



FOR CCCS TRANSFER STUDENTS

PROGRAM OVERVIEW

Mechanical engineering offers interesting and challenging career opportunities in research, design development, manufacturing, testing and marketing for either private or government. As a mechanical engineer, you may work on products such as engines, transmissions, compressors, pumps, computer disk drives, CAD/CAE software, oil field drilling rigs, missiles, space satellites, earth moving equipment, container manufacturing machines and medical equipment.

Bachelor of Science (BS) in mechanical engineering curriculum begins with a strong emphasis on mathematics, physics and chemistry. It continues with a concentration in engineering sciences, including solid and fluid mechanics; thermodynamics, heat and mass transport; materials; and systems analysis and control. It concludes with laboratory and design courses which demonstrate the ways in which scientific knowledge is applied in the design and development of useful devices and manufacturing processes.

ACADEMIC ADVISING

Academic Advising is mandatory for all ME/BS and pre-engineering students. The College Advising hold is placed every semester on each undergraduate student’s account despite the GPA. This hold is removed after the advising appointment. The academic advisor might change every semester depending on your year of study and academic standing. To schedule please email mechanical@ucdenver.edu

Students admitted to the College of Engineering, Design and Computing (CEDC) who have declared a major are required to meet with an advisor in their specific department and should contact that department to schedule an appointment.

Students admitted to the College of Engineering, Design and Computing (CEDC) who have not declared a major are required to meet with the CEDC advisor.

Mechanical Engineering

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Visit the department website [here](#)
North Classroom 2024
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GENERAL GRADUATION REQUIREMENTS & POLICIES

All CU Denver CEDC MECH students are required to complete the following minimum general graduation requirements:

1. Complete a minimum of 128 credit hours
2. Achieve a minimum 2.0 CU cumulative grade point average (GPA) and 2.0 minimum GPA in engineering coursework
3. Complete all college and major requirements
4. Residency: complete a minimum of 30 CEDC hours as a declared CEDC student in good standing at CU Denver
5. Terminal Residency: complete at least the final two semesters as an enrolled CEDC student

PROGRAM REQUIREMENTS & POLICIES

The following program requirements are based on degree requirements for the current Catalog year at CU Denver and are subject to change. Students are responsible for completing degree requirements based on the Catalog year for which they are admitted.

Students are responsible for meeting with the faculty advisor in their department to confirm major requirements. Students completing the Mechanical Engineering B.S. Degree are required to complete the following minimum program requirements:

1. Complete 24 semester hours of **CU Denver Core Curriculum coursework.**
2. Complete a minimum of 31 semester hours of **required mathematics and basic science courses with a grade of C- (2.0) or better in each course.**
3. Complete a minimum of 73 semester hours of **MECH core curriculum coursework, including 12 credit hours of elective coursework in an approved mechanical engineering track. All prerequisite courses must be completed with a grade of C- or better.**

COURSEWORK THAT CAN BE COMPLETED AT PREVIOUS INSTITUTION

The table below shows the courses required for the Mechanical Engineering B.S. Degree and shows which required courses can be satisfied by equivalent Colorado Community College System (CCCS) courses that students can complete prior to transferring to CU Denver. To determine the equivalencies of courses to be completed at non-CU Denver institutions, students can visit www.transferology.com. It is critical students connect with a CU Denver academic advisor to ensure planned courses will transfer and apply to CU Denver degree requirements. All non-CU Denver coursework must be completed with a C- or better to be eligible for transfer.



CU Denver Requirements	CU Denver Credits	Colorado Community College System (CCCS) Equivalent Courses	CCCS Credits
CCCS COURSEWORK			
Required CU Denver Core Curriculum Requirements	24	CU Denver Core Curriculum	21
ENGL 1020 – Core Composition I	3	ENG 1021	3
ENGL 2030 – Core Composition II	3	ENG 1022	3
Arts	3	GT-AH*	3
Humanities	3	GT-AH or GT-HI*	3
Behavioral Science	3	GT-SS*	3
Social Sciences	3	GT-SS or GT-HI*	3
International Perspectives	3	Additional GT-AH, HI*	3
Cultural Diversity	3	<i>To be completed at CU Denver. This requirement must be completed with an upper-division course, and CCCS courses will not apply.</i>	
Required Mathematics and Basic Sciences Courses	31		31
MATH 1401 Calculus I	4	MAT 2410	4
MATH 2411 Calculus II	4	MAT 2420	4
MATH 2421 Calculus III	4	MAT 2430	4
MATH 3195 Linear Algebra and Differential Equations	4	MAT 2562 (or MAT 2540 and MAT 2560)	4
ENGR 1130 Engineering Chemistry with lab	5	CHE 1111	5
PHYS 2311 & 2321 General Physics I with lab	5	PHY 2111	5
PHYS 2331 & 2341 General Physics II with lab	5	PHY 2112	5
Required Mechanical Engineering Courses	73		9
MECH 1025 Mechanical Engineering Graphics and CAD	3	CAD 2455	3
MECH 1100 Fundamentals of Computational Innovation	3	CSC 1060	4
MECH 1200 Fundamentals of Engineering Design Innovation	3	EGG 1040 or EGT 1110	4
MECH 2023 Statics	3	EGG 2011	3
MECH 2033 Dynamics	3	EGG 2012	3
CU DENVER COURSEWORK			
MECH 1045 Manufacturing Processes Design	3	<i>Prerequisite: MECH 1025</i>	3
MECH 2023 Statics	3	<i>Prerequisites: PHYS 2311; Co-Requisite: MATH 2411</i>	3
MECH 2024 Introduction to Materials Science	3	<i>Prerequisite: ENGR 1130</i>	3
MECH 2033 Dynamics	3	<i>Prerequisite: MECH 2023</i>	3
MECH 2034 Properties of Engineering Materials Lab	1	<i>Co-Requisite: MECH 2024</i>	1
MECH 3010 Elementary Numerical Methods	3	<i>Pre-Req: MECH 1100; Co-Req: MATH 3195 or (MATH 3191 & MATH 3200)</i>	3
MECH 3012 Thermodynamics	3	<i>Prerequisites: MATH 1401 and PHYS 2311</i>	3
MECH 3021 Introduction to Fluid Mechanics	3	<i>Prerequisite: MATH 2421, MECH 2033, and MECH 3012</i>	3
MECH 3027 Measurements	3	<i>Prereq: ELEC 3030 and MATH 3195 or (MATH 3191 and MATH 3200)</i>	3
MECH 3028 Measurements Lab	1	<i>Co-Requisite: MECH 3027</i>	1
ELEC 3030 Electric Circuits and Systems	3	<i>Prerequisite: PHYS 2331 and MATH 2421</i>	3
MECH 3031 Fluids/Thermal Lab	1	<i>Co-Requisite: MECH 3021</i>	1
MECH 3032 Electric Circuits and Systems Lab	1	<i>Co-Requisite: ELEC 3030</i>	1
MECH 3035 Design of Mechanical Elements	3	<i>Prerequisite: MECH 1200, MECH 2024, and MECH 3043</i>	3
MECH 3042 Heat Transfer	3	<i>Prerequisite: MECH 3021</i>	3
MECH 3043 Strengths of Materials	3	<i>Prerequisite: MECH 2023</i>	3
MECH 4023 System Dynamics	3	<i>Pre-requisites: MECH 2033, MECH 3010, Co-Requisite: MECH 3043</i>	3
MECH 4035 Senior Design I	3	<i>Prerequisite: 43 hours of MECH courses, including MECH 3035</i>	3
MECH 4045 Senior Design II	3	<i>Prerequisite: MECH 4035</i>	3
MECH 4142 Thermal Systems Design	3	<i>Prerequisite: MECH 3010, MECH 3012, and MECH 3042</i>	3
Engineering Technical Electives: choose four approved by your advisor 3000+ engineering track electives taught within the Department of Mechanical Engineering.	12	<i>Check individual courses for prerequisites</i>	
Total Program Hours:	128		

***The applicability of Guaranteed Transfer (GT Pathways) courses to specific CU Denver Core Curriculum requirements involves completion of a block of five courses: two GT-AH courses; one GT-HI course; one GT-SS course; and one additional GT-AH, GT-HI, or GT-SS course.**

Students interested in completing an Associate (A.A. or A.S.) Degree or a Colorado Statewide Transfer Articulation Agreement or Degree with Designation (DWD) must work with their community/junior college academic advisor to create an academic plan that accounts for all degree or transfer articulation agreement requirements. Colorado Community College Students may also explore the option to complete Reverse Transfer at CU Denver.

SAMPLE ACADEMIC PLAN – COURSEWORK TO BE COMPLETED AT CU DENVER

The following academic plan is a *sample* pathway to completing degree requirements for this major. Students should tailor this plan based on previously completed college coursework (e.g., AP, dual/concurrent enrollment, and transfer credit), course availability, and individual preferences related to course load, schedules, or add-on programs such as minors or double-majors. **Students deviating from this plan must fulfill course prerequisites and must meet with the faculty advisor in their department to confirm degree requirements.** Students intending to transfer to CU Denver to pursue a Mechanical Engineering B.S. degree should note the following:

1. The College of Engineering, Design and Computing has a competitive admissions process. Student may be admitted to CU Denver but not the College of Engineering, Design and Computing. Such students may work with CU Denver’s Academic Success and Advising Center to identify an alternative major and/or program of study.
2. Colorado Community College students should transfer to CU Denver once they have met the College of Engineering, Design and Computing’s admission requirements. They should not necessarily complete an associate’s degree.
3. Pre-calculus courses will not transfer into the ME/BS degree, but are required to take if the student is not Calculus ready.

FOR TRANSFER STUDENTS

Year Three	Semester 5 (Fall)	CRS
	MECH 1045	3
	MECH 2023	3
	MECH 2024	3
	MECH 2034	1
	MECH 3012	3
Total semester hours:		13

Semester 6 (Spring)	CRS	
MECH 2033	3	
ELEC 3030	3	
MECH TECH ELECTIVE	3	
MECH 3032	1	
MECH 3010	3	
Total semester hours:		13

Year Four	Semester 7 (Fall)	CRS
	MECH 3021	3
	MECH 3031	1
	MECH 3043	3
	MECH 3027	3
	MECH 3028	1
	MECH TECH ELEC	3
Total semester hours:		14

Semester 8 (Spring)	CRS	
MECH 3035	3	
MECH 3042	3	
MECH 4023	3	
MECH TECH ELECTIVE	3	
Total semester hours:		12

Year Five	Semester 9 (Fall)	CRS
	MECH 4035	3
	ENGR 3400	3
	MECH 4142	3
	MECH TECH ELEC	3
Total semester hours:		12

Semester 10 (Spring)	CRS	
MECH 4045	3	
Total semester hours:		3

Total CU Denver Hours: 67