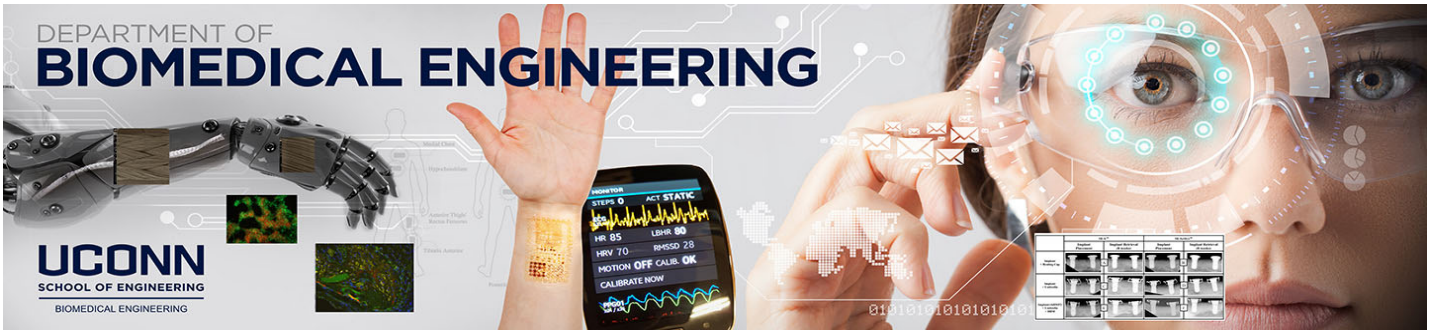

Biomaterials and Tissue Engineering Curriculum 25-26

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 3500 - Biomedical Engineering Measurements	4
BME 3600 - Biomechanics	4
BME 3400 - Biosystem Analysis or ECE 3101 - Signals and Systems	3
Common Curriculum TOI - 1	3
Common Curriculum TOI - 2	3
	17
BME 3700 - Biomaterials	4
BME 3900 - Junior Design	3
MCB 2210 - Cell Biology	3
Track Elective	3
Common Curriculum TOI - 3	3
	16
Senior	
BME 4710 - Tissue Engineering	3
BME 4900 - Biomedical Engineering Design I	3
BME Elective	3
CHEM 3563 - Physical Chemistry	3
Common Curriculum TOI - 4	3
	15
BME 4910W - Biomedical Engineering Design II	3
BME Elective	3
BME Elective or Track Elective	3
Common Curriculum TOI - 5	3
Common Curriculum TOI - 6	3
	15
Total Credits	**130**

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/)

Biomaterials and Tissue Engineering - BME Electives 25-26	Credits
BME 3320 - Biosensors and Nanodevices for Biomedical Applications	3
BME 3420 - Stem Cells for Regenerative Medicine	3
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 3720 - Drug Delivery	3
BME 3740 - Introduction to Microscopy and Biophotonics	3
BME 3750 - Tissue Engineering Laboratory	3
BME 3760 - Microfluidics and Lab-on-Chip	3
BME 3780 - Introduction to Biomanufacturing: Pharmaceutical Proteins	3
BME 4130 - Neural Prostheses	3
BME 4170 - Nanomedicine From Concepts to Applications	3
BME 4410 - System Biology of Cells and Tissue	3
BME 4701 - Biomedical Materials and Implants	3
BME 4720 - Cellular Engineering	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

Biomaterials and Tissue Engineering - Track Electives 25-26	Credits
CHEG 2103 - Introduction to Chemical Engineering	3
CHEG 2111 - Chemical Engineering Thermodynamics I	3
CHEG 3112 - Chemical Engineering Thermodynamics II	3
CHEG 3123 - Fluid Mechanics	3
CHEG 3124 - Heat and Mass Transfer	3
CHEG 3127 - Fluid Mechanics Laboratory	1
CHEG 3128 - Chemical Engineering Junior Laboratory	2
CHEG 3145 - Chemical Engineering Analysis	3
CHEG 3151 - Process Kinetics	3
CHEG 3156 / MSE 3156 - Polymeric Materials	3
CHEG 3173 - Introduction to Biochemical Engineering	3
CHEG 4995 - Special Topics in Chemical Engineering (requires BME Departmental Approval)	1-3
MSE 2102 - Materials Science and Engineering II	3
MSE 3001 - Applied Thermodynamics of Materials	4
MSE 3002 - Transport Phenomena in Materials Processing	4
MSE 3003 - Phase Transformationion Kinetics & Applications	3
MSE 3004 - Mechanical Behavior of Materials	3
MSE 3020 - Failure Analysis	3
MSE 3029 - Ceramic Materials	3
MSE 3030 - Introduction to Composite Materials	3
MSE 4001 - Electrical & Magnetic Properties of Materials	3
MSE 4021 - Materials Joining	3
MSE 4034 - Corrosion & Materials Protection	3
MSE 4038 - Alloy Casting Processes	3
MSE 4095 - Special Topics in Materials Engineering (requires BME Departmental Approval)	1-3
MSE 4240 - Nanomaterials Synthesis & Design	3
MSE 4241 - Nanomaterials Characterization & Application	3