INDUSTRIAL MECHATRONICS

The certificate program will have an interdisciplinary curriculum rich in addressing both fundamental and emerging areas of the field. The curriculum will rely solely n regularly offered courses of existing graduate programs of the CECS and other colleges. This will assure (i) depth and breadth of the curriculum, (ii) consistent opportunity of timely completion of the program, (iii) implementation of the program not requiring any additional investment. The program will have no require or core courses and present minimal barriers for credit transfer between the program and the existing engineering graduate degree programs.

The certificate can be completed entirely on campus, entirely online, or through a combination of on-campus and online courses.

Graduate certificate in Industrial Mechatronics. This certificate program provides fundamental principles of mechatronics, with emphasis on application of these principles in emerging and classical areas of manufacturing and automotive technology. It covers such topics as mechatronics, robotics, advanced controls, and automotive powertrain. Only courses completed with grade B or better will be counted toward the certificate. A minimum certificate grade point average of 3.0 is required to obtain the certificate. The program requires 12 credit hours, which can be selected from the following courses:

Coursework Requirements

Code	Title	Credit Hours
Select 12 credits from the following:		
AENG 505	Intro to Embedded Systems	3
or ECE 554	Embedded Systems	
AENG 547	Automotive Powertrains I	3
or ME 547	Automotive Powertrains I	
IMSE 5825	Industrial Controls	3
ECE 517	Adv Pwr Electrncs&Motor Drvs	3
ECE 545	Intro Robot Syst	3
ECE 579	Intelligent Systems	3
ECE 588	Robot Vision	3
ME 564	Linear Systems Control	3
or ECE 560	Modern Control Theory	
ME 565	Mechatronics	3
or ECE 566	Mechatronics	

Double-counting (application of the earned credits toward both the proposed certificate degree and MSE programs of the University of Michigan – Dearborn) will be allowed provided the following conditions are met.

- Any number of credits earned by a student in one of the MSE programs of the University of Michigan – Dearborn can also be applied toward the certificate program if
  - The course is in the approved curriculum of the certificate program
  - Grade B or better is earned in the course
  - Completion of the course occurred not more than 5 years before the date of application for double-counting
  - The student applying for double-counting has completed at least 6 credits in the graduate degree program
- Any number of credits earned by a student in the proposed certificate program can be applied toward any MSE program offered by the Department of Mechanical Engineering (currently, MSE in Mechanical Engineering, MSE in Automotive Engineering, MSE in Bioengineering) and future such programs if
  - The course is in the approved curriculum of the graduate program
  - Grade B or better is earned in the course
  - Completion of the course occurred not more than 5 years before the date of application for double-counting.