

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

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Bioengineering (BNG)

The Bioengineering minor with track specialization 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)

All courses for the minor must be passed with a letter grade of C or higher. Completion of the minor requires 19 credits.

A. Required Courses for each Track

1. BME 100 Introduction to Biomedical Engineering
2. ESG 111-C Programming for Engineers (or equivalent)

B. Specialization Tracks

1. Biomaterials/Biomechanics
 - a. MEC 260 Engineering Statics
 - b. BME 303 Biomechanics
 - c. AMS 261 Applied Calculus III (or equivalent)
 - d. Either BME 304-H Genetic Engineering or BME 381 Nanofabrication in Biomedical Applications
2. Bioelectricity
 - a. ESE 271 Electrical Circuit Analysis I
 - b. BME 301 Bioelectricity
 - c. AMS 210 Applied Linear Algebra (or equivalent)
 - d. BME 313 Bioinstrumentation
3. Molecular/Cellular
 - a. BME 304-H Genetic Engineering
 - b. BME 381 Nanofabrication in Biomedical Applications
 - c. ESG 332 Materials Science I: Structure and Properties of Materials
 - d. Either BME 353 (ESM 353) Biomaterials: Manufacture, Properties, and Applications or BME 404 Essentials of Tissue Engineering or BME 430 Engineering Approaches to Drug and Gene Delivery

C. Upper Division Courses

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

No courses are associated with this academic program.