CIVIL ENGINEERING PARTNERSHIP PROGRAM

2021 – 2022

www.coloradomesa.edu/engineering

The Bachelor of Science Degree in Civil Engineering obtained through the Engineering Partnership Program is conferred by the University of Colorado Boulder. Lower-division coursework is completed through Colorado Mesa University before applying for admission to the University of Colorado Boulder. The entire program is completed on the campus of Colorado Mesa University. A student may apply for admission to the University of Colorado Boulder when the criteria of one of the following scenarios is satisfied:

Scenario One

- Complete the course sequence listed on the current Degree Plan for freshman and sophomore years at Colorado Mesa University
- Maintain a combined GPA in these courses not lower than 3.0
- Maintain an overall Colorado Mesa University cumulative GPA not lower than 3.0

Scenario Two

- Complete a two-course sequence in calculus at Colorado Mesa University with a grade of "B" or higher
- Complete two physical science courses at Colorado Mesa University (calculus-based physics and/or college chemistry) with a grade of "B" or higher
- Maintain an overall GPA of 3.0 or better for all courses at Colorado Mesa University

Student Outcomes. Graduates of this program will have...

1. an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
2. an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
3. an ability to communicate effectively with a range of audiences
4. an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
5. an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
6. an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
7. an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Program Objectives. Within five years, alumni will…

1. be successfully employed in engineering, science or technology careers.
2. Be assuming management or leadership roles.
3. engage in continual learning by pursuing advanced degrees or additional educational opportunities through coursework, professional conferences and training, and/or participation in professional societies.
4. pursue professional registration or other appropriate certifications.
5. be engaged in activities that provide benefit to communities.

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The Bachelor of Science Degree in Civil Engineering requires:

- Transfer to the University of Colorado Boulder of all coursework listed on the plan of study
- At least 45 credits earned from the University of Colorado Boulder (residency requirement)
- A minimum of 128 credits earned to graduate
- A cumulative and major GPA of at least 2.25 (from entirely CU Boulder coursework as a student's GPA does not transfer from non-CU institutions)
- Satisfactory completion of all Minimum Academic Preparation Standards (MAPS) deficiencies
- Successful completion of an outcome measurement prior to graduation (take the FE Exam)

AP & IB Credit

Engineering Partnership students must achieve the scores required of CU Boulder for AP and IB credit. An AP score of 5 is required on Physics C: Mechanics to receive credit for PHYS 131 & 131L. This score is higher than the score required for credit from CMU.

MAPS (Minimum Academic Preparation Standards) for foreign language

MAPS content areas are usually fulfilled by high school coursework, but sometimes students have to address "MAPS deficiencies" with their college coursework. Typically, one unit equals one year of high school study or one semester of college course work. For engineering students, those who experience a MAPS deficiency most often need to take additional foreign language courses. The good news is that these courses can do "double duty" by fulfilling MAPS as well as humanities/social sciences requirements. The MAPS requirement for foreign language is:

3 units in a single foreign language

or

2 units in each of 2 separate foreign languages

What this requirement means is that students must demonstrate written and oral language proficiency through the third-level of a single foreign language, where third-level means third full year of high school or third semester college course. Alternatively, a student must demonstrate second-level proficiency in two different foreign languages (e.g., complete 2 years of high school French + 2 semesters of college-level Spanish).

The full policy on MAPS can be found on the CEAS Degree Requirement website.

Academic Calendar

The Engineering Partnership Program follows the calendar of Colorado Mesa University for semester start and end dates as well as breaks. Add, drop, and withdrawal dates may differ and can be found on the CU Boulder Registrar's Website.

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COURSES

Mathematics & Science:		**33 semester hours**
MATH 135	Engineering Calculus I	4
MATH 136	Engineering Calculus II	4
MATH 253	Calculus III	4
MATH 236	Differential Equations & Linear Algebra	4
PHYS 131	Fundamental Mechanics	4
PHYS 131L	Fundamental Mechanics Lab*	1
PHYS 132	Electromagnetism & Optics	4
CHEM 151	Engineering Chemistry	4
CHEM 151L	Engineering Chemistry Lab*	1
	Basic Science Elective*:	3
	BIOL 102/102L Plant and Animal Biodiversity (4-cr)	
	BIOL 105/105L Attributes of Living Systems (4-cr)	
	BIOL 209 Human Anatomy and Physiology (3-cr)	
	ENVS 101 Introduction to Environmental Science (3-cr)	
	GEOL 103 Weather and Climate (3-cr)	
	GEOL 104 Oceanography (3-cr)	
	GEOL 105 Geology of Colorado (3-cr)	
	GEOL 107 Natural Hazards and Environmental Geology (3-cr)	
	GEOL 108 Water, People and Environment (3-cr)	
	GEOL 111/11lL Principles of Physical Geology (4-cr)	
	GEOL 113/113L Field-Based Intro to Physical Geology (4-cr)	
	GEOL 250 Environ Geology (3-cr)	

Computer Science:		**4 semester hours**
CSCI 130	Introduction to Engineering Computing	4

Writing:		**3 semester hours**
ENGL 325	Writing for Engineers	3

* Courses with a lab component must be taken concurrently

Basic Engineering:		**22 semester hours**
CIVE 127	Engineering Drawing	3
CIVE 212	Introduction to Geomatics	3
CIVE 313	Theoretical Fluid Mechanics	3
ENGR 101	Introduction to Engineering	1
ENGR 140	1st-Year Engineering Projects	3
ENGR 261	Statics & Structures	3
ENGR 263	Mechanics of Solids	3
ENGR 343	Dynamics	3

Core Engineering Courses:		**39 semester hours**
CVEN 3227	Probability & Statistics	3
CVEN 3246	Intro to Construction	3
CVEN 3256	Construction Equipment & Methods	3
CVEN 3323	Hydraulic Engineering	3
CVEN 3414	Fundamentals of Environmental Engr	3
CVEN 3424	Water & Wastewater Treatment	3
CVEN 3525	Structural Analysis	3
CVEN 3708	Geotechnical Engineering	3
CVEN 4333	Engineering Hydrology	3
CVEN 4545	Steel Design	3
CVEN 4897	Professional Issues	2
CVEN 4899	CE Design Project	4
MCEN 3012	Thermodynamics	3

Humanities & Social Science Elect:		**15 semester hours**
	Humanities & Social Sciences	9
	Upper-Division Humanities & Social Sciences	6

Technical Electives:		**12 semester hours**
	Upper-Division Engineering, Computer Science, Math, and Science	6
CVEN ????	Civil Engineering Electives (EMEN 4100, 4110, or 4120 may count as one CVEN technical elective)	6

TOTAL CREDITS **128**

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Acceptable Course Substitutions
MATH 151 Calculus I (5-credits) for MATH 135 Engineering Calculus I (4-credits)
MATH 152 Calculus II (5-credits) for MATH 136 Engineering Calculus II (4-credits)
MCEN 3021 Fluid Mechanics (3-credits) for CIVE 313 Theoretical Fluid Mechanics (3-credits)
CHEM 131 General Chemistry I (4-credits) & CHEM 132 General Chemistry II (4-credits) for CHEM 151 Engineering Chemistry (4-credits)
CHEM 131L General Chemistry Laboratory I (1-credit) & CHEM 132L General Chemistry Laboratory II (1-credit) for CHEM 151L Engineering Chemistry Laboratory (1-credit)

Humanities & Social Science Electives
See: https://www.coloradomesa.edu/engineering/degrees/hssacceptableclasses2021081.pdf

General Technical Electives
CMU 300- and 400-level courses in the following subjects are considered General Technical Electives: CHEM, CSCI, ENGR, MATH, and PHYS. CU Boulder 3000- and 4000-level courses in the following subjects are considered General Technical Electives: CVEN, EMEN, and MCEN.

CVEN Technical Electives
4000-level CVEN courses not otherwise required for the major are considered CVEN Technical Electives. EMEN 4100, 4110, or 4120 may count as one CVEN technical elective.

Grade Requirements
The minimum passing grade for prerequisite and co-requisite classes is a C–. This includes courses completed outside the program. The minimum passing grade for standalone classes is a D–. College of Engineering and Applied Science Academic Expectations and Policies state that if a minimum required grade in a prerequisite course is not achieved, a student is required to repeat a course until the minimum acceptable grade has been earned (maximum of 3 attempts total). If a student takes the advanced (post-requisite) course, this does not remove the obligation to meet the prerequisite course minimum grade requirement, even if the grade earned in the advanced course is acceptable.

Academic Standing
To remain in good academic standing with the College of Engineering and Applied Science, a student must maintain satisfactory academic performance as measured by GPA and progress toward completion of a Bachelor of Science degree. Students must maintain both a cumulative and major CU Boulder GPA of at least 2.25 based entirely on CU Boulder coursework. Courses taken at CMU do not count toward CU Boulder GPA. Failure to meet these requirements results in a student being placed on Academic Alert, Academic Recovery, and/or Academic Suspension. Students in this situation should consult the Partnership Program Director and review the Academic Standing Policies: https://www.colorado.edu/engineering-advising/academic-standing

Free Electives
College-level coursework accepted by CU Boulder not used otherwise to satisfy the requirements of this degree. Use Transferology.com to verify that courses will transfer to CU Boulder.

Fundamentals of Engineering (FE) Exam

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Students in the Engineering Partnership Program must take the Fundamentals of Engineering (FE) Examination before graduation. Graduation is not contingent upon passing; however, it is beneficial to do so because this exam is the first step toward licensure as a professional engineer.

Coursework Not Accepted for Transfer Credit
All CMU coursework will undergo a transfer evaluation and the credit be transferred to CU Boulder (along with any other university coursework). The following coursework will not be accepted for transfer credit and will not count toward a degree at CU Boulder, as described in the Campus Transfer Credit Policy:

- courses completed more than 10 years prior to transfer
- any courses in which the grade earned is below a C- (1.70)
- courses identified by CU Boulder as remedial, such as remedial English, mathematics, science and developmental reading
- vocational-technical courses that are offered at two-year and proprietary institutions (exceptions may be granted only by the CU Boulder dean responsible for the student's curriculum—when exceptions appear to be warranted, appropriate department heads make recommendations to their respective deans regarding credit for such courses)
- courses in religion that constitute specialized religious training or that are doctrinal in nature
- credits earned for work experience or through a cooperative education program
- outdoor leadership education coursework
- credits earned in physical education activity courses
- courses or programs identified as college orientation

Students are responsible for making up any difference in credit hours between the transfer credit received and the CU Boulder course (to meet the 128 required credits to graduate), per CEAS Transfer Credit Policy.