

# 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 countermeasures. 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 a G.P.A. of 2.70 can be admitted conditionally requiring that they maintain a 3.0 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.

## Requirements – Traditional Program

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

Code	Title	Credits
<b>Required Courses</b>		
BME 5010	Quantitative Physiology	4
BME 7100	Mathematical Modeling in Impact Biomechanics	4
or BME 7160	Impact Biomechanics	
<b>Elective</b>		
Select eight credits from the following:		8
BME 5130	Vehicle Safety Engineering	
BME 6130	Accident Reconstruction	
BME 7150	Biomechanics of Blast-Related Injuries	
BME 7170	Experimental Methods in Impact Biomechanics	
BME 7180	Advanced Topics: Impact Biomechanics	
<b>Total Credits</b>		<b>16</b>

All requirements must be completed within a three-year period. The minimum cumulative grade point average 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/>).

## Requirements – Online Program

Students must complete sixteen credits in BME courses related to injury biomechanics, including two required courses. All classes must be taken online.

Code	Title	Credits
<b>Core courses</b>		
BME 5010	Quantitative Physiology	4
BME 7160	Impact Biomechanics	4
<b>Elective courses</b>		
Select 8 credits from the following:		8
BME 5130	Vehicle Safety Engineering	
BME 6130	Accident Reconstruction	
BME 7180	Advanced Topics: Impact Biomechanics	
BME 7990	Directed Study	
<b>Total Credits</b>		<b>16</b>

All requirements must be completed within a three-year period. The minimum cumulative grade point average 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/>).