BIOLOGICAL AND BIOMEDICAL ENGINEERING (NON-THESIS) (M.ENG.) (45 CREDITS)

Offered by: Biological & Biomedical Engr (Faculty of Medicine and Health Sciences)
Degree: Master of Engineering
Program credit weight: 45

Program Description

This program is currently not offered.

The M.Eng. in Biological and Biomedical Engineering; Non-Thesis program focuses on the life sciences, the physical sciences, and engineering, industrial practices and processes, and data science related to areas such as biological products, biomedical devices, and medical imaging. Hands-on experience through projects carried out during internships.

Note: For information about Fall 2025 and Winter 2026 course offerings, please check back on May 8, 2025. Until then, the "Terms offered" field will appear blank for most courses while the class schedule is being finalized.

Internship Courses (18 credits)

Expand allContract all

Course	Title	Credits
BBME 681	Internship 1.	9
BBME 682	Internship 2 .	9

Complementary Courses (27 credits)

Expand allContract all

Course	Title	Credits
BBME 600D1	Seminars in Biological and Biomedical Engineering.	1.5
BBME 600D2	Seminars in Biological and Biomedical Engineering.	1.5
BBME 600N1	Seminars in Biological and Biomedical Engineering.	1.5
BBME 600N2	Seminars in Biological and Biomedical Engineering.	1.5
BIEN 601	cGMP and Regulation in Biomanufacturing.	3

[1] Students take either BBME 600D1 Seminars in Biological and Biomedical Engineering. and BBME 600D2 Seminars in Biological and Biomedical Engineering. or BBME 600N1 Seminars in Biological and Biomedical Engineering. and BBME 600N2 Seminars in Biological and Biomedical Engineering..

Minimum of 12 credits must come from the core courses listed below. At least 6 credits must be chosen from the "quantitative" courses listed below:

Quantitative Core Courses

Expand allContract all

Course	Title	Credits
BIEN 510	Engineered Nanomaterials for Biomedical Applications.	3
BIEN 530	Imaging and Bioanalytical Instrumentation.	3
BIEN 550	Biomolecular Devices.	3
BIEN 560	Design of Biosensors.	3
BIEN 570	Active Mechanics in Biology.	3
BIEN 590	Cell Culture Engineering.	3
BMDE 502	BME Modelling and Identification.	3
BMDE 503	Biomedical Instrumentation.	3
BMDE 512	Finite-Element Modelling in Biomedical Engineering.	3
BMDE 519	Biomedical Signals and Systems.	3
BMDE 520	Machine Learning for Biomedical Data.	3
BMDE 610	Functional Neuroimaging Fusion.	3
BMDE 660	Advanced MR Imaging and Spectroscopy of the Brain.	3
MDPH 607	Medical Imaging.	3

Non-Quantitative Core Courses

Expand allContract all

Course	Title	Credits
BIEN 535	Electron Microscopy and 3D Imaging for Biological Materials.	3
BIEN 540	Information Storage and Processing in Biological Systems.	3
BIEN 580	Synthetic Biology.	3
BIEN 680	Bioprocessing of Vaccines.	4
BMDE 501	Selected Topics in Biomedical Engineering.	3
BMDE 504	Biomaterials and Bioperformance.	3
BMDE 505	Cell and Tissue Engineering.	3
BMDE 508	Introduction to Micro and Nano-Bioengineering.	3
BMDE 525D1	Design of Assistive Technologies: Principles and Praxis.	3
BMDE 525D2	Design of Assistive Technologies: Principles and Praxis.	3
BMDE 650	Advanced Medical Imaging.	3
BMDE 654	Biomedical Regulatory Affairs - Medical Devices.	3

The remaining 12 credits of complementary courses must come from core or non-core complementary courses chosen from BBME courses or from other courses, a the 500 level or higher. At least 6 of the 12 credits must have both life sciences content and content from the physical sciences, engineering or computer science. The selection of

courses must have the prior written approval of the Graduate Program Director.