiring you to design, build and evaluate a piece of electronic equipment.
- Apply current knowledge and adapt to emerging applications of automation and control.

Program Requirements

A major of 49 units is required for the associate in science degree and certificate.

Required core courses (34 units):

Course Number	Course Title	Units
CS 111	Fundamentals of Programming 1	4.0
EL 104	Introduction to Robotics and Mechatronics	3.0
	or	
CEL 104	Introduction to Robotics and Mechatronics	3.0
	or	
ET 104	Introduction to Robotics and Mechatronics	3.0
EL 118	Fundamentals of DC and AC Circuits Analysis	3.0
EL 119	Fundamentals of DC and AC Circuits Analysis Laboratory	2.0
EL 125	Digital Devices and Circuits	3.0
EL 122	Electronic Devices and Circuits	3.0
EL 126	Digital Devices and Circuits Lab	2.0
EL 123	Electronic Devices and Circuits Laboratory	2.0
EL 146	Electronic Product Design, Fabrication and Documentation	2.0
ET 140	Engineering Drawing	3.0
MT 109	Survey of Machining and Manufacturing	4.0
MT 117	Print Reading and Interpretation	3.0
	or	
WLDT 306	Layout and Fabrication Interpretation	3.0

Plus a minimum of 15 units selected from the following:

Course Number	Course Title	Units
EL 105	PC Preventive Maintenance and Upgrading	3.0
	or	
EL 320	A+ Certification	2.5
EL 106	Networking Essentials 1	3.0

EL 107	Networking Essentials 2	3.0
EL 135	Electronic Measurement and Instrumentation	3.0
EL 136	Electronics Measurement and Instrumentation Laboratory	2.0
EL 128	Introduction to Renewable Energy	3.0
or		
CEL 128	Introduction to Renewable Energy	3.0
or		
ET 128	Intro to Renewable Energy	3.0
EL 131	Programmable Logic Controllers and Control Design	3.0
or		
CEL 131	Programmable Logic Controllers and Control Design	3.0
or		
ET 131	Programmable Logic Controllers and Control Design	3.0
EL 133	Mechatronic Systems 1	3.0
or		
CEL 133	Mechatronic Systems 1	3.0
or		
ET 133	Mechatronic Systems 1	3.0
EL 139	Electrical Power, Motors, and Controls	3.0
or		
CEL 139	Electrical Power, Motors, and Controls	3.0
or		
ET 139	Electrical Power, Motors, and Controls	3.0
EL 162	Fluid Power And Control	2.0
or		
CEL 162	Fluid Power and Control	2.0
or		
ET 162	Fluid Power and Control	2.0
ET 100	Computer Aided Drafting and Design	3.0
PHYS 100	Concepts In Physics	3.0
or		
PHYS 110	Introductory Physics	3.0
or		
PHSC 111	Matter, Energy and Molecules	4.0
WLDT 106	Beginning Welding	3.0
WLDT 107	Advanced Welding	3.0
WLDT 307	G.M.A.W. Welding	3.0
or		
WLDT 308	T.I.G. Welding	3.0
WLDT 315	Metal Fabrication	4.0