Overview

Biomedical engineering lies at the intersection of biomedical challenges and engineering solutions. This coursework-only, professional biomedical engineering master’s degree provides a transdisciplinary focus on improving health, fighting disease, and aiding persons with disabilities. The master’s in biomedical engineering is uniquely positioned to offer educational strengths in engineering, the sciences, and animal and human medicine. Students gain a foundation in biomedical engineering, and the distance delivery of the degree provides the flexibility working professionals and non-traditional students need when pursuing an advanced degree.

With our master’s in biomedical engineering, you explore concepts in:

- Structure and function of biomaterials
- Material issues in mechanical design
- Design and data analysis

Learning Experience

Interactions with the faculty depend on the specific course, but in general you will have access to instructors during their office hours, via email exchange, and through discussion board postings. You will collaborate on projects and exchange ideas with fellow classmates with the same tools.

The program is delivered entirely online; on-campus attendance is not required. Courses can be accessed online at any time so you can study at the time that best fits your schedule. For this online program you can expect a similar workload to a traditional on-campus program. You will spend approximately 9—12 hours per week preparing for each three-hour course. This will vary depending on your learning and studying style.

Delivery

Online

Credits

30 credits

Tuition

$882 per credit; financial aid and a military discount is available

Time Frame

Varies based on intensity of study and previous coursework

Degree Awarded

Master of Engineering in Engineering; transcript reflects the Biomedical Engineering specialization

Offered By

School of Biomedical Engineering

Learn More

online.colostate.edu/degrees/biomedical-engineering

Contact our Student Success Team to get started! (970) 492-4898 online.colostate.edu/contact
Minimum Admission Requirements

- B.S. in engineering, life sciences, or natural sciences from a regionally-accredited institution
- GPA of 3.0 or higher in engineering or life science courses
- Calculus 1, 2, and 3
- Ordinary Differential Equations
- Physics 1 and 2 (calculus-based preferred)
- At least one semester of Life Science (biology, physiology, etc.)

Completion Requirements

- A minimum of 30 semester credits
- 7 credits of Core courses, 12 credits of Foundation courses, at least 8 credits of Depth courses, and 3 credits in the Breadth area
- 24 semester credits must be earned at Colorado State University, 21 of which must be earned after formal admission.
- 24 credits earned at CSU must be at the graduate level (500-level or above), excluding independent study, research, internship, or practicum credits.
- 15 credits of biomedical engineering (BIOM) courses
- Your program of study must be approved by an advisor prior to completing 15 credits toward the degree.

Curriculum

Core (7 credits required)

- BIOM 570 – Bioengineering (3 cr.)
- BIOM 576 – Quantitative Systems Physiology (4 cr.)
  OR
- BMS 300 – Principles of Human Physiology (4 cr.)

Foundation (12 credits required)

- BIOM 525 – Cell/Tissue Engineering (3 cr.)
- BIOM 526 – Biological Physics (3 cr.)
- BIOM 531 – Materials Engineering (3 cr.)
- BIOM 532 – Material Issues in Mechanical Design (3 cr.)
- BIOM 573 – Structure and Function of Biomaterials (3 cr.)

Depth (minimum of 8 credits required)

- CBE 430 – Process Control and Instrumentation (3 cr.)
- ECE 512 – Digital Signal Processing (3 cr.)
- MECH 502 – Advanced/Additive Manufacturing Engineering (3 cr.)
- MECH 530 – Advanced Composite Materials (3 cr.)
- BIOM 532 – Material Issues in Mechanical Design (3 cr.)
- BIOM 592* – Seminar (1 cr.)
  *Can be repeated up to 4 times at 1 cr. per semester

Breadth (3 credits required)

- STAT 511 – Design and Data Analysis for Researchers I (4 cr.)
  OR
- STAT 512 – Design and Data Analysis for Researchers II (4 cr.)
- STAA 551 - Regression Models and Applications (2 cr.)
- STAA 552 – Generalized Regression Models (2 cr.)
- STAA 562 – Mathematical Statistics with Applications (2 cr.)
- STAA 572 – Nonparametric Methods (1 cr.)
- STAA 573 – Analysis of Time Series (2 cr.)
- BIOM 592* – Seminar (1 cr.)
  *Can be repeated up to 4 times at 1 cr. per semester