

# MAJOR IN MECHANICAL ENGINEERING, AEROSPACE ENGINEERING CONCENTRATION

**TO PREPARE FOR FIRST SEMESTER:** The curriculum for this major assumes students enter college prepared to take calculus.

## Major Completion Map

### Distinctive Requirements for Degree Program:

#### Freshman

Semester 1		Critical	Recommended	AUCC	Credits
CO 150	College Composition (GT-CO2)		X	1A	3
ENGR 111	Fundamentals of Engineering	X			3
MATH 160	Calculus for Physical Scientists I (GT-MA1)	X		1B	4
Select one group from the following:					5
Group A:					
CHEM 111	General Chemistry I (GT-SC2)	X		3A	
CHEM 112	General Chemistry Lab I (GT-SC1)	X		3A	
Group B:					
CHEM 120	Foundations of Modern Chemistry (GT-SC2)		X	3A	
CHEM 121	Foundations of Modern Chemistry Laboratory (GT-SC1)		X	3A	
<b>Total Credits</b>					<b>15</b>

Semester 2		Critical	Recommended	AUCC	Credits	
ENGR 114	Engineering for Grand Challenges	X			3	
MATH 161	Calculus for Physical Scientists II (GT-MA1)	X		1B	4	
PH 141	Physics for Scientists and Engineers I (GT-SC1)	X		3A	5	
Historical Perspectives ( <a href="https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives">https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives</a> )				X	3D	3
CO 150 must be completed by the end of Semester 2.				X		
<b>Total Credits</b>					<b>15</b>	

#### Sophomore

Semester 3		Critical	Recommended	AUCC	Credits	
CIVE 260	Engineering Mechanics-Statics	X			3	
MATH 261	Calculus for Physical Scientists III	X			4	
MECH 210	Engineering Design-3D Modeling and Printing	X			2	
PH 142	Physics for Scientists and Engineers II (GT-SC1)	X		3A	5	
Social and Behavioral Sciences ( <a href="https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-sciences">https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#social-behavioral-sciences</a> )				X	3C	3
<b>Total Credits</b>					<b>17</b>	

Semester 4		Critical	Recommended	AUCC	Credits
CIVE 261	Engineering Mechanics-Dynamics	X			3
MATH 340	Intro to Ordinary Differential Equations	X			4
MECH 200A	Introduction to Manufacturing Processes: Lecture	X			3
MECH 200B	Introduction to Manufacturing Processes : Laboratory	X			1
MECH 207	Mechatronics I	X			3
MECH 231	Engineering Experimentation	X			2
<b>Total Credits</b>					<b>16</b>

#### Junior

Semester 5		Critical	Recommended	AUCC	Credits
CIVE 360	Mechanics of Solids	X			3

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MECH 305	Mechanical Engineering Computational Methods	X			3
MECH 307	Mechatronics II	X			3
MECH 331A	Introduction to Engineering Materials: Lecture	X			3
MECH 331B	Introduction to Engineering Materials : Lab	X			1
MECH 339	Thermodynamics I for Mechanical Engineers	X			3
<b>Total Credits</b>					<b>16</b>
<b>Semester 6</b>		<b>Critical</b>	<b>Recommended</b>	<b>AUCC</b>	<b>Credits</b>
MECH 324	Dynamics of Machines	X			4
MECH 325	Machine Design with Finite Element Analysis	X			4
MECH 342	Fluid Mechanics for Mechanical Engineers	X			3
MECH 344	Heat and Mass Transfer	X		4B	3
Advanced Writing ( <a href="https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#advanced-writing">https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#advanced-writing</a> )			X	2	3
<b>Total Credits</b>					<b>17</b>
<b>Senior</b>					
<b>Semester 7</b>		<b>Critical</b>	<b>Recommended</b>	<b>AUCC</b>	<b>Credits</b>
MECH 338	Thermal/Fluid Sciences Laboratory	X			1
MECH 439	Thermodynamics II for Mechanical Engineers	X			3
Select one course from the following:					3
MECH 486A	Engineering Design Practicum: I	X		4A,4C	
MECH 498A	Engineering Research Practicum: I	X		4A,4C	
Aerospace Engineering Electives (See List on Requirements Tab)		X			6
Arts and Humanities ( <a href="https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities">https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities</a> )			X	3B	3
<b>Total Credits</b>					<b>16</b>
<b>Semester 8</b>		<b>Critical</b>	<b>Recommended</b>	<b>AUCC</b>	<b>Credits</b>
Select one course from the following:					3
MECH 486B	Engineering Design Practicum: II	X		4C	
MECH 498B	Engineering Research Practicum: II	X		4C	
Aerospace Engineering Electives (See List on Requirements Tab)		X			6
1C ( <a href="https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#aucc">https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#aucc</a> )			X	1C	3
Arts and Humanities ( <a href="https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities">https://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities</a> )			X	3B	3
The benchmark courses for the 8th semester are the remaining courses in the entire program of study.		X			
<b>Total Credits</b>					<b>15</b>
<b>Program Total Credits:</b>					<b>127</b>