2+2 PROGRAM

Introduction

Students complete the first two years of an engineering program in Canisius’ Liberal Arts environment, taking advantage of small class sizes and individual attention before transferring to a larger institution to complete their studies. Coursework at Canisius is just as rigorous and demanding as at Engineering institutions, so students typically report little difficulty adapting to the transfer. Early consultation with an advisor is required to map out a curriculum, as the choice of desired engineering major will alter the course schedule somewhat. Mathematical preparation is key to timely completion of this program, again requiring close attention to course scheduling. Outside the classroom, our students work with modern fabrication techniques with our 3-D printer and Computer Numerical Control router. The students can build standard parts or prototype new pieces.

Dual Majors

Dual majors in the Engineering 2+2 program would be subject to the regulations of the engineering institution.

Curriculum

Major Courses

This varies depending on the engineering major chosen, but typically includes:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MAT 111</td>
<td>Calculus I</td>
<td>4</td>
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<tr>
<td>MAT 112</td>
<td>Calculus II</td>
<td>4</td>
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<tr>
<td>MAT 211</td>
<td>Calculus III</td>
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<tr>
<td>MAT 222</td>
<td>Differential Equations</td>
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<tr>
<td>CHM 111</td>
<td>General Chemistry I &amp; General Chemistry I Laboratory</td>
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<td>CHM 112</td>
<td>General Chemistry II &amp; General Chemistry II Laboratory</td>
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<tr>
<td></td>
<td>or PHY 225</td>
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</tr>
<tr>
<td>PHY 107</td>
<td>Computer Programming for Science &amp; Computer Programming for Science Laboratory</td>
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</tr>
<tr>
<td>PHY 223</td>
<td>General Physics for Physical Science Majors I &amp; General Physics for Physical Science Majors I Laboratory</td>
<td>4</td>
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<td>PHY 224</td>
<td>General Physics for Physical Science Majors I &amp; General Physics for Physical Science Majors I Laboratory</td>
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<td>PHY 225</td>
<td>General Physics for Physical Science Majors III &amp; General Physics for Physical Science Majors III Laboratory</td>
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<td>or CHM 112</td>
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<tr>
<td>PHY 226</td>
<td>Basic Electronics &amp; Basic Electronics Laboratory</td>
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<td>EGR 111</td>
<td>Introduction to Engineering Design</td>
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<td>EGR 207</td>
<td>Engineering Static</td>
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<td>EGR 208</td>
<td>Engineering Dynamics</td>
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</tr>
<tr>
<td>EGR 214</td>
<td>Strength of Materials</td>
<td>3</td>
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<td>EGR 211</td>
<td>Engineering Thermodynamics</td>
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<td>Total Credits</td>
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Additional Course Recommendations

Linear Algebra (MAT 219), additional computer science (CSC 111) and/or Organic Chemistry (CHM 227, CHM 228), depending on choice of engineering major.

Roadmap

Recommended Schedule: 2+2 program

Freshman

<table>
<thead>
<tr>
<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td>CHM 111 &amp; 111L</td>
<td>CHM 112 &amp; 112L (or Elective if PHY 225 and lab will be taken)</td>
</tr>
<tr>
<td>EGR 111</td>
<td>MAT 112</td>
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<tr>
<td>PHY 107 &amp; 107L</td>
<td>PHY 223 &amp; 223L</td>
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<td>MAT 111</td>
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</table>

Sophomore

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<th>Spring</th>
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<td>MAT 211</td>
<td>MAT 222</td>
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<tr>
<td>PHY 224 &amp; 224L</td>
<td>PHY 225 &amp; 225L (or Elective if CHM 112 and lab was taken)</td>
</tr>
<tr>
<td>EGR 211</td>
<td>PHY 226 &amp; 226L</td>
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<tr>
<td>EGR 207</td>
<td>EGR 208</td>
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</table>

Junior

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<th>Fall</th>
<th>Spring</th>
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<tbody>
<tr>
<td>Completed at an Engineering Institution</td>
<td>Completed at an Engineering Institution</td>
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Senior

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<thead>
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<th>Fall</th>
<th>Spring</th>
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</thead>
<tbody>
<tr>
<td>Completed at an Engineering Institution</td>
<td>Completed at an Engineering Institution</td>
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Additional Course Considerations

Additional courses in some engineering majors may require cross-registration at University at Buffalo (UB).