

## Michigan Technological University

### Minor in Manufacturing

Program Code EMMF, Academic Year 2022-23

College of Engineering

Total Credits Required: 18

#### Required Courses: 6 Credits

- EC 3400 Economic Decision Analysis (3) *Prereqs: UN1015 and UN1025*
- MEEM 3600 Introduction to Manufacturing (3) *Prereqs: MEEM2150 and (MY2100 or MSE2100)*

#### Elective Courses: 12 credits

##### *Process Courses: Select at least 3 credits*

- EE/MSE 4240 Introduction to MEMS (4) *Prereqs: none*
- EE/MSE 4777 Open-Source 3-D Printing (3) *Prereqs: none*
- ENT 3966 Design for Manufacturing (1) *Prereqs: ENG1102*
- MEEM 4610 Advanced Machining Processes (3) *Prereqs: MEEM2500 or MEEM3600*
- MEEM 4625 Precision Manuf. & Metrology (3) *Prereqs: (MEEM3700 and MEEM3502) or MEEM3600*
- MEEM 4635 Design with Plastics (3) *Prereqs: (MY2100 or MSE2100) and MEEM2150 and (MEEM3201 or CM3110)*
- MEEM 4640 Micromanufacturing Processes (3) *Prereqs: MEEM3400 and MEEM3600*
- MEEM 4695 Additive Manufacturing (3) *Prereqs: Prereqs: MEEM3600*
- MEEM 5401 Design for Reliability (3) *Prereqs: MEEM4901 or ENT4950*
- MEEM 5670 Experimental Design in Engineering (3) *Prereqs: MEEM4901 or ENT4950*
- MSE 4120 Material & Processing Selection in Design (3) *Prereqs: MY2100 or MSE2100 or BE2800*
- MSE 4310 Principles of Metal Casting (3) *Prereqs: MY2100 or MSE2100 or BE2800*

##### *System Courses: Select at least 3 credits*

- ENT 3959 Fundamentals of Six Sigma 1 (1) *Prereqs: none*
- ENT 3967 Six Sigma II (1) *Prereqs: none*
- MEEM 4430 Advanced CAD and CAM Methods (4) *Prereqs: ENG1102 and MEEM3600*
- MEEM 4630 Human Factors (3) *Prereqs: none*
- MEEM 4650 Quality Engineering (3) *Prereqs: MEEM3600 and (MA3710 or MA3720 or MA2710 or MA2720)*
- MEEM 4655 Production Planning (3) *Prereqs: MEEM3600*
- MEEM 4675 Design Material Handling Systems (3) *Prereqs: MEEM2150*
- MEEM 4705 Intro Robotics & Mechatronics (4) *Prereqs: MEEM3750*
- MEEM 4707 Autonomous Systems (3) *Prereqs: MEEM3750 or MEEM4700 or MEEM4775*
- MEEM 5655 or MEEM 4665 Intro to Lean Manufacturing (3) *Prereqs: MEEM3600(C)*
- MEEM 5680 Optimization I (3) *Prereqs: MEEM4901 or ENT4950*