### Undergraduate Level Course Requirements

At least 47 credit hours in the department including:

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>3450:221</td>
<td>Analytic Geometry-Calculus I</td>
<td>4.0</td>
</tr>
<tr>
<td>3450:222</td>
<td>Analytic Geometry-Calculus II</td>
<td>4.0</td>
</tr>
<tr>
<td>3450:223</td>
<td>Analytic Geometry-Calculus III</td>
<td>4.0</td>
</tr>
<tr>
<td>3450:307</td>
<td>Fundamentals of Advanced Mathematics</td>
<td>3.0</td>
</tr>
<tr>
<td>3450:312</td>
<td>Linear Algebra</td>
<td>3.0</td>
</tr>
<tr>
<td>3450:335</td>
<td>Introduction to Ordinary Differential Equations</td>
<td>3.0</td>
</tr>
<tr>
<td>3450:421</td>
<td>Advanced Calculus I</td>
<td>3.0</td>
</tr>
<tr>
<td>3450:422</td>
<td>Advanced Calculus II</td>
<td>3.0</td>
</tr>
<tr>
<td>3450:427</td>
<td>Applied Numerical Methods I</td>
<td>3.0</td>
</tr>
<tr>
<td>3450:428</td>
<td>Applied Numerical Methods II</td>
<td>3.0</td>
</tr>
<tr>
<td>3450:436</td>
<td>Mathematical Models</td>
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</tr>
<tr>
<td>3450:539</td>
<td>Advanced Engineering Mathematics II</td>
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</tr>
<tr>
<td>3470:461</td>
<td>Applied Statistics</td>
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</table>

At least 20 science credits including:

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>3150:151</td>
<td>Principles of Chemistry I</td>
<td>3.0</td>
</tr>
<tr>
<td>3150:152</td>
<td>Principles of Chemistry I Lab</td>
<td>1.0</td>
</tr>
<tr>
<td>3150:153</td>
<td>Principles of Chemistry II</td>
<td>3.0</td>
</tr>
<tr>
<td>3150:154</td>
<td>Qualitative Analysis</td>
<td>2.0</td>
</tr>
<tr>
<td>3150:263</td>
<td>Organic Chemistry I</td>
<td>3.0</td>
</tr>
<tr>
<td>*3650:291</td>
<td>Elementary Classical Physics I</td>
<td>4.0</td>
</tr>
<tr>
<td>*3650:292</td>
<td>Elementary Classical Physics II</td>
<td>4.0</td>
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</table>

At least 16 engineering credits including:

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>4200:200</td>
<td>Material and Energy Balances</td>
<td>4.0</td>
</tr>
<tr>
<td>4300:201</td>
<td>Statics</td>
<td>3.0</td>
</tr>
<tr>
<td>4300:202</td>
<td>Introduction to Mechanics of Solids</td>
<td>3.0</td>
</tr>
<tr>
<td>4200:321</td>
<td>Transport Phenomena</td>
<td>3.0</td>
</tr>
<tr>
<td>9841:550</td>
<td>Engineering Properties of Polymers***</td>
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</tbody>
</table>

### Graduate Level Course Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>9841:641</td>
<td>Polymer Materials Engineering Science</td>
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</tr>
<tr>
<td>9841:650</td>
<td>Basic Engineering for Polymer Engineers</td>
<td>3.0</td>
</tr>
<tr>
<td>9841:661</td>
<td>Polymerization Reactor Engineering</td>
<td>3.0</td>
</tr>
<tr>
<td>9841:601</td>
<td>Seminar: Polymer Engineering</td>
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</tr>
<tr>
<td>9841:611</td>
<td>Structural Characterization of Polymers</td>
<td>3.0</td>
</tr>
<tr>
<td>9841:621</td>
<td>Rheology of Polymeric Fluids</td>
<td>3.0</td>
</tr>
<tr>
<td>9841:651</td>
<td>Polymer Engineering Laboratory</td>
<td>3.0</td>
</tr>
<tr>
<td>9841:622</td>
<td>Analysis and Design of Polymer Processing Operations I</td>
<td>3.0</td>
</tr>
<tr>
<td>9841:6xx</td>
<td>Electives</td>
<td>3.0</td>
</tr>
<tr>
<td>9841:699</td>
<td>Master's Thesis</td>
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</tr>
</tbody>
</table>

Courses marked with *** are to be applied to the requirements of both the bachelor's and master's degree.

### Undergraduate Electives

14 hours credits from natural science division and/or engineering departments. At least 3 of these credits must be at the 300/400 level,

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>4200:225</td>
<td>Equilibrium Thermodynamics</td>
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<tr>
<td></td>
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<td>3.0</td>
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<td></td>
<td></td>
<td>2.0</td>
</tr>
</tbody>
</table>
The University of Akron

General Education Requirement

1. English Composition (7 credits)
   3300:111 ____________ cr.
   3300:112 ____________ cr.

2. Mathematics (3 credits)
   3450: ______ ____________ cr.
   or
   3470: ______ ____________ cr.

3. Natural Science (8 credits)
   (Minimum of 2 courses, one of which has a lab component, selected from two different departments)
   Biology ____________ cr.
   or
   Chemistry ____________ cr.
   or
   Geology ____________ cr.
   or
   Physics ____________ cr.

4. Oral Communication (3 credits)
   7600:105 ____________ cr.
   or
   7600:106 ____________ cr.

5. Physical Education/Wellness (1 credit)
   5540: ____________ cr.
   5540: ____________ cr.

6. Social Sciences (6 credits)
   (Courses selected from two different sets)
   Economics___________________ cr.
   Geography___________________ cr.
   US Govt/Politics_______________ cr.
   Psychology___________________ cr.
   Sociology/Anthropology_________ cr.
   United States History__________ cr.
   Social Science/Technology________ cr.
   /Society

7. Humanities (10 credits – 3 courses)
   3400:210____________________ cr.
   and
   2 courses selected from two different departments
   Fine Arts___________________ cr.
   or
   Philosophy/Classics___________ cr.
   or
   Literature___________________ cr.
   or
   3400:211____________________ cr.

8. Area Studies and Diversity (4 credits – 2 courses)
   __________________________ cr.
   __________________________ cr.

October 28, 2009-