MAJOR IN MECHANICAL ENGINEERING, AEROSPACE ENGINEERING CONCENTRATION

Requirements
Effective Fall 2025

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)		3D	3
	Total Credits		**30**

Sophomore

CIVE 260	Engineering Mechanics-Statics		3
CIVE 261	Engineering Mechanics-Dynamics		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
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)		3C	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	
Aerospace Engineering Electives – select a minimum of 12 credits from the following:			12
MECH 417	Control Systems		
MECH 420	Aerospace Structures		
MECH 425	Mechanical Engineering Vibrations		
MECH 426	Advanced Machine Design		
MECH 450	Aerospace Propulsion		
MECH 460	Aeronautics		
MECH 468	Space Propulsion and Power Engineering		
MECH 478	Computational Fluid Dynamics		
MECH 507	Laser Diagnostics for Thermosciences		
MECH 515	Advanced Topics in Mechanical Vibrations		
MECH 517	Chemical Rocket Propulsion		
MECH 518	Orbital Mechanics		
MECH 519	Aerospace Vehicles Trajectory and Performance		
MECH 520	Finite Element Analysis in Mechanical Engr		
MECH 535	Mechanics of Composite Materials		
MECH 539	Advanced Fluid Mechanics		
MECH 551	Physical Gas Dynamics I		
MECH 557	Turbomachinery		
MECH 558	Combustion		
MECH 567	Broad-Beam Ion Sources		
SYSE 501	Foundations of Systems Engineering		
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**