

BIOMEDICAL ENGINEERING, MSE

Admission Requirements

Applicants for the master of science program must hold a bachelor's degree from a program that is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology at the time of graduation, or provide evidence of an equivalent academic background to the Dean of the College of Engineering and Polymer Science and the appropriate department chair.

Applicants must submit official undergraduate transcripts, undergraduate grade point average, three letters of recommendation, and a statement of purpose that provides a rationale for proposed graduate study.

Applicants with a bachelor's degree must have an overall grade-point average of 2.75 or better or 3.00 for the last two years (64 semester credits or equivalent).

Applicants whose native language is not English must have a TOEFL score of at least 96 on the internet-based TOEFL.

Applicants with a bachelor's degree in a discipline other than engineering shall have completed coursework in calculus, differential equations, have one year of classical physics, one year of chemistry, and must select and complete undergraduate coursework in 4600:300 Thermodynamics I (3 credits) and 4 of the 5 following subject areas:

Code	Title	Hours
4400:307	Basic Electrical Engineering	4
4800:362	Transport Fundamentals for Biomedical Engineering	3
4800:300	Biomaterials	3
4400:340 or 4800:305	Signals & Systems Introduction to Biophysical Measurements	4
4300:202	Introduction to Mechanics of Solids	3

An overall GPA of 3.0 must be maintained for these courses. These undergraduate engineering courses may be taken prior to graduate admission.

Thesis Option

Code	Title	Hours
Required Courses		
4800:600	BME Graduate Colloquium	1
4800:605	Fundamentals of Biomedical Engineering	4
4800:606	Physiology for Biomedical Science and Engineering	3
4800:611	Biometry	3

Code	Title	Hours
Approved Electives (12-14 credits)		
4800:530	Design of Medical Imaging Systems	3
4800:627	Advances in Drug and Gene Delivery Systems	3
4800:653	Transport Phenomena in Biology & Medicine	3
4800:654	Microfluidics in Biotechnology	3

4800:661	Advanced Biomaterials	3
4800:662	Tissue Engineering & Regenerative Medicine	3
4800:697	Special Topics: Biomedical Engineering	1-4

Code	Title	Hours
Master's Thesis (6 credits)		
4800:699	Masters Thesis in Biomedical Engineering	1-6

Total Credits: 30

Approved electives include 4800:6xx-level courses other than the core requirements. A total of 18 credits of graduate level 4800 courses are required for thesis option; other credits can be taken at the graduate level in other disciplines with approval. Up to 6 credits of 5xx level courses can be taken for degree. 4800:600 can be taken up to 2 times for course credit for thesis option.

The thesis must be successfully (no "fail" votes) defended before the Advisory Committee.

Non-thesis Option

Required Courses

Code	Title	Hours
4800:600	BME Graduate Colloquium	1
4800:605	Fundamentals of Biomedical Engineering	4
4800:606	Physiology for Biomedical Science and Engineering	3
4800:611	Biometry	3
4800:696	Engineering Report	2

Approved Electives - 12-14 credits

Code	Title	Hours
4800:530	Design of Medical Imaging Systems	3
4800:627	Advances in Drug and Gene Delivery Systems	3
4800:653	Transport Phenomena in Biology & Medicine	3
4800:654	Microfluidics in Biotechnology	3
4800:661	Advanced Biomaterials	3
4800:662	Tissue Engineering & Regenerative Medicine	3
4800:697	Special Topics: Biomedical Engineering	1-4

Total Credits: 32

Approved electives include 4800:6xx-level courses other than the core requirements. A total of 18 credits of graduate level 4800 courses are required for thesis option; other credits can be taken at the graduate level in other disciplines with approval. Up to 6 credits of 5xx level courses can be taken for degree. 4800:600 can be taken up to 2 times for course credit.