

BIOMEDICAL ENGINEERING - MINOR

The Department of Biomedical Engineering offers a minor for students majoring in an engineering discipline who wish to gain a foundational understanding of key concepts in biomedical engineering. By integrating this specialized knowledge with their primary field of study, students broaden their career opportunities and strengthen their technical expertise at the interface of engineering disciplines.

The minor in Biomedical Engineering offers students a structured curriculum that includes essential core knowledge and a selection of technical electives. Students have the flexibility to tailor their studies to align with their interests within Biomedical Engineering. Focus areas may include biomechanics; cellular and molecular bioengineering; computational bioengineering; imaging, sensing and digital health; or regenerative medicine.

Enrollment/Eligibility Criteria

Students must have a minimum overall GPA of 3.0 to apply and must be admitted to a College of Engineering major.

Application Process

Students seeking to declare the minor must complete an application. Application information is available on the Biomedical Engineering Minor website (<https://engineering.tamu.edu/biomedical/academics/degrees/undergraduate/minor.html>).

Program Requirements

Code	Title	Semester Credit Hours
BMEN 253	Discovering Biomedical Engineering Design Thinking ¹	1
VIBS 243	Introductory Mammalian Histology ¹	2
Select two of the following: ¹		6
BMEN 311	Imaging Living Systems	
BMEN 321 & BMEN 320	Circuits, Signals and Systems and Signals, Power, Acquisition, Transforms and Knowledge (SPARK) Laboratory	
BMEN 341	Biotransport	
BMEN 343 & BMEN 342	Biomedical Engineering Materials and Biomaterials Characterization and Testing Laboratory	
BMEN 344 & BMEN 341	Biological Interactions and Testing and Biological Interactions and Testing Laboratory	
BMEN 361 & BMEN 360	Biomedical Engineering Mechanics and Biomechanics Laboratory	
Select two of the following: ¹		6
BMEN 401	Principles and Analysis of Biological Control Systems	
BMEN 420	Medical Imaging	
BMEN 422	Bioelectromagnetism	
BMEN 425	Biophotonics	

BMEN 427	Magnetic Resonance Engineering
BMEN 428/ CSCE 461	Embedded Systems for Medical Applications
BMEN 431	Biomolecular Engineering
BMEN 432	Molecular and Cellular Biomechanics
BMEN 457	Orthopedic Biomechanics
BMEN 458	Motion Biomechanics
BMEN 461	Cardiac Mechanics
BMEN 463	Soft Tissue Mechanics and Finite Element Methods
BMEN 464	Cancer Bioengineering
BMEN 466	Clinical Engineering for Cardiac Rhythm Management and Ablation
BMEN 471	Numerical Methods in Biomedical Engineering
BMEN 472	Computational Fluid Dynamics in Biomedical Engineering
BMEN 480	Biomedical Engineering of Tissues
BMEN 482	Polymeric Biomaterials
BMEN 483	Polymeric Biomaterial Synthesis
BMEN 486	Biomedical Nanotechnology
BMEN 487	Drug Delivery

¹ Must make a grade of C or better.

Students must be admitted to a degree sequence in the College of Engineering or Biological and Agricultural Engineering. Students may use up to 6 hours from their home department to satisfy minor requirements upon approval from the BMEN Advising Office. All substitutions must be approved by the BMEN Advising Office and director.