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>
</tr>
</thead>
<tbody>
<tr>
<td>MAT 111</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<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>
<td>4</td>
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<tr>
<td>MAT 222</td>
<td>Differential Equations</td>
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<tr>
<td>CHM 111 &amp; 111L</td>
<td>General Chemistry I and General Chemistry I Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>CHM 112 &amp; 112L</td>
<td>General Chemistry II and General Chemistry II Laboratory</td>
<td>4</td>
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<tr>
<td>or PHY 225</td>
<td>General Physics for Physical Science Majors III</td>
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<tr>
<td>CSC 111 &amp; 111L</td>
<td>Introduction to Programming and Introduction to Programming Laboratory</td>
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<tr>
<td>PHY 104</td>
<td>Seminar for Physics and Pre-engineering Majors</td>
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<td>PHY 201 &amp; 201L</td>
<td>University Physics I and University Physics I Laboratory</td>
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<tr>
<td>PHY 202 &amp; 202L</td>
<td>University Physics II and University Physics II Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>PHY 225 &amp; 225L</td>
<td>General Physics for Physical Science Majors III and General Physics for Physical Science Majors III Laboratory</td>
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<tr>
<td>or CHM 112</td>
<td>General Chemistry II</td>
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<tr>
<td>PHY 226 &amp; 226L</td>
<td>Basic Electronics and Basic Electronics Laboratory</td>
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<tr>
<td>EGR 111</td>
<td>Introduction to Engineering Design</td>
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<td>EGR 207</td>
<td>Engineering Statics</td>
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<td>EGR 208</td>
<td>Engineering Dynamics</td>
<td>3</td>
</tr>
<tr>
<td>EGR 214</td>
<td>Strength of Materials</td>
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<td>EGR 211</td>
<td>Engineering Thermodynamics</td>
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</table>

Total Credits 58

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
Fall
- EGR 111
- MAT 112
- MAT 111
- PHY 104
- PHY 104
- PHY 202
- & 202L
- PHY 201
- & 201L
- CHM 111
- & 111L

Spring
- MAT 112
- PHY 104
- PHY 104
- PHY 225
- & 225L
- EGR 207
- EGR 208
- EGR 211
- EGR 214

Sophomore
Fall
- MAT 211
- PHY 104
- PHY 202
- & 225L
- EGR 207
- EGR 208
- EGR 211
- EGR 214

Spring
- MAT 222
- PHY 104
- PHY 226
- & 226L

Junior
Fall
- Completed at an Engineering Institution

Spring
- Completed at an Engineering Institution

Senior
Fall
- Completed at an Engineering Institution

Spring
- Completed at an Engineering Institution

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