

## MINOR IN POLYMERS AND SOFT MATTER

Polymers and soft materials are critical components of existing and next-generation technologies. The Minor in Polymers and Soft Matter (MPSM) is designed to equip students with the basic knowledge of polymer science and engineering required to solve problems in this diverse and essential field. Students pursuing the Minor complete four foundational subjects focusing on organic chemistry, polymer physics, and polymer engineering; a half-subject (6 units) on the basics of ethical guidelines for research; and one elective subject or approved UROP experience. Only one subject taken for the Minor in Polymers and Soft Matter can also count toward a student's major or other minor.

### Required Subjects

3.016	Computational Methods for Materials Scientists and Engineers	12
or 18.03	Differential Equations	
3.063	Polymer Physics	12
5.12	Organic Chemistry I	12
10.01	Ethics for Engineers	6
<i>Select one of the following:</i> <sup>1</sup>		12-15
2.001	Mechanics and Materials I	
3.012	Fundamentals of Materials Science and Engineering	
5.60	Thermodynamics and Kinetics	
10.10	Introduction to Chemical Engineering	
20.110[J]	Thermodynamics of Biomolecular Systems	

### Electives<sup>2</sup>

<i>Select one of the following:</i> <sup>3</sup>		9-15
2.001	Mechanics and Materials I <sup>1</sup>	
2.627	Fundamentals of Photovoltaics	
3.012	Fundamentals of Materials Science and Engineering <sup>1</sup>	
3.032	Mechanical Behavior of Materials	
3.034	Organic and Biomaterials Chemistry	
3.055[J]	Biomaterials Science and Engineering	
5.07[J]	Biological Chemistry I	
5.13	Organic Chemistry II	
5.43	Advanced Organic Chemistry	
5.60	Thermodynamics and Kinetics <sup>1</sup>	
10.00	Molecule Builders	
10.10	Introduction to Chemical Engineering <sup>1</sup>	
10.443	Future Medicine: Drug Delivery, Therapeutics, and Diagnostics	

20.110[J] Thermodynamics of Biomolecular Systems

Total Units 63-72

<sup>1</sup> These subjects can count as part of the required subjects or as restricted electives, but not both. Students majoring in Course 2, 2-A, or 2-OE may not count 2.001 toward the minor. Students majoring in Course 3, 3-A, or 3-C may not count 3.012 toward the minor. Students majoring in Course 5 may not count 5.60 toward the minor. Students majoring in Course 10, 10-B, 10-C, or 10-ENG may not count 10.10 toward the minor. Students majoring in Course 20 may not count 20.110[J] toward the minor.

<sup>2</sup> Students must select an elective subject that is outside of the major field of study as approved by their minor advisor. As a general guideline, the elective should be from outside of the student's major department.

<sup>3</sup> Students may substitute a one-semester UROP (12 units) in an area of research relevant to polymers and soft matter science or engineering. UROP must be approved by minor advisor.

Further information on the minor can be obtained from Professor Jeremiah A. Johnson ([jaj2109@mit.edu](mailto:jaj2109@mit.edu)), Room 18-296, 617-253-1819.