Biomechanics and Mechanobiology Curriculum 25-26

Freshman	Credits
CHEM 1127Q - General Chemistry	4
CSE 1010 - Introduction to Computing for Engineers	3
ENGL 1007 Seminar & Studio in Writing and Multimodal Composition or ENGL 1010 Seminar in Academic Writing or ENGL 1011 Seminar in Writing Through Literature	4
ENGR 1000 - Orientation to Engineering	1
MATH 1131Q - Calculus I	4
	16
BIOL 1107 - Principles of Biology	4
CHEM 1128Q - General Chemistry	4
ENGR 1166 - Foundations of Engineering	3
MATH 1132Q - Calculus II	4
	15
Sophomore	
CE 2110 - Applied Mechanics I	3
MATH 2110Q Multivariable Calculus	4
MATH 2210Q - Applied Linear Algebra	3
PHYS 1501Q - Physics for Engineers I	4
PNB 2264 - Human Physiology & Anatomy	4
	18
BME 3120 - LabVIEW Basics for Engineers	1
ECE 2001 - Electrical Circuits	4
ENGR 3400 - Engineering Data Analysis Techniques or STAT 3025Q - Statistical Methods	3
MATH 2410Q - Elementary Differential Equations	3
MSE 2101 - Materials Science & Engineering I	3
PHYS 1502Q - Physics for Engineers II	4
	18
Junior	
BME 3600 - Biomechanics	4
BME Elective	3
CE 2120 - Applied Mechanics II	3
CE 3110 - Mechanics of Materials	3
Common Curriculum TOI - 1	3
	16
BME 3900 - Junior Design	3
BME Elective	3
BME Elective or Track Elective	3
BME 3620 - Failure Analysis for Biomedical Application	3
ME 2233 - Thermodynamic Principles	3
Common Curriculum TOI - 2	3
	18
Senior	
BME 4900 - Biomedical Engineering Design I	3
ME 3227 - Design of Machine Elements or ME 3255 - Computational Mechanics	3
Track Elective	3
Common Curriculum TOI - 3	3
Common Curriculum TOI - 4	3
	15
BME 4910W - Biomedical Engineering Design II	3
ME 2250 - Fluid Dynamics I	3
Track Elective	3
Common Curriculum TOI - 5	3
Common Curriculum TOI - 6	3
	15
Total Credits	**131**

Common Curriculum Requirements:

Within the above courses 2 must have a W (Writing) designation

TOI Courses may be taken in any order (https://catalog.uconn.edu/undergraduate/common-curriculum/)

Biomechanics and Mechanobiology - BME Electives 25-26	Credits
BME 3320 - Biosensors and Nanodevices for Biomedical Applications	3
BME 3400 - Biosystem Analysis**	3
BME 3420 - Stem Cells for Regenerative Medicine	3
BME 3500 - Biomedical Engineering Measurements	4
BME 3520 - Developing Mobile Apps for Healthcare	3
BME 3540 - Principles of Biomedical Optical Sensing: A Laboratory-Based Course	3
BME 3630 - Multiphysics Finite Element Analysis	3
BME 3640 - Human Factors Engineering	3
BME 3700 - Biomaterials	4
BME 3760 - Microfluidics and Lab-on-Chip	3
BME 4130 - Neural Prostheses	3
BME 4170 - Nanomedicine: From Concepts to Applications	3
BME 4201 - Introduction to Medical Imaging.	3
BME 4600 - Biosolid Mechanics	3
BME 4701 - Biomedical Materials and Implants	3
BME 4810 - Machine Learning Methods Biomedical Signal Analysis	3
BME 4985 - Special Topics in BME (requires BME Departmental Approval)	1-3
BME 4999 - Independent Study (requires BME Departmental Approval)	1-3
BME 5000-6000 Graduate Courses (requires BME Departmental Approval)	3

** Only BME 3400 or ECE 3101, not both, may be used towards degree requirements

Biomechanics and Mechanobiology - Track Electives 25-26	Credits
Solids Focus	
ME 3227 - Design of Machine Elements*	3
ME 3253 - Linear Systems Theory	3
ME 3255 - Computational Mechanics*	3
ME 3295. Special Topics in Mechanical Engineering (requires BME Departmental Approval)	3
MSE 3004 - Mechanical Behavior of Materials	3
Fluids Focus	3
ME 2234 - Applied Thermodynamics	3
ME 3214 - Dynamics of Particles and Rigid Bodies	3
ME 3251 - Fluid Dynamics II	3
ME 3253 - Linear Systems Theory	3
ME 3275 - Introduction to Computational Fluid Dynamics	3
ME 3295. Special Topics in Mechanical Engineering (requires BME Departmental Approval)	3
Dynamics Focus	
ECE 3101 - Signals and Systems**	3
ECE 3161 - Introduction to Robotics	3
ME 3224 - Analysis and Design of Mechanisms	3
ME 3253 - Linear Systems Theory	3
ME 3295. Special Topics in Mechanical Engineering (requires BME Departmental Approval)	3
ME 5105 - Basic Concepts of Continuum Mechanics	3

* May be used as a track elective if not used to meet a required course in the curriculum

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