

**Bioengineering (BNG)****Minor in Bioengineering****Department of Biomedical Engineering, College of Engineering and Applied Sciences**

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**Bioengineering (BNG)**

The Bioengineering minor is the same as the Biomedical Engineering Specialization track within the Biology major. The minor is designed for College of Arts and Sciences students who wish to obtain a more thorough understanding of how physical forces in the natural world influence biological systems. Coursework introduces these concepts and shows how an engineering approach can be useful in dealing with questions in biology and medicine. The program serves as an excellent background for students who wish to prepare for graduate study in bioengineering or a related field, or for a career in which an understanding of engineering concepts would provide an advantage.

**Requirements for the Minor in Bioengineering (BNG)**

To declare the minor in Bioengineering, students must complete PHY 131, PHY 132, PHY 133, and PHY 134 with grades of C or higher (Note: the following alternate physics sequences are acceptable: PHY 125, PHY 126, PHY 127, PHY 133 and PHY 134 or PHY 141, PHY 142, PHY 133 and PHY 134.).

All courses for the minor must be passed with a letter grade of C or higher. Completion of the minor requires 21-23 credits as outlined below.

**A. Required Courses for each Track**

1. 1. BME 100 Introduction to Biomedical Engineering
2. C-programming for Engineers (ESG 111, CSE 130)

**B. Specialization Tracks**

1. Biomaterials/Biomechanics
  1. MEC 260 Engineering Statics
  2. BME 303 Biomechanics
  3. Calculus III (AMS 261, MAT 203 or MAT 205)
  4. Either BME 353 Biomaterials or BME 381 Nanofabrication in Biomedical Applications
2. Bioelectricity
  1. ESE 271 Electrical Circuit Analysis I
  2. BME 301 Bioelectricity
  3. Linear Algebra (AMS 210 or MAT 211)
  4. Either BME 311 Bioimaging or BME 313 Bioinstrumentation or BME 481 Biosensors
3. Molecular/Cellular
  1. BME 304 Genetic Engineering
  2. BME 381 Nanofabrication in Biomedical Applications
  3. PICK TWO: BME 404 Essentials of Tissue Engineering or BME 402 Contemporary Biotechnology or BME 371 Biological Microfluidics

**C. Upper Division Courses**

1. 1. One advanced biology lecture course
2. One advanced biology laboratory course

No courses are associated with this academic program.