

Michigan Technological University**Minor in Polymer Science and Engineering**

Program Code ECMM, Academic Year 2021-22

Department of Chemical Engineering

Total Credits Required: 18

Introduction to Polymers Course (Select one course): 3 credits

Course	Credits
BE 4300 Polymeric Biomaterials <i>Prereqs: BE3800</i>	3
CM/CH 4610 Introduction to Polymer Science <i>Prereqs: CH1122 or (CH1160 and CH1161)</i>	3
MSE 4110 Introduction to Polymer Engineering <i>Prereq: MSE2100</i>	3

Chemistry or Engineering Courses (Select one set of classes): 3 to 6 credits

Course	Credits
BE 3550 Fluid Mechanics <i>Prereqs: CH1150 and ENG1102 and MA2160 and PH2100</i>	4
CH 2410 Organic Chemistry I (3) <i>Prereqs: CH1122 or (CH1160 and CH1161)</i> and CH 2420 Organic Chemistry II (3) <i>Prereqs: CH2410</i>	6
CM 3110 Transport and Unit Operations I <i>Prereqs: CM2110 and (MA3520 or MA3521 or MA3530 or MA3560) and MA3160 and PH2100</i>	3
ENG 3200 Thermodynamics/Fluid Mech <i>Prereqs: MA2160 and (CH1112 or (CH1150 and CH1151)) and PH2100 and ENG1102</i>	4
MEEM 3201 Intro Fluid Mechanics & Heat Transfer <i>Prereqs: MEEM2201 and MEEM2911 and (MA3520 or MA3521 or MA3530 or MA3560)</i>	4
MSE 3110 Materials Processing II <i>Prereqs: MSE2110 and MSE3100 and (MA3520 or MA3521 or MA3530 or MA3560)</i>	4

Elective Courses (Select remaining): 9 to 12 credits

Course	Credits
BE 3300 Biomechanics I: Statics and Dynamics (3) <i>Prereqs: BE2400 and (MA2321 or MA2320 or MA2330) and (MA3521 or MA3520 or MA3530) and BL2010</i> or MEEM 2150 Mechanics of Materials (3) <i>Prereq: MEEM 2110</i>	3
BE 4335 Smart Polymers <i>Prereqs: BE3350 and BE3800</i>	3
CH/CM 4620 Polymer Chemistry <i>Prereqs: CH2420</i>	3
CH 4710 Biomolecular Chemistry I <i>Prereqs: CH2420</i>	3
CM 4060 UG Research in Polymer Engineering <i>Prereqs: none</i>	1-6
CM 4650 Polymer Rheology <i>Prereqs: (CM3110 or MEEM3210 or ENG3200 or MSE3100 or CE3600) and (MA3520 or MA3521 or MA3530 or MA3560)</i>	3
ENG 4515 Introduction to Sustainability and Resilience <i>Polymer-related term project required. Topic must be approved by minor advisor.</i>	3
ENT XXXX Enterprise Project Work <i>Topic must be approved by minor academic advisor</i>	1-3
MEEM 4170 Failure of Materials in Mech <i>Prereq: MEEM3501 or MEEM3400</i>	3
MEEM 4635 Design with Plastics <i>Prereqs: MSE2100 and MEEM2150 and (MEEM3210 and MEEM3230(C) or CM3110)</i>	3
MSE 4430 Composite Materials <i>Prereqs: MSE2100</i>	3
XX xxxx Undergraduate Research <i>Topic must be approved by minor academic advisor</i>	1-6