

Michigan Technological University

Minor in Electronic Materials

Program Code MSEM, Academic Year 2024-25

College of Engineering

Total Credits Required: 18

Required Courses: 9 Credits

- EE 3290 Photonic Materials Devices and Applications (4) *Prereqs: EE2190 or EE3140 or PH2400*
 - or MSE 4292 Light and Photonic Materials (3) *Prereqs: EE2190 or EE3140 or PH2200*
- MSE 2100 Intro to Materials Science & Engineering (3) *Prereqs: CH1112 or CH1122 or (CH1150 and CH1151) or (CH1160 and CH1161)*
- MSE 3150 Intro to Semiconductor Materials & Devices (3) *Prereqs: MA2160 and PH2200*
 - or MSE 3160 Electronic, Magnetic, Optical, and Thermal Properties of Materials (3) *Prereqs: PH2200*

Elective Courses: 9 credits

- EE 3140 Electromagnetism (3) *Prereqs: PH2200 and MA3160 and (EE2110 or EE2112)*
- MSE 3120 Materials Characterization I (4) *Prereqs: MY2110 or MSE2110*
- MSE 3130 Materials Characterization II (4) *Prereqs: MY2100 or MSE2100 or BE2800*
- MSE 4410 Science of Ceramic Materials (3) *Prereqs: MY2100 or MSE2100 or BE2800*
- MSE 4530 Scanning Electron Microscopy (3) *Prereqs: none*
- MSE/EE 4240 Introduction to MEMS (4) *Prereqs: none*
- MSE 4990 Undergraduate Research (1-3) *Prereqs: none*
- MSE/EE 5430 Electronic Materials (3) *Prereqs: none*
- MSE/EE 5460 Solid State Devices (3) *Prereqs: none*
- MSE/EE 5470 Semiconductor Fabrication (3) *Prereqs: none*
- MSE/EE 5490 Solar Photovoltaic Technology (3) *Prereqs: none*
- PH 3480 Advanced Physics Laboratory (2) *Prereqs: PH3210*