



FRCC (all campuses) to CU-Boulder

Transfer Advising Guide for Mechanical Engineering (B.S.)

[Mechanical Engineering Department Website](#)

Program Overview:

Mechanical engineers use the principles of mechanics and energy conservation to design, manufacture, and test mechanical devices. They develop power-producing and power-using machines as well as new materials and manufacturing processes. Many mechanical engineers work in fields related to design, aerospace, automotive industries, energy, bioengineering, and research and manufacturing.

Admission Requirements:

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

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

***BOLD denotes admission requirement courses**

Mathematics:

MAT 2410*	Calculus 1	(5 credits)
MAT 2420*	Calculus 2	(5 credits)
MAT 2431	Calculus 3 with Engineering Applications	(5 credits)
MAT 2562	Differential Equations/Linear Algebra	(4 credits)

Science:

CHE 1111*	General Chemistry 1	(5 credits)
PHY 2111*	Calc-based Physics 1	(5 credits)
PHY 2112	Calc-based Physics 2	(5 credits)
<i>^also counts for admission requirement in place of CHE 111</i>		
PHY 2113	Physics 3	(3 credits)

Engineering/Computer Science:

EGG 1000	Introduction to Engineering	(1 credit)
EGG 1060 (preferred)	Introduction to Engineering Computing	(4 credits)
<u>OR</u> CSC 1060 (C++)	Computer Science 1	(4 credits)
CAD 2455+MAC 1042	Solid Works and Machining Lab	(4 credits total)
EGG 1040	Engineering Projects	(4 credits)
EGG 2030	Solid Mechanics	(3 credits)
EGG 2011	Statics	(3 credits)
EGG 2012	Dynamics	(3 credits)

Humanities and Social Sciences (H/SS):

- Up to nine (9) credit hours at the lower division (1000-2000) level
 - Six (6) credit hours the upper-division level – *typically taken at CU Boulder*
- Please consult our [CCCS humanities and social science list](#) when selecting these classes

Suggested Five-Year Course Plan for Mechanical Engineering

This is a suggested guide of coursework only and is subject to change. Always consult with your academic advisor for graduation planning purposes.

*denotes courses that do not apply directly to degree, other than as free electives

Front Range Community College (two years)

Fall Semester 1

Course	Course Title	Credits
MAT 1440	Pre-Calculus*	5
ENG 1021	English Composition 1 (H/SS)	3
EGG 1000	Intro to Engineering*	1
	Humanities/Social Science	3
	Total Credits	14

Spring Semester 1

Course	Course Title	Credits
MAT 2410	Calculus 1	5
CHE 1111	College Chemistry 1 (with lab)	5
EGG 1060	Engineering Computing	4
	Total Credits	14

Fall Semester 2

Course	Course Title	Credits
MAT 2420	Calculus 2	5
PHY 2111	Physics 1	5
CAD 2455+ MAC 1042	Solid Works 3D Modeling AND MAC machining lab	4
	Total Credits	14

Spring Semester 2

Course	Course Title	Credits
MAT 2431	Calculus 3 (Engr. Applications)	5
PHY 2112	Physics 2	5
EGG 1040	Engineering Projects	3
	Humanities/Social Science	3
	Total Credits	16

CU-Boulder (last three years)

Fall Semester 3

Course	Course Title	Credits
MCEN 2000	Professionalism Seminar	1
MCEN 2023	Statics and Structures	3
PHYS 2130	Physics 3	3
APPM 2360	Differential Eq./Linear Alg.	4
MCEN 2024	Materials Science	3
	Total Credits	14

Spring Semester 3

Course	Course Title	Credits
MCEN 2043	Dynamics	3
MCEN 3012	Thermodynamics	3
ECEN 3010	Circuits and Electronics	3
MCEN 3030	Computational Methods	3
	Total Credits	12

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

Fall Semester 4

Course	Course Title	Credits
MCEN 3021	Fluid Mechanics	3
MCEN 2063	Solid Mechanics	3
MCEN 3025	Component Design	3
MCEN 3047	Data & Measurements	4
	Total Credits	13

Spring Semester 4

Course	Course Title	Credits
	Engineering Writing Course	3
MCEN 3022	Heat Transfer	3
MCEN 4026	Manufacturing Systems	3
	UD Humanities/Social Science	3
	Total Credits	12

Fall Semester 5

Course	Course Title	Credits
MCEN 4045	Senior Design 1	3
MCEN 4043	System Dynamics	3
MCEN 3032	Thermodynamics 2	3
	General Technical Elective	3
	UD Humanities/Social Science	3
	Total Credits	15

Spring Semester 5

Course	Course Title	Credits
MCEN 4085	Senior Design 2	3
	ME Technical Elective	3
	ME Technical Elective	3
	General Technical Elective	3
	Total Credits	12