MAJOR IN MECHANICAL ENGINEERING, ROBOTICS AND AUTOMATION 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)		3D	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)		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 417	Control Systems		3
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	
Robotics and Automation Electives – select a minimum of 9 credits from the following:			9
ECE 253	Microcontrollers and C for Internet-of-Things		
ECE 412	Digital Control and Digital Filters		
ECE 450 & ECE 451	Digital System Design Laboratory		
ECE 528/CS 528	Embedded Systems and Machine Learning		
ECE 561/CS 561	Hardware/Software Design of Embedded Systems		
MECH 414	Machine Learning-Mechanical Engr Automation		
MECH 415	Rotorcraft Modeling and Control		
MECH 416	Introduction to Robotic Manipulators		
MECH 564	Fundamentals of Robot Mechanics and Controls		
Select up to one course from the following:			
MECH 424	Advanced Dynamics		
MECH 425	Mechanical Engineering Vibrations		
MECH 529	Advanced Mechanical Systems		
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**