

# MASTER OF ENGINEERING, PLAN C, AEROSPACE ENGINEERING SPECIALIZATION

## Requirements Effective Fall 2023

Code	Title	Credits
<b>Foundational Courses (Select at least one course from two different groups for a minimum of 6 credits):</b>		<b>6</b>
<b>Group A:</b>		
ENGR 550/ MATH 550	Numerical Methods in Science and Engineering	
MECH 568	Computational Methods for Mechanical Eng.	
<b>Group B:</b>		
MECH 538	Mechanical Engineering Thermodynamics	
MECH 539	Advanced Fluid Mechanics	
<b>Group C:</b>		
CIVE 560	Advanced Mechanics of Materials	
MECH 532/ BIOM 532	Materials Issues in Mechanical Design	
<b>Technical Electives (see list below)</b>		<b>24</b>
<b>Program Total Credits:</b>		<b>30</b>

**Technical Electives (Select at least eight courses from the below technical electives or the above foundational courses for a minimum of 24 credits):**

Code	Title	Credits
<b>Fluid Flow Technical Electives:</b>		
MECH 478	Computational Fluid Dynamics	
MECH 507	Laser Diagnostics for Thermosciences	
MECH 551	Physical Gas Dynamics I	
MECH 552	Applied Computational Fluid Dynamics	
<b>Propulsion Technical Electives:</b>		
MECH 468	Space Propulsion and Power Engineering	
MECH 517	Chemical Rocket Propulsion	
MECH 518	Orbital Mechanics	
MECH 519	Aerospace Vehicles Trajectory and Performance	
MECH 557	Turbomachinery	
MECH 558	Combustion	
MECH 567	Broad-Beam Ion Sources	
MECH 658	Advanced Combustion Theory and Modeling	
<b>Structures Technical Electives:</b>		
MECH 425	Mechanical Engineering Vibrations	
MECH 426	Advanced Machine Design	
MECH 515	Advanced Topics in Mechanical Vibrations	

MECH 520	Finite Element Analysis in Mechanical Engr
MECH 535	Mechanics of Composite Materials
<b>Materials &amp; Manufacturing Technical Electives:</b>	
MECH 502	Advanced/Additive Manufacturing Engineering
MECH 530	Advanced Composite Materials
MECH 531/ BIOM 531	Materials Engineering
MECH 533	Composites Product Development
MECH 537	Processing of Polymer Composites
<b>Systems Engineering Technical Electives:</b>	
ENGR 570	Coupled Electromechanical Systems
MECH 417	Control Systems
MECH 513	Simulation Modeling and Experimentation
MECH 524	Principles of Dynamics
SYSE 501	Foundations of Systems Engineering
SYSE 530	Overview of Systems Engineering Processes

A minimum of 30 credits are required to complete this program.<sup>1</sup>

<sup>1</sup> Of the 30 minimum credits required for this program, at least 21 credits must be at the 500-level or above and earned at CSU.