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>
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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>
<td>4</td>
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<tr>
<td>MAT 222</td>
<td>Differential Equations</td>
<td>3</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>
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<tr>
<td>CHM 112&amp; 112L</td>
<td>General Chemistry II and General Chemistry II Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>PHY 225</td>
<td>Computer Programming for Science</td>
<td>4</td>
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<tr>
<td>PHY 107&amp; 107L</td>
<td>Computer Programming for Science Laboratory</td>
<td></td>
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<tr>
<td>PHY 223&amp; 223L</td>
<td>General Physics for Physical Science Majors I and General Physics for Physical Science Majors I Laboratory</td>
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<tr>
<td>PHY 224&amp; 224L</td>
<td>General Physics for Physical Science Majors II and General Physics for Physical Science Majors II Laboratory</td>
<td>4</td>
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<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>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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<tr>
<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>
<td>3</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
CHM 111 & 111L
PHY 107 & 107L
MAT 111
Spring
CHM 112 & 112L (or Elective if PHY 225 and lab will be taken)
EGR 111
MAT 112
PHY 107 & 107L
PHY 225 & 225L (or Elective if CHM 112 and lab was taken)
EGR 211
PHY 226 & 226L
EGR 207
EGR 208

Sophomore
Fall
MAT 211
PHY 224 & 224L
EGR 211
PHY 226 & 226L
Spring
MAT 221
PHY 225 & 225L
EGR 214
EGR 215

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).