BIOMEDICAL ENGINEERING, WESTERN – UNIVERSITY OF COLORADO BOULDER PARTNERSHIP

The Biomedical Engineering program requires a minimum of 128 cumulative credits applied to the degree, which includes courses from Western Colorado University and the University of Colorado Boulder.

This program provides a seamless transfer of coursework from the Gunnison residential campus for a Bachelor of Science in Mechanical Engineering awarded by CU Boulder. A student must meet the requirements for the CU Boulder College of Engineering & Applied Science and may apply for admission when they have established a successful collegiate record as a Western student. This is demonstrated through academic requirements outlined at https://western.edu/program/mechanical-engineering-university-colorado-partnership/transition-to-cu-boulder/

Students are expected to follow the Academic Policies of#the respective#University/Universities#at which they are registered.

- Western: https://catalog.western.edu/undergraduate/policies/
- CU Boulder College of Engineering & Applied Science: https://www.colorado.edu/engineering-advising/get-your-degree/academic-expectations-policies (https://www.colorado.edu/engineering-advising/get-your-degree/academic-expectations-policies/)

Planned Western coursework is outlined below in red font and course numbers are all three digits, while CU Boulder coursework is outlined below in black font and course numbers are all four digits. Students must complete 45 credits of CU Boulder coursework.

Code	Title	Credits
College Writing Requirement (total of 3 credit hours)		3
ENG 302	Technical Writing	
Computing Courses (total of 3 credit hours)		3
ENGR 130	Introduction to Engineering Computing	
or CS 191	Computer Science II	
Mathematics & Basic Science Courses (total of 35 credit hours)		35
BIOL 150	Biological Principles (with laboratory) (GT-SC1)	
CHEM 111 & CHEM 112	General Chemistry I (GT-SC2) and General Chemistry Laboratory I (GT-SC1)	
CHEM 113	General Chemistry II	
MATH 151	Calculus I (GT-MA1)	
MATH 251	Calculus II	
MATH 252	Calculus III	
MATH 358	Introduction to Differential Equations and Linear Algebra	
PHYS 190 & PHYS 185	General Physics I (GT-SC2) and Laboratory Physics I (GT-SC1)	
PHYS 191 & PHYS 186	General Physics II (GT-SC2) and Laboratory Physics II (GT-SC1)	
Mechanics Courses (total of 9 credit hours)		9
ENGR 251	Dynamics	
or PHYS 251	Dynamics	
ENGR 363	Mechanics of Solids	
PHYS 250	Statics	
Other Engineering Courses (total of 7 credit hours)		7
MCEN 3030	Computational Methods	
MCEN 3047	Data Analysis and Experimental Methods	
Biomedical Courses (total of 27 credit hours)		27
HWTR 100	First Year Seminar	
ENGR 161	COMPUTER-AIDED DESIGN	
ENGR 162	Fabrication	
ENGR 201	Biomaterials	
ENGR 210	Biomedical Engineering Principles and Methods	
BMEN 3010	Biotransport	
BMEN 3030	Bioinstrumentation	
BMEN 4010	BME Capstone Design I	
BMEN 4020	BME Capstone Design II	
BMEN 4117	Anatomy and Physiology for BME	
Electrical Courses (total of 3 credit hours)		3
MCEN 3017	Circuits and Electronics for Mechanical Engineers	
Engineering Technical Electives (total of 9 credit hours)		9
Engineering coursework not already in degree (6 credits must be 3000-level or higher)		
General Technical Electives (total of 9 credit hours)		9
Selected engineering, science, math, computer science, or engineering management courses at 3000-level or higher not already in degree		
Humanities & Social Sciences		15
Complete 15 credits of approved humanities and social science coursework, 6 credits of which must be upper-division		
Free Electives		8
Complete enough electives to bring the total credit hours toward the degree to 128. Normally this is 8 credit hours but could vary (for example due to transfer credits). Please consult with your academic advisor or Partnership Program Director with questions		
Note		
1 credit of either H&SS or free elective must be a CU Boulder course to meet the residency requirement		
Total Credits		**128**

Course	Title	Credits
Year One		
Fall		
CHEM 111 & CHEM 112	General Chemistry I (GT-SC2) and General Chemistry Laboratory I (GT-SC1)	4
HWTR 100	First Year Seminar	1
MATH 151	Calculus I (GT-MA1)	4
PHYS 190 & PHYS 185	General Physics I (GT-SC2) and Laboratory Physics I (GT-SC1)	4
	Credits	**13**
Spring		
CHEM 113	General Chemistry II	3
ENG 102	Writing and Rhetoric I (GT-CO1)	3
ENGR 130	Introduction to Engineering Computing	3
MATH 251	Calculus II	4
PHYS 191 & PHYS 186	General Physics II (GT-SC2) and Laboratory Physics II (GT-SC1)	4
	Credits	**17**

Year Two		
Fall		
BIOL 150	Biological Principles (with laboratory) (GT-SC1)	4
ENGR 161	COMPUTER-AIDED DESIGN	3
ENGR 162	Fabrication	1
ENGR 210	Biomedical Engineering Principles and Methods	3
MATH 252	Calculus III	4
PHYS 250	Statics	3
	Credits	**18**
Spring		
ENG 302	Technical Writing	3
ENGR 201	Biomaterials	3
ENGR 251 or PHYS 251	Dynamics or Dynamics	3
ENGR 363	Mechanics of Solids	3
MATH 358	Introduction to Differential Equations and Linear Algebra	4
	Credits	**16**
Year Three		
Fall		
BMEN 3010	Biotransport	3
BMEN 4117	Anatomy & Physiology for BME	3
MCEN 3017	Circuits & Electronics for ME	3
MCEN 3030	Computational Methods	3
Elective	H&SS Elective (Lower-Division) [1]	3
	Credits	**15**
Spring		
BMEN 3030	Bioinstrumentation	4
MCEN 3047	Data Analysis & Experimental Methods	4
Elective	Engineering Technical Elective	3
Elective	General Technical Elective	3
Elective	H&SS Elective (Lower-Division) [1]	3
	Credits	**17**
Year Four		
Fall		
BMEN 4010	Biomedical Engineering Design I	3
Elective	Engineering Technical Elective	3
Elective	General Technical Elective	3
Elective	H&SS Elective (Lower-Division) [1]	3
Elective	H&SS Elective (Upper-Division) [1]	3
	Credits	**15**
Spring		
BMEN 4020	Biomedical Engineering Design II	3
Elective	Engineering Technical Elective	3
Elective	General Technical Elective	3
Elective	H&SS Elective (Upper-Division) [1]	3
Elective	Free Elective [1]	5
	Credits	**17**
	Total Credits	**128**

[1] NOTE: 1 credit of either H&SS or free elective must be a CU Boulder course to meet the residency requirement.