

MAJOR IN MECHANICAL ENGINEERING, MECHANICAL ENGINEERING CONCENTRATION

Requirements Effective Fall 2026

Freshman

		AUCC	Credits
CO 150	College Composition (GT-CO2)	1A	3
ENGR 111	Fundamentals of Engineering		3
ENGR 114	Engineering for Grand Challenges		3
MATH 160	Calculus for Physical Scientists I (GT-MA1)	1B	4
MATH 161	Calculus for Physical Scientists II (GT-MA1)	1B	4
PH 141	Physics for Scientists and Engineers I (GT-SC1)	3A	5
Select one group from the following:			5
Group A:			
CHEM 111	General Chemistry I (GT-SC2)	3A	
CHEM 112	General Chemistry Lab I (GT-SC1)	3A	
Group B:			
CHEM 120	Foundations of Modern Chemistry (GT-SC2)	3A	
CHEM 121	Foundations of Modern Chemistry Laboratory (GT-SC1)	3A	
Historical Perspectives (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)			3
Total Credits			30

Sophomore

CIVE 260	Engineering Mechanics-Statics		3
MATH 261	Calculus for Physical Scientists III		4
MATH 340	Intro to Ordinary Differential Equations		4
MECH 200A	Introduction to Manufacturing Processes: Lecture		3
MECH 200B	Introduction to Manufacturing Processes : Laboratory		1
MECH 207	Mechatronics I		3
MECH 210	Engineering Design--3D Modeling and Printing		2
MECH 231	Engineering Experimentation		2
MECH 261	Dynamics for Mechanical Engineers		3
PH 142	Physics for Scientists and Engineers II (GT-SC1)	3A	5
Social and Behavioral Sciences (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-sciences)			3
Total Credits			33

Junior

CIVE 360	Mechanics of Solids		3
MECH 305	Mechanical Engineering Computational Methods		3
MECH 307	Mechatronics II		3
MECH 324	Dynamics of Machines		4
MECH 325	Machine Design with Finite Element Analysis		4

MECH 331A	Introduction to Engineering Materials: Lecture		3
MECH 331B	Introduction to Engineering Materials : Lab		1
MECH 339	Thermodynamics I for Mechanical Engineers		3
MECH 342	Fluid Mechanics for Mechanical Engineers		3
MECH 344	Heat and Mass Transfer	4B	3
Advanced Writing (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#advanced-writing)		2	3
Total Credits			33
Senior			
MECH 338	Thermal/Fluid Sciences Laboratory		1
MECH 439	Thermodynamics II for Mechanical Engineers		3
Select one group from the following:			6
Group A:			
MECH 486A	Engineering Design Practicum: I	4A,4C	
MECH 486B	Engineering Design Practicum: II	4C	
Group B:			
MECH 498A	Engineering Research Practicum: I	4A,4C	
MECH 498B	Engineering Research Practicum: II	4C	
Mechanical Engineering Technical Electives (see list below)			12
1C (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#aucc)		1C	3
Arts and Humanities (https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)		3B	6
Total Credits			31
Program Total Credits:			127

Mechanical Engineering Technical Electives

Select 12 credits of any 400-level or 500-level MECH course except MECH 439 MECH 495, MECH 486A, MECH 486B, MECH 498A,

and MECH 498B, or select 9 credits and an additional 3 credits from the **Alternate Technical Electives** list.

Alternate Technical Electives

Code	Title	AUCC	Credits
AS 301	Leading People and Effective Communication I		3
AS 302	Leading People and Effective Communication II		3
BIOM 350A	Study Abroad--Ecuador: Prosthetics		1-3
BMS 300	Principles of Human Physiology		4
BUS 482D	Study Abroad--Sweden: Climate Tech & Innovation		3
CIVE 367	Structural Analysis		3
CIVE 371	Study Abroad--Peru: Grand Challenges in Engineering in Peru		3
CIVE 438	Fundamentals of Environmental Engr		3
CIVE 560	Advanced Mechanics of Materials		3
CIVE 562	Fundamentals of Vibrations		3
CS 150A	Culture and Coding: Java	3B	3
CS 150B	Culture and Coding: Python	3B	3
CS 163	CS1--No Prior Programming Experience		4
CS 164	CS1--Computational Thinking with Java		4

ECE 411	Control Systems	3
ECE 461	Modern Power Systems	3
ECE 516	Information Theory	3
ECE 521	Satellite Communication	3
ECE 563	Introduction to Power System Markets	3
ECE 566	Grid Integration of Renewable Energy Systems	3
ECE 568	Communication Systems in Smart Grids	3
ECE 570	Microgrids	3
ENGR 370	Study Abroad: Grand Challenges in Engineering--China	3
ENGR 370B	Study Abroad--Netherlands: Engineering and Sustainability	3
ENGR 422	Technology Entrepreneurship	3
ENGR 430	Engineering With Drones	3
ENGR 478	Applied Engineering Data Analytics	3
ENGR 510	Engineering Optimization: Method/ Application	3
HES 207	Anatomical Kinesiology	4
IDEA 310E	Design Thinking Toolbox: Foundations of Woodworking	3
IDEA 310F	Design Thinking Toolbox: Foundations of Textile Design	1
IDEA 310G	Design Thinking Toolbox: Infographics	1
IDEA 310P	Design Thinking Toolbox: Low-Fidelity Prototyping	3
IDEA 310T	Design Thinking Toolbox: Mobile Applications	3
IDEA 310U	Design Thinking Toolbox: Artificial Intelligence	3
MATH 331	Introduction to Mathematical Modeling	3
MATH 332	Partial Differential Equations	3
MATH 369	Linear Algebra I	3
MGT 305	Fundamentals of Management	3
MGT 340	Fundamentals of Entrepreneurship	3
MKT 305	Fundamentals of Marketing	3
MSE 502A	Materials Science and Engineering Methods: Materials Structure and Scattering	1
MSE 502B	Materials Science and Engineering Methods: Computational Materials Methods	1
MSE 502C	Materials Science and Engineering Methods: Materials Microscopy	1
MSE 502D	Materials Science and Engineering Methods: Materials Spectroscopy	1
MSE 502E	Materials Science and Engineering Methods: Bulk Properties and Performance	1
MSE 502F	Materials Science and Engineering Methods: Experimental Methods for Materials Research	1

PH 314	Introduction to Modern Physics	4
PH 341	Mechanics	4
PH 353	Optics and Waves	4
PH 451	Introductory Quantum Mechanics I	3
STAT 315	Intro to Theory and Practice of Statistics	3
SYSE 501	Foundations of Systems Engineering	3