

# M.Eng. M.D.E. Curriculum

All courses must be taken for a letter grade.

## Required Courses for M.Eng. M.D.E. Degree

Note: The “F,W,S” in parentheses indicate when the course is typically expected to be offered, with “F” indicating Fall, “W” indicating Winter, and “S” indicating Spring.

### 1. Core Courses (six required):

#### *Medical Device Design*

- BENG 261A. Clinical Perspectives in Medical Device Design – 4 units (F)
- BENG 261B. Medical Device Experience I – 4 units (W)
- BENG 261C. Medical Device Experience II – 4 units (S)
- BENG 262. Biomaterials for Medical Device Design – 4 units

#### *Medical Device Entrepreneurship*

- BENG 224. Regulatory Affairs – 4 units
- BENG 225. Business of Biotech – 4 units

### 2. Elective Courses in Medical Device Component Design (total of four required):

- BENG 241A. Tissue Engineering and Regenerative Medicine: Foundations – 4 units (F)
- BENG 247A. Advanced BioPhotonics – 4 units (F)
- BENG 247B. BioElectronics – 4 units
- BENG 247C. BioNanotechnology – 4 units
- ECE 202. Medical Devices and Interfaces – 4 units
- ECE 203. Biomedical Integrated Circuits and Systems – 4 units
- ECE 212AN. Principles of Nanoscience and Nanotechnology – 4 units
- ECE 212BN. Nanoelectronics – 4 units
- MAE 292. Computer-Aided Design and Analysis – 4 units
- CSE 250A. Principles of Artificial Intelligence: Probabilistic Reasoning and Learning – 4 units
- CSE 250B. Principles of Artificial Intelligence: Learning Algorithms – 4 units

### 3. Elective Courses (two required):

Eight units of elective course work are required for completion of course requirements. Graduate courses offered in the Departments of Bioengineering, Electrical and Computer Engineering, and Mechanical and Aerospace Engineering may be used to fulfill the elective course requirement with some exceptions. Courses taken in fulfillment of the elective course requirement must be taken for a letter grade. Other courses may be approved by petition.

Up to eight units of upper-division undergraduate course work can be used to fulfill the remaining graduate elective course work. These units are limited to courses in the Department of Bioengineering and must be a technical elective course. Courses in physiology, e.g., BENG 140A and BENG 140B, would be encouraged if the student's biology background is limited.