



CCD to CU-Boulder Transfer Advising Guide for Mechanical Engineering (B.S.)

College of Engineering and Applied Science

[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](#)

CCD 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) |

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

Engineering/Computer Science:

| | | |
|-------------|--|-------------|
| CSC 160 | Computer Science 1 | (4 credits) |
| CAD 255-259 | Solid Works (<i>choose one course</i>) | (3 credits) |
| EGG 140 | Engineering Projects | (4 credits) |

Humanities and Social Sciences (H/SS):

- Up to twelve (12) credit hours at the lower division (100-200) 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

Community College of Denver (first two years)

Fall Semester 1

| Course | Course Title | Credits |
|---------|---|-----------|
| MAT 121 | College Algebra* | 4 |
| CHE 101 | Intro to Chemistry* | 5 |
| ENG 121 | English Composition 1 * | 3 |
| | Humanities/Social Science | 3 |
| | Total Credits | 13 |

Spring Semester 1

| Course | Course Title | Credits |
|---------|--------------------------------|-----------|
| MAT 166 | Pre-Calculus* | 5 |
| CHE 111 | College Chemistry 1 (with lab) | 5 |
| CSC 119 | Intro to Programming* | 3 |
| | Total Credits | 16 |

Fall Semester 2

| Course | Course Title | Credits |
|-------------|--|-----------|
| MAT 201 | Calculus 1 | 5 |
| CSC 160 | Computer Science 1 | 4 |
| CAD 255-259 | Solid Works 3D Modeling (only need one course) | 3 |
| | Humanities/Social Science | 3 |
| | Total Credits | 15 |

Spring Semester 2

| Course | Course Title | Credits |
|---------|---|-----------|
| MAT 202 | Calculus 2 | 5 |
| PHY 211 | Physics 1 | 5 |
| | Humanities/Social Science | 3 |
| | Total Credits | 13 |

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 |
| GEEN 3400 | Engineering Projects | 3 |
| MCEN 2024 | Materials Science | 3 |
| | Total Credits | 16 |

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 |