

# BIOMEDICAL ENGINEERING - MINOR

The biomedical engineering minor is open to undergraduate students from engineering or non-engineering majors who are interested in an exciting, multidisciplinary field that lies at the interface of medicine, biology and engineering.

Biomedical engineers use engineering principles to analyze and solve problems in biology and medicine, providing an overall enhancement to healthcare. At the same time, biomedical engineers employ concepts learned from biology and medicine to generate new engineering designs.

Current research in biomedical engineering focuses on innovative areas such as biomechanics and mechanobiology; medical devices; imaging and diagnostics; and therapeutics.

For more information, visit the college's Minor in Biomedical Engineering (<https://www.colorado.edu/bme/academics/minor-program/>) webpage.

## Requirements

### Course Requirements

Completion of 18 credit hours is required for the minor, distributed as follows:

Code	Title	Credit Hours
BMEN 2000	Introduction to Biomedical Engineering <sup>1</sup>	3
Focused Elective <sup>2</sup>		
Choose one of the following		3
BMEN 2010	Biomaterials	
BMEN 2100	Biomedical Engineering Principles and Methods	
BMEN 4117	Anatomy and Physiology for Biomedical Engineering	
BIEN 2810	Biology for Engineers	
BIEN 3800	Fundamentals of Biotechnology	
BIEN 4802	Tissue Engineering	
ECEN 4933	Engineering Genetic Circuits	
IPHY 3410	Human Anatomy	
IPHY 3430	Human Physiology	
MCDB 1150	Introduction to Cellular and Molecular Biology	
MCDB 2150	Principles of Genetics	
PHIL 1160	Introduction to Medical Ethics	
PHIL 3160	Bioethics	
Electives <sup>3</sup>		12
<b>Total Credit Hours</b>		<b>18</b>

<sup>1</sup> This course cannot apply towards major degree requirements.

<sup>2</sup> Focused Elective cannot match major prefix.

<sup>3</sup> For more information and a list of approved electives, visit the college's Minor in Biomedical Engineering (<https://www.colorado.edu/bme/academics/minor-program/>) webpage.

Requirements for the minor are met by completing the required gateway course, one focused elective from the list above and 12 elective credit hours identified below. Here are additional guidelines regarding the requirements:

- At least 12 credit hours must be upper-division (3000 or higher level).
- 6 credit hours must be taken in engineering courses (including computer science). Submit enrollment requests for department-restricted courses using the departmental course request forms (<https://www.colorado.edu/engineering-advising/departmental-course-request-forms/>).
- Up to 9 credit hours can be taken outside of engineering (i.e. IPHY, MCDB, PHIL).
- Relevant independent study coursework can be petitioned.
- 5000-level courses are allowed where undergraduate students are eligible to enroll.
- Prior coursework may be transferred from other institutions with approval.
- At least 9 credit hours need to be taken on the CU Boulder campus, at least 6 credits of which must be at the upper-division level.

### Grade Requirements

A grade point average (GPA) of 2.000 or better is required in the courses that are used to satisfy the requirements for this minor. Each individual course that is counted towards these degree requirements must be passed with a D- or better. Note, however, that a C- or better is required in all prerequisite courses to move on to a subsequent course.