



Front Range Community College (FRCC) to CU-Denver Transfer Advising Guide for Bioengineering (B.S.)

College of Engineering, Design and Computing
[Bioengineering Department Website](#)

Program Overview:

Bioengineering is a highly interdisciplinary field that combines the mathematical and physical sciences with engineering principles to study biology, physiology, medicine, behavior and health. Bioengineering is emerging as the leading discipline at the interface of clinical sciences, basic research, and engineering and maintains focus on catalyzing technology to cure and prevent disease. The undergraduate bioengineering program provides training at both the Denver campus and the Anschutz Medical Campus.

The BS Bioengineering program emphasizes the professional competencies of leadership, communication, presentation and critical problem solving. These learning goals and the dual-campus model provide robust training for a variety of careers in the fast-growing biomedical and biotechnology industry. Graduates will also have an excellent foundation for continued education in science, engineering and medicine.

Admission Requirements:

[Please see this website for more information regarding CU Engineering admission criteria.](#)

FRCC Course Options: (the following courses will apply directly to the degree)

* **BOLD denotes admission requirement courses**

<u>Core Curriculum:</u> (Please consult CU Denver Core Curriculum and Transferology)		<u>FRCC Credits</u>
ENG 121	English Composition 1	(3 credits)
ENG 122	English Composition 2	(3 credits)
Arts & Humanities	Two Courses (GT-AH1, AH2, AH3, or AH4)	(6 credits)
Social & Behavior Science	Two courses (GT-SS1, GT-SS2, or GT-SS3)	(6 credits)
History	GT-HI1	(3 credits)
 <u>Mathematics:</u>		
MAT 201*	Calculus 1	(4 credits)
MAT 202*	Calculus 2	(4 credits)
MAT 204 OR 203	Calculus 3 with Eng Applications OR Calculus 3	(4 or 5 credits)
MAT 266 OR 265/255	Differential Equations with Linear Algebra OR Differential Equations/Linear Algebra	(4 or 3 credits)
 <u>Science:</u>		
CHE 111	General Chemistry I	(5 credits)
CHE 112	General Chemistry 2	(5 credits)
CHE 211	Organic Chemistry 1	(5 credits)
PHY 211*	Calculus Based Physics 1	(5 credits)
PHY 212	Calculus Based Physics 2	(5 credits)
BIO 111	General College Biology 1	(5 credits)
BIO 112	General College Biology 2	(5 credits)

Suggested Five-Year Course Plan for Bioengineering

This is a suggested guide of coursework only and is subject to change. Students should consult with a CU Denver academic advisor as soon as possible prior to transferring. CU Denver courses may be reverse transferred to count toward a community college associate degree. Course credits shown below reflect those awarded by the institution offering the course.

* denotes courses that do not apply to the B.S. degree

Front Range Community College (FRCC) first two years

Fall Semester 1

Course	Course Title	Credits
MAT 121	College Algebra*	4
ENG 121	English Composition 1	3
BIO 111	General College Biology 1	5
	Art/Hum/Hi	3
	Total Credits	15

Spring Semester 1

Course	Course Title	Credits
MAT 166	Pre-Calculus*	5
CHE 111	College Chemistry 1 (with lab)	5
ENG 122	English Composition 2	3
	Art/Hum/Hi	3
	Total Credits	16

Fall Semester 2

Course	Course Title	Credits
MAT 201	Calculus 1	5
CHE 112	College Chemistry 2 (with lab)	5
BIO 112	General College Biology 2	5
	Total Credits	15

Spring Semester 2

Course	Course Title	Credits
MAT 202	Calculus 2	5
PHY 211	Physics 1	5
CHE 211	Organic Chemistry I	5
	Total Credits	15

CU-Denver (last three years)

Fall Semester 3 (Downtown Campus)

Course	Course Title	Credits
ENGR 1200	Fundamentals of Engineering Design Innovation	3
BIOE 2010	Intro to Programming for Bioengineers	2
MATH 3195	Linear Algebra and Differential Equations	4
	Cultural Diversity	3
PHYS 2331/2341	General Physics II with Lab	5
	Total Credits	17

CU-Denver (last three years)...continued

Spring Semester 3 (Downtown Campus)

Course	Course Title	Credits
BIOE 1020	Bioengineering Design & Prototyping II	3
BIOE 2020	Intro to Comp Methods for Bioengineers	2
MATH 2421	Calculus 3	3
SOCY 1001	Intro to Sociology (recommended)	3
PSCY 1000	Intro to Psychology I (recommended)	3
	Total Credits	14

Fall Semester 4 (Anschutz Medical Campus)

Course	Course Title	Credits
BIOE 3010	Bioinstrumentation	3
BIOE 3020	Intro to Biomechanical Analysis	3
BIOE 3030	Intro to Biomaterials	3
BIOE 3040	Physiology for Bioengineering	3
BIOE 3070	Bioengineering Lab I	3
	Total Credits	15

Spring Semester 4 (Anschutz Medical Campus)

Course	Course Title	Credits
BIOE 3050	Cell & Molecular Bioengineering	3
BIOE 3051	Cell & Molecular Bioengineering Lab	1
BIOE 3060	Biostatistics, Measurement, and Analysis	3
BIOE 3071	Bioengineering Lab II	3
BIOE 3090	Introduction to BioDesign	3
	Total Credits	13

Fall Semester 5 (Anschutz Medical Campus)

Course	Course Title	Credits
BIOE 4035	Undergraduate BioDesign II	3
BIOE	Technical Elective	3
BIOE	Technical Elective	3
BIOE	Technical Elective	3
	Art/Hum/Hi	3
	Total Credits	15

Spring Semester 5 (Anschutz Medical Campus)

Course	Course Title	Credits
BIOE 4045	BioDesign III	3
BIOE	Technical Elective	3
	Total Credits	6