

The Preparatory Program for the MS Biomedical Engineering Program (updated March, 2011)

Students who have an undergraduate background in a field other than engineering are required to have completed additional undergraduate coursework, including calculus through differential equations (ESC 250 or MTH 286) and multivariable calculus (MTH 283), one year of calculus-based physics (PHY 241 and 242), one semester of general chemistry with laboratory (CHM 261/266), and at least 9 credits of undergraduate engineering courses, selected from the following three options.

Field of Specialization	Courses
Biomaterials and Tissue Engineering (11-12 credits)	ESC 270 Material Science, ESC 201 Statics or ESC 203 Statics and Dynamics, ESC 211 Strength of Materials, CVE 311 Strength of Materials Lab
Biomechanics (13 credits)	ESC 203 Statics and Dynamics, ESC 211 Strength of Materials, CVE 311 Strength of Materials Lab, MCE 305 Kinematics and Dynamics of Machinery
General, select three courses from the following list (9-11 credits)	ESC 270 Material Science, ESC 203 Statics and Dynamics, ESC 301 Fluid Mechanics, ESC 315 Electrical Engineering Concepts, CHE 306 Transport Phenomena, CHE 300 Chemical Engineering Principles, ESC 350 Linear Algebra and Numerical Methods

A grade of B or better must be earned in each of the undergraduate courses. These students may be admitted into the program prior to their completing all of the course requirements. Students will only be permitted to enroll in graduate courses for which they have completed the prerequisites. These undergraduate credits will not count towards the 30 hours required for the degree.

Students should call the Chemical and Biomedical Engineering Department at (216) 687-2569 to set up an appointment with the Graduate Program Director prior to registering for classes.