

# MAJOR IN MECHANICAL ENGINEERING

## Requirements Effective Fall 2023

### 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 ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities</a> )		3B	3
Diversity, Equity, and Inclusion ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion</a> )		1C	3
<b>Total Credits</b>			<b>33</b>

### 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
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		
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
<b>Total Credits</b>			<b>33</b>

### 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
Select one group from the following:			4
Group A:			
MECH 331	Introduction to Engineering Materials		

Group B:			
MECH 331A	Introduction to Engineering Materials: Lecture		4
MECH 331B	Introduction to Engineering Materials : Lab		
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
Advanced Writing ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#advanced-writing">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#advanced-writing</a> )		2	3
<b>Total Credits</b>			<b>34</b>

**Senior**

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		
Arts and Humanities ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities</a> )		3B	3	
Historical Perspectives ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives</a> )		3D	3	
Social and Behavioral Sciences ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-sciences">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-sciences</a> )		3C	3	
Technical Electives (See List below)			12	
<b>Total Credits</b>			<b>29</b>	
<b>Program Total Credits:</b>			<b>129</b>	

## Mechanical Engineering Technical Electives

Select 12 credits of any 400-level or 500-level MECH course except 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	Credits
BMS 300	Principles of Human Physiology	4
CIVE 367	Structural Analysis	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 (GT-AH3)	3
CS 150B	Culture and Coding: Python (GT-AH3)	3
CS 155	Introduction to Unix	1
CS 156	Introduction to C Programming I	1
CS 157	Introduction to C Programming II	1
CS 163	CS1---No Prior Programming Experience	4
CS 164	CS1--Computational Thinking with Java	4
ECE 411	Control Systems	3
ECE 465	Electrical Energy Generation Technologies	3
ENGR 422	Technology Entrepreneurship	3

HES 207	Anatomical Kinesiology	4
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
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