

# MATERIALS AND MANUFACTURING

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The Department of Mechanical Engineering offers an undergraduate certificate program in the area of Materials and Manufacturing. The program is based on the elective courses of the bachelor of science in engineering degree in mechanical engineering (BSE-ME) program regularly offered by the Department of Mechanical Engineering. The earned credit hours can be applied simultaneously to the certificate program and an undergraduate degree program at the University of Michigan - Dearborn.

The program can be completely entirely on campus, with some courses occasionally offered in the asynchronous online mode.

Engineering materials and manufacturing are important components of mechanical engineering. The certificate program offers undergraduate students the opportunity to deepen their understanding of this field and receive official recognition.

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.

## Certificate Requirements

The certificate program requires a minimum of 9 credit hours.

Code	Title	Credit Hours
<b>Select a minimum of 9 credit hours from the following:</b>		
ME 460	Design for Manufacturing	3
ME 481	Manufacturing Processes II	3
ME 483	Dsgn Cons in Poly and Comp Mat	3
ME 4550	Computational Uncertainty Quantification for Engineering Applications	3
ME 4910	Degradation of Materials	3
ME 4950	Digital Manufacturing and Product Innovation	3
ENGR 350	Nanoscience and Nanotechnology	4
BENG 375	Biomaterial Tissue Engrg	4

Notes:

1. Up to 4 credit hours can be transferred from a degree-granting program at another institution.
2. Pass/fail courses are not allowed.
3. All applicable credits earned in the certificate program can be applied toward one University of Michigan – Dearborn degree program.
4. Credits earned in the certificate program cannot be applied toward another certificate program.