INJURY BIOMECHANICS (BRIDGE GRADUATE CERTIFICATE)

This bridge graduate certificate program aims to provide specialized skills and training engineers will need to address impact biomechanics and motor vehicle trauma in the automotive and defense industries as well as blast-induced injury biomechanics and counter measures. Those enrolled in the program will take a core program in physiology and impact biomechanics, with additional electives to broaden the educational program.

As a Bridge Graduate Certificate, students who complete this program have the option to continue into the M.S. program in Biomedical Engineering. Credits earned as part of the Bridge Graduate Certificate in Injury Biomechanics can be applied towards the M.S. degree requirements as long as they were completed with at least a ‘B’ (3.0 g.p.a.) and within six years of the completion date for the M.S.

Admission Requirements

Admission to this program is contingent upon admission to the Graduate School (http://bulletins.wayne.edu/graduate/general-information/admission). A minimum grade point average for regular admission to Graduate Certificate Program is 3.0. However, those with g.p.a. of 2.70 can be admitted conditionally requiring that they maintain a 3.0 average g.p.a. for the first two consecutive semesters. Applicants should have a Bachelor of Science degree in engineering. Applicants with degrees in chemistry, physics, or life sciences who wish to be considered for admission must have completed the undergraduate engineering calculus sequence and the calculus-based undergraduate physics sequence. They are also advised to take BME 5040 before starting the Certificate Program.

Students must complete sixteen credits in BME courses related to injury biomechanics, including three required courses.

Required Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BME 5010</td>
<td>Quantitative Physiology</td>
<td>4</td>
</tr>
<tr>
<td>BME 7100</td>
<td>Mathematical Modeling in Impact Biomechanics</td>
<td>4</td>
</tr>
<tr>
<td>BME 7160</td>
<td>Impact Biomechanics</td>
<td>4</td>
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</tbody>
</table>

Elective

Select one of the following: 4

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
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<tbody>
<tr>
<td>BME 6480</td>
<td>Biomedical Instrumentation</td>
</tr>
<tr>
<td>BME 7120</td>
<td>Applied Finite Element Methods in Biomechanical Analysis</td>
</tr>
<tr>
<td>BME 7150</td>
<td>Biomechanics of Blast-Related Injuries</td>
</tr>
<tr>
<td>BME 7170</td>
<td>Experimental Methods in Impact Biomechanics</td>
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</tbody>
</table>

Total Credits 16

All requirements must be completed within a three-year period. The minimum cumulative g.p.a. must be 3.0 at the time of graduation. No grade lower than a B-minus will be accepted for credit towards certificate requirements. All course work must be completed in accordance with the regulations of the Graduate School (http://bulletins.wayne.edu/graduate/general-information/academic-regulations) and the College of Engineering (http://bulletins.wayne.edu/graduate/college-engineering/academic-regulations).