MECHATRONICS, ASSOCIATE

Program Description

Mechatronics is an interdisciplinary area of engineering technology that combines mechanical, electrical, computer, robotics, and computer science. Mechatronics Engineering technologists use a combination of mechanical, electrical, computer, software, and robotics skills to work with technologies such as automated and computer-integrated manufacturing systems, industrial robots, mobile robots, smart sensors, actuators, and control systems.

The Associate degree program in Mechatronics is built upon the foundation of our BS degree in Mechatronics. Both programs were developed at Lake State based on the need for our engineering technology graduates to serve industrial partners in an environment that is rapidly progressing toward digitally-applied technologies. Similar to our other engineering technology programs, this Mechatronics program will build upon a solid foundation of courses in mathematics, sciences, English, humanities, and the social sciences. In addition to the theoretical background presented in the program's core courses by full-time faculty members in small class settings, the students will have the opportunity to strengthen their hands-on skills in laboratory courses. Mechatronics students will gain valuable experience working with industry standard equipment including industrial robots, CNC and manual machining centers and sensors.

Program Learning Outcomes

- Engineering System Analysis: Students will be able to analyze electro-mechanical systems by applying math, science, and/or engineering equations and techniques.
- Communication: Students will be able to communicate in a technical environment.
- Use of Technical Tools: Students will be able to use technical tools to solve engineering problems.

Requirements

Code	Title	Hours
Department Requirements		
CHEM 108 & CHEM 109	Applied Chemistry and Applied Chemistry Lab (1)	3
or CHEM 115	General Chemistry I	
EGEE 125	Digital Fundamentals	4
EGET 270	Applied Electricity	4
or EGEE 210	Circuit Analysis	
EGET 275	Applied Electronics	4
EGME 110	Manufacturing Processes	3
EGME 141	Solid Modeling	3
EGNR 101	Introduction to Engineering	2
EGRS 105	Robotics Applications & Trends	1
EGRS 215	Introduction to Robotics	2
EGNR 265	C Programming [1]	3
or EGNR 140	Linear Alg Num Apps Engineers	
MATH 111	College Algebra (C or better required)	3
MATH 112	Calculus Business/Life Science	4
or MATH 151	Calculus I	
MATH 131	College Trigonometry (C or better required)	3
MATH 207	Prin of Statistical Methods	3
or MATH 308	Probability and Math Stats	
PHYS 221	Principles of Physics I	4
or PHYS 231	Appl Phys Engineer/Scientist I	
Technical Elective (2-3 Credits required from the following courses):		**2-3**
CSCI 105	Intro to Computer Programming	
CSCI 221	Computer Networks (or higher level CSCI course)	
EGEE 250	Microcontroller Fundamentals (or higher level EGEE course)	
EGME 240	Assembly Modeling and GD&T (or higher level EGME course)	
EGMT 216	CAM with CNC Applications (or higher level EGMT course)	
EGNR 140	Linear Alg Num Apps Engineers (or higher level EGNR course) [1]	
EGRS 235	Industry 4.0 (or higher level EGRS course)	
PHYS 222	Principles of Physics II (or higher level PHYS course)	
or PHYS 232	App Phy Engineer Scientist II	
Total Hours		**48-49**

[1] For students also in a BS program, it is recommended to take EGNR 140 and EGNR 265. Furthermore, a C or better will be required in EGNR 265.

General Education: All LSSU Associate's degree candidates must complete the LSSU General Education Requirements.

A minimum of 62 credits (at the 100 level or higher) must be earned for graduation with a cumulative gpa of 2.00 or higher. A gpa of 2.00 or higher is also required in your Major, as well as in your General Education Requirements.