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

With the online Master of Engineering – Biomedical Engineering, students learn cutting-edge technology from faculty on the forefront of biomedical research. This advanced training will update your skill sets, improve your daily work practices, and lead to advancement opportunities.

Trained biomedical engineers use their expertise in engineering, biology, and medicine to develop and apply cross-disciplinary skills to solve complex problems and improve health care technology from diagnostics to treatment.

Delivery

Online

Credits

30

Tuition

$720 - $995 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 credit toward the degree

Curriculum

Core (7 credits required)
- BIOM 570 – Bioengineering (3 cr.)
- BIOM/MECH 576 – Quantitative Systems Physiology (4 cr.)
- OR
- BMS 300 – Principles of Human Physiology (4 cr.)

Foundation (12 credits required)
- BIOM 526 – Biological Physics (3 cr.)
- BIOM 531 – Materials Engineering (3 cr.)
- BIOM 532 – Material Issues in Mechanical Design (3 cr.)
- BIOM 543 – Membranes for Biotechnology and Biomedicine (3 cr.)
- BIOM 573 – Structure and Function of Biomaterials (3 cr.)
- BIOM 525 – Cell/Tissue Engineering (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 511 – 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