BIOMEDICAL ENGINEERING FIVE-YEAR BACHELOR OF SCIENCE AND MASTER OF SCIENCE PROGRAM

Requirements

The five-year program offers a simplified process for admission to the graduate school. Students typically apply to the accelerated Master's degree program at the end of their third year. Students follow the standard undergraduate curriculum for the first three years, and then complete the baccalaureate degree requirements during their fourth year while taking up to two graduate courses. Up to six graduate course credits taken during the fourth year may be applied towards both the undergraduate and master's degree requirements. After receiving the baccalaureate degree, students will take an additional eight courses (for a total of ten courses) to complete the MS degree requirements in the fifth year. This accelerated degree is expected to be completed in five years without interruption.

Students accepted in this program are expected to have an overall GPA of 3.00 or higher and receive approval of the faculty advisor. Students will be awarded the BS in Biomedical Engineering when all requirements are met, usually at the end of the fourth year. The MS degree will be awarded when all graduate requirements of the combined degree curricula have been satisfied, usually at the end of the fifth year.

Accelerated Degree Curriculum

Students must develop of a plan of study for the MS portion of the degree with approval of their academic advisor, including the following:

Thesis Option

Code	Title	Credits
All Requirements for BS in Biomedical Engineering [1]		127
BIEG 5319	Advanced Experimental Design in Biomedical Engineering	3
MATH 5417	Applied Statistics I	3
or SWEG 5317	Computational Statistics for Biomedical Sciences	
BIEG 6971	Thesis I	3
BIEG 6972	Thesis II	3
Select two Biomedical Engineering elective courses from approved list		6
Select two electives from Mechanical, Electrical, Computer, Software Engineering, Computer Science, Mathematics, or Management of Technology with approval from the program director.		6
Total Credits		**151**

[1] Requirements are the same as those listed for the BS, except students may select up to two graduate-level electives to fulfill the major elective requirement.

Non-Thesis Option

Code	Title	Credits
All Requirements for BS in Biomedical Engineering [1]		127
BIEG 5319	Advanced Experimental Design in Biomedical Engineering	3
MATH 5417	Applied Statistics I	3
or SWEG 5317	Computational Statistics for Biomedical Sciences	
Select three Biomedical Engineering elective courses from approved list		9
Select three electives from Mechanical, Electrical, Computer, Software Engineering, Computer Science, Mathematics, or Management of Technology with approval from the program director.		9
Total Credits		**151**

[1] Requirements are the same as those listed for the BS, except students may select up to two graduate-level electives to fulfill the major elective requirement.

Note:

1. **A minimum of 30 credits must be completed at the graduate level.**

2. The total number of credits for 5 year accelerated BS/MS BME takes into account the two graduate-level electives (6 credits) that count towards both the BS and MS degrees.

Biomedical Engineering Electives

Code	Title	Credits
Biomedical Engineering Electives		
BIEG 5309	Biosensors	3
BIEG 5311	Biomaterials	3
BIEG 5314	Introduction to Molecular Modeling	3
BIEG 5335	Clinical Engineering	3
BIEG 5375	Bioelectronics	3
BIEG 5387	Instrumental Analysis in Biomedical Engineering	3
BIEG 5403	Advanced Biomechanics	3
BIEG 5407	Computational Genomics	3
BIEG 5333	Biomedical Visualization	3
BIEG 5415	Engineering Applications of Numerical Methods	3
BIEG 5301	Feedback Control System	3
BIEG 5990	Independent Study	3

Non-Biomedical Engineering Electives
Possible electives may include:

Code	Title	Credits
Mechanical Engineering		
MEEG 5303	Industrial Automation	3
MEEG 5305	Design of Mechatronics Systems	3
MEEG 5312	Advanced Product Design and Manufacturing	3
MEEG 5319	Applications of Finite Element Analysis	3
MEEG 5372	Applications of Theory of Elasticity	3
Electrical Engineering		
ECEG 5315	Nanoelectronics I	3

ECEG 5335	Microelectronics	3
ECEG 5379	Communication Systems	3
ECEG 5480	Wireless Systems I	3
Computer Engineering		
ECEG 5303	Industrial Automation	3
ECEG 5325	Computer Graphics	3
ECEG 5346	Computer Systems Architecture	3
ECEG 5406	Advanced Digital Design	3
SWEG 5357	Database Management Systems	3
SWEG 5355	Artificial Intelligence	3
SWEG 5360	Machine Learning	3
Management of Technology		
MGMT 6584	Global Competitive Strategy	3
MGTN 5460	Project Management	3
MGMT 6508	Strategic Management of Technology and Innovation: The Entrepreneurial Firm	3
MGTN 5415	Information Systems	3
MGTN 5470	Leadership in Technical Enterprise	3