

# GRADUATE CERTIFICATE IN MECHATRONICS

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## OVERVIEW

*Adam Schroeder, Program Director*

The Mechatronics Certificate Program is designed for mechanical engineers already in the workforce to introduce mechatronics and the relevant sub-topics including programming, electrical hardware, dynamics and controls. The certificate requires completion of five mechatronics-related courses (15 cr hr), taken one course per semester, starting in the fall. The courses have thus far been taught in classrooms at The University of Toledo and students have also taken these courses remotely. This certificate will build the requisite skills that engineers need to conceptualize, design, build and test mechatronic devices, which have largely replaced traditional mechanical-only devices.

## ADMISSION REQUIREMENTS

Applicants for the program are evaluated based on the admission requirements of the M.S. of Mechanical Engineering program.

## PROGRAM REQUIREMENTS

**Mechatronics certificate (15 cr hr) - Courses taken in the following categories:**

Code	Title	Hours
<b>1. Control Area</b>		<b>3</b>
MIME 5420	Modeling and Control of Engineering Systems	
MIME 5430	Advanced Automotive Control Systems	
<b>2. Programming Area</b>		<b>3</b>
MIME 5460	Advanced MATLAB for Engineers	
<b>3. Hardware Area</b>		<b>3</b>
EECS 5480	Power Electronics 1	
Other graduate level courses as approved by the program director		
<b>4. Project</b>		<b>3</b>
MIME 5440	Advanced Mechatronics	
<b>5. Elective</b>		<b>3</b>
MIME 5450	Advanced Automation Design	
MIME 5420	Modeling and Control of Engineering Systems	
MIME 5430	Advanced Automotive Control Systems	
Other graduate level course as approved by the program director		
<b>Total Hours</b>		<b>15</b>

- 1) Demonstrate technical proficiency in mechatronics topics.
- 2) Solve problems using mathematics and engineering knowledge in mechatronics
- 3) Explain course projects in mechatronics clearly and concisely in written and oral formats