Bioengineering (BNG)

Minor in Bioengineering
Department of Biomedical Engineering, College of Engineering and Applied Sciences
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The Bioengineering minor is the same as the Biology Biomedical Engineering Specialization track. It 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 21-23 credits as outlined below.

A. Required Courses for each Track
   a. BME 100 Introduction to Biomedical Engineering
   b. C-programming for Engineers (ESG 111, ESE 124, or CSE 130)

B. Specialization Tracks
   a. Biomaterials/Biomechanics
      i. MEC 260 Engineering Statics
      ii. BME 303 Biomechanics
      iii. Calculus III (AMS 261, MAT 203 or MAT 205)
      iv. Either BME 304-H Genetic Engineering or BME 381 Nanofabrication in Biomedical Applications
   b. Bioelectricity
      i. ESE 271 Electrical Circuit Analysis I
      ii. BME 301 Bioelectricity
      iii. Linear Algebra (AMS 210 or MAT 211)
      iv. BME 313 Bioinstrumentation
   c. Molecular/Cellular
      i. BME 304-H Genetic Engineering
      ii. BME 381 Nanofabrication in Biomedical Applications
      iii. Any 2 of the following: BME 371 Microfluidics or BME 402 Contemporary Biotechnology or BME 404 Essentials of Tissue Engineering or BME 430 Engineering Approaches to Drug and Gene Delivery

C. Upper Division Courses
   a. One advanced biology lecture course
   b. One advanced biology laboratory course