

MAJOR IN MECHANICAL ENGINEERING, ADVANCED MANUFACTURING CONCENTRATION

Requirements Effective Fall 2022

Freshman

		AUCC	Credits
CHEM 111	General Chemistry I (GT-SC2)	3A	4
CHEM 112	General Chemistry Lab I (GT-SC1)	3A	1
CO 150	College Composition (GT-CO2)	1A	3
MATH 160	Calculus for Physical Scientists I (GT-MA1)	1B	4
MATH 161	Calculus for Physical Scientists II (GT-MA1)	1B	4
MECH 103	Introduction to Mechanical Engineering		3
MECH 105	Mechanical Engineering Problem Solving		3
PH 141	Physics for Scientists and Engineers I (GT-SC1)	3A	5
Arts and Humanities (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)		3B	3
Diversity, Equity, and Inclusion (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion)		1C	3
Total Credits			33

Sophomore

CIVE 260	Engineering Mechanics-Statics		3
CIVE 261	Engineering Mechanics-Dynamics		3
ECE 204	Introduction to Electrical Engineering		3
MATH 261	Calculus for Physical Scientists III		4
MATH 340	Intro to Ordinary Differential Equations		4
MECH 201	Engineering Design I		2
MECH 202	Engineering Design II		3
MECH 231	Engineering Experimentation		3
PH 142	Physics for Scientists and Engineers II (GT-SC1)	3A	5
Select one group from the following:			3
Group A:			
MECH 200	Introduction to Manufacturing Processes		
Group B:			
MECH 200A	Introduction to Manufacturing Processes: Lecture		
MECH 200B	Introduction to Manufacturing Processes : Laboratory		
Total Credits			33

Junior

CIVE 360	Mechanics of Solids		3
MECH 301A	Engineering Design III: Finite Element Analysis		1
MECH 301B	Engineering Design III: Computational Fluid Dynamics		1
MECH 307	Mechatronics and Measurement Systems		4
MECH 324	Dynamics of Machines		4

MECH 325	Machine Design		3
MECH 337	Thermodynamics		4
MECH 338	Thermal/Fluid Sciences Laboratory		1
MECH 342	Fluid Mechanics for Mechanical Engineers		3
MECH 344	Heat and Mass Transfer	4B	3
Select one group from the following:			4
Group A:			
MECH 331	Introduction to Engineering Materials		
Group B:			
MECH 331A	Introduction to Engineering Materials: Lecture		
MECH 331B	Introduction to Engineering Materials : Lab		
Advanced Writing (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#advanced-writing)			2
Total Credits			34
Senior			
MECH 411 or 502	Manufacturing Engineering Advanced/Additive Manufacturing Engineering		3
Select one group from the following:			8
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	
Advanced Manufacturing Electives – select a minimum of 9 credits from the following:			9
ENGR 510	Engineering Optimization: Method/Application		
MECH 407	Laser Applications in Mechanical Engineering		
MECH 411 ¹	Manufacturing Engineering		
MECH 417	Control Systems		
MECH 428	Probabilistic Design		
MECH 432	Engineering of Nanomaterials		
MECH 434	Materials Selection for Mechanical Design		
MECH 464	Injection Molding		
MECH 502 ¹	Advanced/Additive Manufacturing Engineering		
MECH 513	Simulation Modeling and Experimentation		
MECH 529	Advanced Mechanical Systems		
MECH 530	Advanced Composite Materials		
MECH 531/BIOM 531	Materials Engineering		
MECH 533	Composites Product Development		
MECH 537	Processing of Polymer Composites		
MECH 564	Fundamentals of Robot Mechanics and Controls		
MSE 502A	Materials Science Engineering Methods: Materials Structure and Scattering		
MSE 502C	Materials Science Engineering Methods: Materials Microscopy		
MSE 502E	Materials Science Engineering Methods: Bulk Properties and Performance		
MSE 502F	Materials Science Engineering Methods: Experimental Methods for Materials Research		
Arts and Humanities (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)			3B
Historical Perspectives (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)			3D

Social and Behavioral Sciences (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-sciences)	3C	3
Total Credits		29
Program Total Credits:		129

¹ This course may only count towards the electives if the course was not selected as a required course.