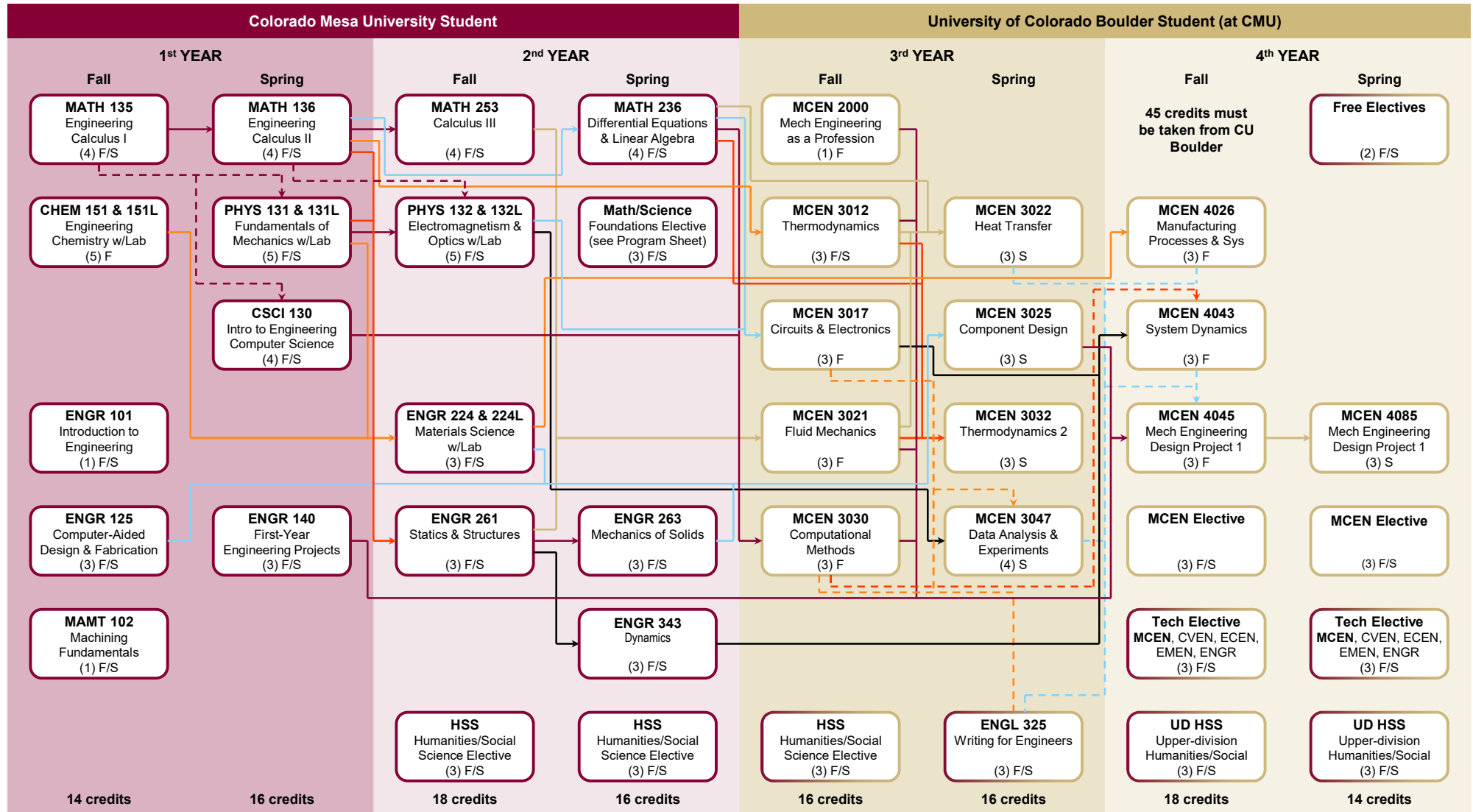


MECHANICAL ENGINEERING (BS)

Partnership Program

2025 – 2026



An accessible version of this flow chart is available on the following pages.

MECHANICAL ENGINEERING (BS) Partnership Program**Semester 1 (Fall)**

Courses	Credits	Semester	Pre-requisites, co-requisites, or notes	Post-requisites
MATH 135 Engineering Calculus I (sub: MATH 151)	4	Fall/Spring	MATH 119, or MATH 119A and MATH 119B, or math placement score	MATH 136, Co: PHYS 131, CSCI 130
CHEM 151 Engineering Chemistry (sub: CHEM 131)	4	Fall/Spring	MATH 113 or higher or concurrently enrolled in MATH 119, MATH 119B, MATH 135, or MATH 151; CHEM 111 or chem placement exam	ENGR 224, 224L
CHEM 151L Engineering Chemistry Lab (sub: CHEM 131L)	1	Fall/Spring		
ENGR 101 Introduction to Engineering	1	Fall		
ENGR 125 Computer-Aided Design & Fabrication	3	Fall/Spring	Encouraged to take before or at same time as ENGR 140	MCEN 3025
MAMT 102 Machining Fundamentals	1	Fall/Spring	Encouraged to take before or at same time as ENGR 140	
TOTAL	14			

Semester 2 (Spring)

Courses	Credits	Semester	Pre-requisites, co-requisites, or notes	Post-requisites
MATH 136 Engineering Calculus II (sub: MATH 152)	4	Fall/Spring	MATH 135 or MATH 151	MATH 236, 253, ENGR 261, MCEN 3012, Co: PHYS 132
PHYS 131 Fundamentals of Mechanics	4	Fall/Spring	MATH 151 or MATH 135 (either may be taken concurrently)	PHYS 132, 132L, ENGR 224, 261
PHYS 131L Fundamentals of Mechanics Lab	1	Fall/Spring		
CSCI 130 Intro to Engineering Computer Science	4	Fall/Spring	MATH 135 or MATH 151 (either may be taken concurrently)	MCEN 3030
ENGR 140 First-Year Engineering Projects	3	Fall/Spring	MATH 119; or MATH 119A and MATH 119B	MCEN 4045
TOTAL	16			

Semester 3 (Fall)

Courses	Credits	Semester	Pre-requisites, co-requisites, or notes	Post-requisites
MATH 253 Calculus III	4	Fall/Spring	MATH 136 or MATH 152	MCEN 3021
PHYS 132 Electromagnetism & Optics	4	Fall/Spring	PHYS 131/PHYS 131L, and MATH 152 or MATH 136 (either may be taken concurrently)	MCEN 3017, 3047
PHYS 132L Electromagnetism & Optics Lab	1	Fall/Spring		
ENGR 224 Materials Science	2	Fall/Spring	CHEM 151/CHEM 151L or CHEM 131/CHEM 131L; and PHYS 131/PHYS 131L	MCEN 3025, 4026
ENGR 224L Materials Science	1	Fall/Spring		
ENGR 261 Statics & Structures	3	Fall/Spring	MATH 136 or MATH 152, and PHYS 131/PHYS 131L	ENGR 263, 343, MCEN 3021
Humanities/Social Science Elective	3	Fall/Spring	approved elective	
TOTAL	18			

Semester 4 (Spring)

Courses	Credits	Semester	Pre-requisites, co-requisites, or notes	Post-requisites
MATH 236 Differential Equations & Linear Algebra	4	Fall/Spring	MATH 152 or MATH 136	MCEN 3017, 3022, 3030, 3032
Math/Science Foundations Elective	3	Fall/Spring	see Program Sheet	
ENGR 263 Mechanics of Solids	3	Fall/Spring	ENGR 261	MCEN 3025
ENGR 343 Dynamics	3	Fall/Spring	ENGR 261	MCEN 4043
Humanities/Social Science Elective	3	Fall/Spring	approved elective	
TOTAL	16			

MECHANICAL ENGINEERING (BS) Partnership Program**Semester 5 (Fall)**

Courses	Credits	Semester	Pre-requisites, co-requisites, or notes	Post-requisites
MCEN 2000 Mechanical Engineering as a Profession	1	Fall	Restricted to students with 27-180 credits	MCEN 4045
MCEN 3012 Thermodynamics	3	Fall/Spring	MATH 136/152	MCEN 3022, 3032, 4045
MCEN 3017 Circuits & Electronics	3	Fall	PHYS 132, MATH 236	MCEN 4043
MCEN 3021 Fluid Mechanics	3	Fall	ENGR 261, MATH 253	MCEN 3022, 3032, 4045
MCEN 3030 Computational Methods	3	Fall	MATH 236, CSCI 130	MCEN 4045, Co: MCEN 3047, 4043
Humanities/Social Science Elective	3	Fall/Spring	approved elective	
TOTAL	16			

Semester 6 (Spring)

Courses	Credits	Semester	Pre-requisites, co-requisites, or notes	Post-requisites
MCEN 3022 Heat Transfer	3	Spring	MCEN 3012, 3021, MATH 236	Co: MCEN 4045
MCEN 3025 Component Design	3	Spring	ENGR 125, 224, 263	MCEN 4045
MCEN 3032 Thermodynamics 2	3	Spring	MCEN 3012, 3021, MATH 236	
MCEN 3047 Data Analysis & Experimental Methods	4	Spring	MATH 236 Co: ENGL 325, MCEN 3017, 3030	Co: MCEN 4045
ENGL 325 Writing for Engineers	3	Fall/Spring	or equivalent CU Boulder course such as ENES 2010, 3100, ENLP 3100, WRTG 3030, WRTG 3035, or PHYS 3050	Co: MCEN 3047
TOTAL	16			

Semester 7 (Fall)

Courses	Credits	Semester	Pre-requisites, co-requisites, or notes	Post-requisites
MCEN 4026 Manufacturing Processes & Systems	3	Fall	ENGR 224	Co: MCEN 4045
MCEN 4043 System Dynamics	3	Fall	ENGR 343, MCEN 3017 Co: MCEN 3030	Co: MCEN 4045
MCEN 4045 Mechanical Engineering Design Project 1	3	Fall	ENGR 140, MCEN 2000, 3012, 3021, 3025, 3030, and (3022 or 4043 or 3047) Co: MCEN 4026, 3022, 4043, 3047, ENGL 325	MCEN 4085
MCEN Elective	3	Fall/Spring	Most MCEN electives have 3000-level pre-requisites	
Technical Elective	3	Fall/Spring	Can be MCEN, CVEN, ECEN, EMEN, or ENGR 3000- or 4000-level	
Upper-division Humanities/Social Science Elect	3	Fall/Spring	3000- or 4000-level approved elective	
TOTAL	18			

Semester 8 (Spring)

Courses	Credits	Semester	Pre-requisites, co-requisites, or notes	Post-requisites
Free Electives	2	Fall/Spring	Required to earn total of 128 credits for program	
MCEN 4085 Mechanical Engineering Design Project 2	3	Spring	MCEN 4045	
MCEN Elective	3	Fall/Spring	Most MCEN electives have 3000-level pre-requisites	
Technical Elective	3	Fall/Spring	Can be MCEN, CVEN, ECEN, EMEN, or ENGR 3000- or 4000-level	
Upper-division Humanities/Social Science Elect	3	Fall/Spring	3000- or 4000-level approved elective	
TOTAL	14			