



Community College of Aurora (CCA) 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.](#)

CCA Course Summary: (the following courses will apply directly to the degree)

Core Curriculum: (Please consult [CU Denver Core Curriculum](#) and [Transferology](#)) CCA Credits

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)

Mathematics:

MAT 201	Calculus 1	(5 credits)
MAT 202	Calculus 2	(5 credits)
MAT 203	Calculus 3	(4 credits)
MAT 204	Calculus 3 with Engineering Applications	(5 credits)
MAT 255	Linear Algebra	(3 credits)
MAT 265	Differential Equations	(3 credits)
MAT 266	Differential Equations with Linear Algebra	(4 credits)

Science:

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

Community College of Aurora (CCA) 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
	Arts/Hum/Hi	3
	Arts/Hum/Hi	3
	Total Credits	18

Spring Semester 1

Course	Course Title	Credits
MAT 122 or 166	Trigonometry or Pre-Calculus*	3-5
CHE 111	College Chemistry 1 (with lab)	5
ENG 122	English Composition 2	3
	Art/Hum/Hi	3
	Total Credits	14-16

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
SOC 101	Intro to Sociology recommended	3
	Total Credits	18

Spring Semester 2

Course	Course Title	Credits
MAT 202	Calculus 2	5
PHY 211	Physics 1	5
CHE 211	Organic Chemistry I	5
PHY 101	General Psychology I recommended	3
	Total Credits	18

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
PHYS 2331/2341	General Physics II with Lab	5
	Total Credits	14

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
	Cultural Diversity	3
	Total Credits	13

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
	Total Credits	12

Spring Semester 5 (Anschutz Medical Campus)

Course	Course Title	Credits
BIOE 4045	BioDesign III	3
BIOE	Technical Elective	3
	<i>Although not required, many students complete minors in Mathematics, Biology, or Chemistry and remain full-time.</i>	
	Total Credits	6