



CCA 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](#)

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

**BOLD denotes admission requirement courses*

Mathematics:

MAT 201*	Calculus 1	(5 credits)
MAT 202*	Calculus 2	(5 credits)
MAT 204	Calculus 3 w/Engineering Applications	(5 credits)
MAT 266	Differential Equations/Linear Algebra	(4 credits)

Science:

CHE 111*	General Chemistry 1	(5 credits)
PHY 211	Calc-based Physics 1	(5 credits)
PHY 212	Calc-based Physics 2	(5 credits)

^PHY 211 will also count for admission requirement in place of CHE 111

Engineering/Computer Science:

CSC 160	Computer Science 1	(4 credits)
CAD 255	Solid Works	(3 credits)
EGG 106	Robotics	(1 credit)
EGG 151	Experimental Design	(2 credits)

Humanities and Social Sciences (H/SS):

- Minimum of nine (9) credit hours at the lower division (100-200) level
 - Six (6) credit hours at 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

Community College of Aurora

Fall Semester 1

Course	Course Title	Credits
MAT 121	College Algebra*	4
CHE 101	Intro to Chemistry (with Lab)*	5
ENG 121	English Composition*	3
	Intro to Engineering Workshop*	0
	Humanities/Social Science	3
	Total Credits	15

Spring Semester 1

Course	Course Title	Credits
MAT 166	Pre-Calculus*	5
ENG 122	English Composition 2 (H/SS)	3
CSC 119	Intro to Programming*	3
EGG 106	Robotics	1
	Humanities/Social Science	3
	Total Credits	15

Fall Semester 2

Course	Course Title	Credits
MAT 201	Calculus 1	5
CHE 111	Chemistry 1 (with lab)	5
CSC 160	Computer Science 1	4
EGG 132*	Data Analysis	1
	Total Credits	15

Spring Semester 2

Course	Course Title	Credits
MAT 202	Calculus 2	5
PHY 211	Physics 1	5
CAD 255	Solid Works	3
EGG 151	Experimental Design	2
	Total Credits	15

CU-Boulder (last three years)

Fall Semester 3

Course	Course Title	Credits
APPM 2350	Calculus 3	4
PHYS 1120	Physics 2	4
PHYS 1140	Experimental Physics	1
MCEN 2023	Statics and Structures	3
MCEN 2000	Professionalism Seminar	1
	Total Credits	13

Spring Semester 3

Course	Course Title	Credits
APPM 2360	Differential Eq./Linear Alg.	4
MCEN 3012	Thermodynamics	3
ECEN 3010	Circuits and Electronics	3
MCEN 2024	Materials Science	3
	Total Credits	13

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

Fall Semester 4

Course	Course Title	Credits
MCEN 3021	Fluid Mechanics	3
MCEN 2043	Dynamics	3
MCEN 2063	Solid Mechanics	3
MCEN 3030	Computational Methods	3
	Engineering Writing Course	3
	Total Credits	15

Spring Semester 4

Course	Course Title	Credits
MCEN 3025	Component Design	3
MCEN 3022	Heat Transfer	3
MCEN 3047	Data & Measurements	4
	General Technical Elective	3
	UD Humanities/Social Science	3
	Total Credits	16

Fall Semester 5

Course	Course Title	Credits
MCEN 4045	Senior Design 1	3
MCEN 4043	System Dynamics	3
MCEN 3032	Thermodynamics 2	3
MCEN 4026	Manufacturing Systems	3
PHYS 2130	Physics 3	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
	UD Humanities/Social Science	3
	Total Credits	15