POLYMER SCIENCE, MINOR

Requirements for a minor may be completed at any campus location offering the specified courses for the minor. Students may not change from a campus that offers their major to a campus that does not offer their major for the purpose of completing a minor.

Program Description

The goal of the Polymer Science minor is to produce graduates who have a first-hand knowledge of the relationships between the synthesis, structure, properties, and processing of polymer materials. Students are required to take MATSE 443, MATSE 441; MATSE 445; MATSE 446; MATSE 447 which provide a broad overview of the subject, then select 3 credits chosen from a suite of courses that deal with polymer synthesis, microstructure and morphology, properties, and processing.

What is Polymer Science?

Polymer scientists investigate long-chain molecules, which include plastics, cellulose (found in trees and paper), DNA, and more. Polymers have unique chemical and physical properties; understanding these properties involves aspects of organic chemistry, physical chemistry, analytical chemistry, contemporary physics, chemical engineering, mechanical engineering, and electrical engineering.

You Might Like This Program If...

• You like investigating polymer materials at the micrometer and nanometer scales.
• You enjoy combining a variety of physical and biological sciences to understand how organic molecules behave.
• You are interested in pursuing a career in polymer materials design, or the process of designing polymer materials for specific applications.

Program Requirements

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<tr>
<th>Requirement</th>
<th>Credits</th>
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<tbody>
<tr>
<td>Requirements for the Minor</td>
<td>23</td>
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Requirements for the Minor

A grade of C or better is required for all courses in the minor, as specified by Senate Policy 59-10 (http://senate.psu.edu/policies-and-rules-for-undergraduate-students/59-00-minors-and-certificates/#59-10).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>CHEM 210</td>
<td>Organic Chemistry I</td>
<td>3</td>
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<tr>
<td>MATH 231</td>
<td>Calculus of Several Variables</td>
<td>2</td>
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<tr>
<td>MATSE 443</td>
<td>Introduction to the Materials Science of Polymers</td>
<td>3</td>
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<tr>
<td>BMB 474</td>
<td>Analytical Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>EMCH 446</td>
<td>Mechanics of Viscoelastic Materials</td>
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<tr>
<td>MATSE 447</td>
<td>Rheology and Processing of Polymers</td>
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<tr>
<td>MATSE 473</td>
<td>Polymeric Materials Laboratory–Synthesis</td>
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<tr>
<td>MATSE 474</td>
<td>Polymeric Materials Laboratory–Characterization</td>
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<tr>
<td>MATSE 494W</td>
<td>Research and Design Senior Project</td>
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MATSE 496 Independent Studies

Select 12 credits of the following:

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<thead>
<tr>
<th>Code</th>
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<tbody>
<tr>
<td>MATSE 441</td>
<td>Polymeric Materials I</td>
<td></td>
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<tr>
<td>MATSE 442</td>
<td>Solid State Properties of Polymeric Materials</td>
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<tr>
<td>MATSE 445</td>
<td>Thermodynamics, Microstructure, and Characterization of Polymers</td>
<td></td>
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<tr>
<td>MATSE 446</td>
<td>Mechanical and Electrical Properties of Polymers and Composites</td>
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Academic Advising

The objectives of the university's academic advising program are to help advisees identify and achieve their academic goals, to promote their intellectual discovery, and to encourage students to take advantage of both in-and out-of class educational opportunities in order that they become self-directed learners and decision makers.

Both advisers and advisees share responsibility for making the advising relationship succeed. By encouraging their advisees to become engaged in their education, to meet their educational goals, and to develop the habit of learning, advisers assume a significant educational role. The advisee's unit of enrollment will provide each advisee with a primary academic adviser, the information needed to plan the chosen program of study, and referrals to other specialized resources.

READ SENATE POLICY 32-00: ADVISING POLICY (http://senate.psu.edu/policies-and-rules-for-undergraduate-students/32-00-advising-policy)

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