

## Michigan Technological University

### Minor in Mineral Processing

Program Code CMMP, Academic Year 2023-24

Department of Chemical Engineering

Total Credits Required: 18

#### Required Mineral Processing and Mineralogy Courses: 7 credits

- CM 2200 Intro to Minerals & Materials (3) *Prereqs: none*
- CM 3830 Mineral Processing and Extraction Lab (1) *Prereqs: CM2110(C) or CM2200(C)*
- GE 2300 Mineral Science (3) *Prereqs: CH1000 or CH1112 or (CH1150 and CH1151)*

#### Thermodynamics Courses: 1 course for 4 credits

- CM 3230 Thermodynamics for Chem Engineering (4) *Prereqs: CM2110 and MA2160 and PH2100*
- CEE 3200 Thermo/Fluid Mechanics (4) *Prereqs: CH1150 and CH1151 and PH2100 and ENG1102 and MA2160*
- MEEM 3201 Intro Fluid Mechanics & Heat Transfer (4) *Prereqs: MEEM2201 and MEEM2911 and MA3160*
- MSE 3100 Materials Processing I (4) *Prereqs: (MY2100 or MSE2100 or BE2800) and MA2160*

#### Elective Courses: select remaining 7 credits

- CM 3825 Sampling, Statistics, and Instrumentation (2) *Prereqs: none*
- CM 4020 Undergrad Research in Mineral Processing Engineering (1-3) *Prereqs: none*
- CM 4505 Particle Technology (3) *Prereqs: none*
- CM 4510 Interfacial Engineering (3) *Prereqs: CH3510*
- CM/MSE 4740 Hydrometallurgy/Pyrometallurgy (4) *Prereqs: CH1122 or (CH1160 and CH1161)*
- EC 4630 Mineral Industry Economics (3) *Prereqs: EC2001 and UN1015 and (UN1025 or 3000-level Mod. Language)*
- ENT XXXX Enterprise Project Work (1-3) *Topic must be approved by minor academic advisor*
- GE 3440 Drilling and Blasting (4) *Prereqs: GE2020 and PH2100 and MA2160*
- GE 4360 Bulk Materials Dynamics & Engineering (4) *Prereqs: PH2100 and GE2320 and ENG2120*
- MSE 3120 Materials Characterization I (4) *Prereqs: MSE2110 or MY2110*