



COLORADO SCHOOL OF MINES

MECHANICAL ENGINEERING or METALLURGICAL & MATERIALS ENGINEERING BACHELOR OF SCIENCE

Interested in engineering? Transfer 30-31 pre-engineering credits towards a Mechanical Engineering or Metallurgical and Materials Engineering degree!

The Mechanical Engineering program provides students with a strong background in core sciences and engineering courses. The program builds on this base with mechanical engineering courses in thermodynamics, fluids, mechanics of materials, machine design, computer-aided engineering, and heat transfer. These courses are supplemented by three semesters of related laboratory experience, a year-long senior-design capstone course, and courses from other disciplines including applied math, economics, electrical engineering, and material science.

Learn more: inside.mines.edu/mech-undergrad

Metallurgical and Materials Engineering plays a role in all manufacturing processes which convert raw materials into useful products adapted to human needs. The primary goal of the Metallurgical and Materials Engineering program is to provide students with a fundamental knowledge-base associated with materials-processing, properties of materials, and materials selection and application. Upon graduation, students have acquired and developed the necessary background and skills for successful careers in the materials-related industries. Furthermore, after completing the program, students are well prepared for management positions in industry or continued education toward a graduate degree.

Learn more: inside.mines.edu/mme-undergrad-program



The Colorado Helps Advanced Manufacturing Program (CHAMP) is a U.S. Department of Labor TAACCCT-funded grant project serving to increase the attainment of degrees and certifications in manufacturing in high demand fields in Colorado. Colorado School of Mines offers a Mechanical Engineering B.S. Degree and a Metallurgical & Materials Engineering B.S. Degree. This fact sheet was created with CHAMP Grant funds to notify RRCC students of their transfer options to Colorado School of Mines for an engineering degree and their pre-engineering transfer credits toward its completion, as supported by the CHAMP Grant.

This fact sheet was funded by a grant awarded by the U.S. Department of Labor's Employment and Training Administration. The fact sheet was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites, and including, but not limited to accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability or ownership. Red Rocks Community College is committed to diversity in its people and programs. The College is an equal opportunity educational institution and does not discriminate on the basis of disability, race, creed, color, gender, sexual orientation, gender expression, religion, age, national origin, or ancestry or any other category protected by applicable law. The College has designated the Human Resources Director as its Equal Opportunity Employment Officer and Title IX Administrator with the responsibility to coordinate its civil rights compliance activities and grievance procedures. Report all concerns or complaints relating to discrimination or harassment to the Title IX/EO Coordinator(s): Arnie Oudenhoven, Executive Director of HR, Title IX Coordinator, Title VII/Equal Opportunity Coordinator, ADA/Sec 504 Coordinator, 13300 West Sixth Avenue, Lakewood, Co 80228. 303.914.6298, arnie.oudenhoven@rrcc.edu.

MECHANICAL ENGINEERING B.S. DEGREE AT CSM – 134.5 TOTAL CREDITS**METALLURGICAL AND MATERIALS ENGINEERING B.S. DEGREE AT CSM – 138.5 TOTAL CREDITS****PRE-ENGINEERING TRANSFER CREDITS: Complete the courses outlined below before transferring to an engineering program at Colorado School of Mines. (34–35 CREDITS)**

NOTE: It is imperative that you contact an engineering advisor at Colorado School of Mines by the end of the first semester to clarify course work appropriate for your intended engineering major and to identify the community college courses and GPA necessary to meet the competitive admission requirements. Contact an advisor at admit@mines.edu or 303-273-3220.

GENERAL EDUCATION KNOWLEDGE AREA	CREDITS	RRCC COURSE NO.	COURSE TITLE & gtPATHWAYS CATEGORY “C” grade or better
Art & Humanities, History, OR Social & Behavior Science	6	Students should contact an RRCC advisor to obtain information regarding course transfer.	200-Level GT-HI1, GT-AH1, GT-AH2, GT-AH3, or GT-SS1, GT-SS2, or GT-SS3 and 100-level courses World Language courses may fulfill humanities and social sciences requirements. Students should contact a Mines advisor and refer to the Bulletin information at hass.mines.edu/LAIS -contact to obtain information regarding course transfer.
Natural & Physical Sciences	5 5	PHY 211* CHE 111	Physics: Calculus-based (GT-SC1) General College Chemistry I with Lab (GT-SC1)
Mathematics	5	MAT 201*	Calculus I (GT-MA1)
Mathematics – Calculus II**	5	MAT 202	Calculus II (GT-MA1)
Mathematics – Calculus III**	4 5	MAT 203 OR MAT 204 (PREFERRED)	Calculus III (GT-MA1) Calculus III with Engineering Applications (GT-MA1)
Mathematics – Differential Equations	4	MAT 261	Differential Equations with Engineering Applications (GT-MA1)

*Students are advised not to break up courses sequences. For example, in majors that require both PHY 211 and PHY 212 or MAT 201 and MAT 202, students should complete the sequences at the community college before transferring.

**Students are strongly encouraged to complete the Calculus II and III sequence at the same institution. Due to the unique nature of the Calculus curriculum at Colorado School of Mines (CSM), transfer credit for Calculus II and III will only be granted if both courses have been successfully completed prior to transfer and provided that the Calculus III course being transferred is equivalent in content to CSM’s MATH213: Calculus for Scientists and Engineers III. Should it be necessary, CSM has created short-form courses to bridge from the highest-level Calculus course being transferred to the CSM curriculum. These courses are designed to have a minimal impact on transfer students while insuring that they have the same foundation as all CSM undergraduates.

CAD, COM, AND OTHER TRANSFER CREDITS AS ELECTIVES – Elective courses must be selected in consultation with the engineering advising office at Mines to verify they will transfer and apply to the student’s chosen major requirements.

Computer Aided Drafting (Free Elective only)	3 3 3	CAD 101 CAD 102 CAD 202	Computer Aided Drafting I Computer Aided Drafting II Computer Aided Drafting/3D
Public Speaking (Free Elective only)	3	COM 115	Public Speaking
Laboratory Science	5 5 5 4 5	BIO 111 BIO 112 CHE 112 GEY 111 PHY 212	General College Biology I with Lab (GT-SC1)*** General College biology II with Lab (GT-SC1)*** General College Chemistry II with Lab (GT-SC1)*** Physical Geology with Lab*** Physics: Calculus-based II (GT-SC1)***
Computer Science	4 4	CSC 160 CSC 161	Computer Science I (Language) Computer Science II (Language)

***These courses count as required distributed science courses for some majors. Please consult the Mines Bulletin (bulletin.mines.edu/undergraduate/undergraduateinformation/distributedcore) or an advisor at Mines for additional information.