MECHANICAL ENGINEERING/AEROSPACE ENGINEERING
B.S. DOUBLE MAJOR

University of Colorado Colorado Springs

ACADEMIC ADVISING

Partnering with students to successfully navigate college
Location: Main Hall 208
Phone: 719.255.3260
Website: Academic Advising

Connect With Your Advisor
Current UCCS Students
- Appointments: www.uccs.edu/advising/current-students

Prospective Students: www.uccs.edu/admissions/contact

GENERAL ACADEMIC INFORMATION

Minimum Graduation Requirements
- 157 credit hours
- 2.0 CU cumulative GPA
- Residency: Last 30 credit hours of degree must be completed while registered in the College Engineering & Applied Science at UCCS

Student Responsibilities
Students are required to know and follow:
- All academic policies set forth by the University, College, and academic department in the UCCS Catalog: catalog.uccs.edu
- All course prerequisites designated by the University. Failure to meet course prerequisites may result in an administrative drop of the course from a student's schedule. See degree audit for course prerequisites within the academic major.

DEGREE REQUIREMENTS

Explore Mechanical Engineering: Mechanical and Aerospace Engineering - Bachelor of Science in Aerospace Engineering and Mechanical Engineering | College of Engineering and Applied Science (uccs.edu)

Major Requirements

Mechanical and Aerospace Engineering double major (81 hours)

- Requires a minimum of 81 hours of MAE course work, and a minimum of 59 hours of upper-division MAE (3000+ level) course work.
- Requires an additional 21 hours of upper-division Technical Electives.
- A minimum GPA of 2.0 must be maintained on all MAE course work.

You must be admitted into the College of Engineering in order to take any MAE coursework.

Course/Area	Course Title	Credit Hours
	MECHANICAL AND AEROSPACE ENGINEERING CORE COURSES (44 hours)	
MAE 1502 ***or*** MAE 1602	Principles of Mechanical Engineering ***or*** Principles of Aerospace Engineering	3
MAE 1503	Intro to Engineering Design	3
MAE 2055	Mech-Etronics I	4
MAE 2103	Statics	3
MAE 2104	Dynamics	3
MAE 2200	Materials Engineering	3
MAE 2301	Engineering Thermodynamics I	3
MAE 3005	Engineering Measurements Lab	3
MAE 3130	Fluid Mechanics	4
MAE 3201	Mechanics of Materials	3
MAE 3401	Modeling & Simulation of Dynamic Systems	3
MAE 4000	Mechanical and Aerospace Engineering Seminar	1
MAE 4020 ***or*** MAE 4021	Numerical Methods with MATLAB ***or*** Numerical Methods with MATLAB for Aerospace Engineering	3
MAE 4510	Engineering Design I *(fall only)*	2
MAE 4511	Engineering Design II *(spring only)*	3
	MECHANICAL ENGINEERING CORE COURSES (16 hours)	
MAE 3302	Engineering Thermodynamics II	3
MAE 3501	Machine Design I	3
MAE 4120	Machine Design II	3
MAE 4310	Heat Transfer	4
MAE 4421	Automatic Control of Aerospace & Mechanical Systems	3
	AEROSPACE ENGINEERING CORE COURSES (21 hours)	
MAE 4135	Aerodynamics	3
MAE 4261	Space Structures	3
MAE 4316	Aerospace Propulsion	3
MAE 4360	Aerospace Thermal Systems	3
MAE 4410	Fundamentals of Astrodynamics	3
MAE 4461	Attitude Determination and Control	3
MAE 4470	Space Systems Engineering	3

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Technical Electives (21 hours) **NOTE:** MAE 3342 Engineering Economy can be counted as a business **OR** a technical elective.	*Complete 21 credit hours of upper-division (3000+ level) technical electives.* • 12 hours must be 4000-level. • 12 hours must be from MAE courses. • Courses from the following disciplines may be used for technical electives: Computer Science, Electrical Engineering, Mechanical Engineering, Math (with at least MATH 1350 as a prerequisite), Physics (with at least PES 1110 or MATH 1350 as a prerequisite), PES 2130. • Major core courses may not be used to meet technical elective requirements.		21
Computing Course (3 hours)	MAE 1090	Introduction to Structured Programming	3
Business Courses (6 hours)	ENGR 3040	Engineering Ethics	3
	Business Elective	Complete one course from the following: BLAW 2000, MAE 3342, MGMT 3300, MKTG 3000	3

General Education and Elective Requirements

Core Writing Requirement (6 hours)	• ENGL 1310, 1308, or 1305 *(Students choosing ENGL 1305 must complete ENGL 1300 first.)* **OR** ENGL 1410 • TCID 2090 • Writing Portfolio – PORT 3000 (0 credits) or PORT 4000 (1 credit) or alternative – See Degree Audit
Mathematics (18 hours)	• MATH 1350 • MATH 1360 • MATH 2350 • MATH 3130 • MATH 3400
Basic Science (13 hours)	• CHEM 1401/1402 • PES 1110 • PES 1120

Compass Curriculum
(9 hours)

- Explore and Navigate courses must be taken in departments other than the major.
- Writing Intensive, Inclusiveness, and Sustainability courses may count toward other requirements within the degree.

Component	Course
Gateway Program Seminar	GPS 1010
Explore – Arts, Humanities and Cultures	See Degree Audit (counts towards HUM/SS Electives)
Explore – Society, Behavior and Health	See Degree Audit (counts towards HUM/SS Electives)
Explore – Physical and Natural World	PES 1110 (included in Basic Science requirement)
Navigate	ENGR 3040 (included in Business requirement)
Summit	MAE 4511
Writing Intensive Courses (WIC) *Two courses with one upper-division (3000+ level)*	• MAE 3005 • MAE 3130
Inclusiveness	MAE 1503
Sustainability	MAE 3302

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FIVE-YEAR DEGREE PLAN

Please note that this is an *example* degree program and your program may vary. **Students are responsible for completing all course prerequisites.**

	√	FALL	Hours	√	SPRING	Hours
Year One		MAE 1502 ***or*** MAE 1602	3		MAE 1503	3
		MATH 1350	4		MATH 1360	4
		GPS 1010	3		PES 1120	4
		ENGL 1310	3		CHEM 1401	4
		PES 1110	4		CHEM 1402	1
		TOTAL	17		**TOTAL**	16

	√	FALL	Hours	√	SPRING	Hours
Year Two		MAE 1090	3		MAE 2104	3
		MAE 2103	3		MAE 2301	3
		MAE 2055	4		MATH 3130	3
		MAE 2200	3		MATH 3400	3
		MATH 2350	4		TCID 2090	3
		TOTAL	17		**TOTAL**	15

	√	FALL	Hours	√	SPRING	Hours
Year Three		MAE 3005	3		MAE 3130	4
		MAE 3201	3		MAE 3501	3
		MAE 3302	3		MAE 4421	3
		MAE 3401	3		Technical Elective	3
		MAE 4020 ***or*** MAE 4021	3		Explore – Society, Behavior, and Health Course	3
					PORT 3000	0
		TOTAL	15		**TOTAL**	16

	√	FALL	Hours	√	SPRING	Hours
Year Four		MAE 4000	1		MAE 4511 *(spring only)*	3
		MAE 4120	3		MAE 4310	4
		MAE 4135	3		Technical Elective	3
		MAE 4510 *(fall only)*	2		Technical Elective	3
		Technical Elective	3		Explore – Arts, Humanities & Cultures Course	3
		ENGR 3040	3			
		TOTAL	15		**TOTAL**	16

	√	FALL	Hours	√	SPRING	Hours
Year Five		MAE 4316	3		MAE 4261	3
		MAE 4360	3		MAE 4410	3
		MAE 4461	3		MAE 4470	3
		Technical Elective	3		Technical Elective	3
		Technical Elective	3		Business Elective	3
		TOTAL	15		**TOTAL**	15