MECHATRONICS CERTIFICATE OF ACHIEVEMENT

This certificate is designed for students interested in designing automatic electromechanical devices and systems. The curriculum is intended primarily for students interested in working in advanced manufacturing. It also provides the foundation for further studies in the skills required for the Internet of Things (physical computing and control systems)..

Program Learning Outcomes

Upon successful completion of this certificate, students will be able to:

- Write computer programs in high-level languages such as C++ and, when appropriate, in assembly language to control the operation of a microcontroller. In particular, students will be able to apply the following microcontroller capabilities: memory-mapped I/O (input/output), analog-to-digital (A/D) conversion, and volatile and non-volatile memory.
- Design automatic devices and control systems which can respond to inputs from sensors with appropriate outputs in the form of motion, light, and sound.
- Design mechanical components and devices, and create prototype versions of them.
- Combine the above capabilities to design integrated electro-mechanical devices of arbitrary complexity.

Certificate Requirements

Code	Title	Units
CADD-125/ENGR-125	Solid Modeling Design	3
or CADD-129/ENGR-129	Engineering Solid Modeling	
CS-181	Introduction to C++ Programming	4
CIS-267	Directed Work Experience in CIS	1-4
or ENGR-182	Work Experience in Engineering Technology	
ENGR-100	Introduction to Engineering and Design	4
ET-110	Introduction to Electricity and Electronics	4
Total Units		**16-19**

Certificate of Achievement

Students who complete the requirements above qualify for a Certificate in Mechatronics. An official request must be filed with the Admissions and Records Office prior to the deadline as stated in the Academic Calendar.