

GRADUATE CERTIFICATE IN MANUFACTURING

OVERVIEW

Dr. Hongyan Zhang, program director

Manufacturing is undergoing systemic changes as a result of technological advances and reshoring of manufacturing to the U.S. Adoption and integration of additive manufacturing technologies is changing the way products are made and opening product opportunities that were previously unfeasible. New manufacturing technologies, coupled with internet of things (IOT) and Green initiatives that reduce raw material costs and promote a circular economy, are shaping the manufacturing landscape of today. The graduate certificate in manufacturing will equip graduates with the knowledge and skills they need in this rapidly changing environment and enable employers to quickly identify graduates with the manufacturing expertise that they need.

Benefits

Many industries are seeking to upgrade the skills of their workforce as methods of manufacturing expand to include additive manufacturing, advanced automation, and automated assembly. Replacing legacy processes with new manufacturing methods also requires re-imagining engineering design for production with these new technologies.

The certificate can be stacked with another certificate for additional credentials or to complete an M.S. degree.

ADMISSION REQUIREMENTS

Applicants for the program are evaluated based on the admission requirements of the M.S. of mechanical engineering program. Students currently enrolled in a graduate program can add the certificate to their matriculation - contact the College of Graduate Studies for more information.

Application requirements:

- **Degree:** Applicants must hold a four-year bachelor's degree from a regionally accredited college or university
- **GPA:** Applicants must have at least a 3.0/4.0 grade point average from previous undergraduate coursework or a 3.3/4.0 for previous graduate coursework
- **Application:** UToledo application required
- **GRE:** Not required
- **Transcripts:** Required
- **Statement of Purpose:** Required
- **Letters of Recommendation:** 2 minimum; 3 preferred

- **Proof of English language proficiency:** Required for students from non-English speaking countries. See University graduate admissions for minimum test score requirements and exceptions.

Application priority deadlines for admission:

- **Fall:** No deadline
- **Spring:** Contact program
- **Summer:** Contact program

PROGRAM REQUIREMENTS

Code	Title	Hours
<i>Required courses (select 3)</i>		9
MIME 5060	Manufacturing Engineering	
MIME 5830	Additive Manufacturing	
MIME 6720	Design of Experiments	
MIME 6810	Assembly And Joining Processes	
<i>Elective courses (select 2)</i>		6
MIME 5080	Operations Research I	
MIME 5100	Manufacturing Systems Simulation	
MIME 5690	Reliability	
MIME 5800	Design For Manufacturability	
MIME 5820	Sustainability Analysis and Design	
MIME 6800	Advanced Manufacturing Systems Engineering	
Total Hours		15

- PLO 1. Be hired as practicing engineers in industries and government laboratories that are involved in the design, simulation, implementation, testing, analysis, and control of manufacturing processes and systems.
- PLO 2. Be prepared to continue their education with an advanced degree in mechanical engineering, industrial engineering, or other related field of engineering.
- PLO 3. Be prepared to continue their studies in other graduate programs to pursue careers in business or law.