MASTER OF ENGINEERING, PLAN C, AEROSPACE ENGINEERING SPECIALIZATION

The Master of Engineering, Plan C, Aerospace Engineering Specialization is an on-campus or online degree program focused on providing students with aerospace engineering-relevant content, in disciplines such as Fluid Flow, Propulsion, Structures, and Materials and Manufacturing. This program is intended for professional students who have an undergraduate degree in engineering and are working in the aerospace industry. This is a coursework-only degree program with no thesis requirement.

Students interested in graduate work should refer to the Graduate and Professional Bulletin (https://catalog.colostate.edu/general-catalog/graduate-bulletin/).

Learning Objectives

The Aerospace Engineering Program prepares graduates to achieve the following objectives:

1. Utilize and apply advanced mathematical, computational, design and / or experimental skills in the thematic area of Aerospace Engineering.
2. Identify, formulate, and solve advanced problems in aerospace engineering.
3. Effectively communicate technical ideas through reports, presentations, or other media at the high-level associated with graduate education.
4. Acquire knowledge in one or more sub-disciplines associated with aerospace engineering and technical areas of interest.
5. Display knowledge about contemporary research in aerospace engineering and related disciplines, ethical standards of conducting research, analyzing data and disseminating information as part of the engineering profession.
6. Analyze data, report findings, and draw conclusions that result in original contributions to knowledge in aerospace engineering and/or related fields.

Requirements Effective Fall 2025

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

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
Fluid Flow Technical Electives:		
MECH 419	Compressible Flow	
MECH 478	Computational Fluid Dynamics	
MECH 507	Laser Diagnostics for Thermosciences	
MECH 551	Physical Gas Dynamics I	
MECH 552	Applied Computational Fluid Dynamics	
Propulsion Technical Electives:		
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	
Structures Technical Electives:		
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	
Materials & Manufacturing Technical Electives:		
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	
Systems Engineering Technical Electives:		
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.[1]

[1] 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.

Requirements for All Graduate Degrees

For more information, please visit Requirements for All Graduate Degrees (https://catalog.colostate.edu/general-catalog/graduate-bulletin/graduate-study/procedures-requirements-all-degrees/) in the Graduate and Professional Bulletin (https://catalog.colostate.edu/general-catalog/graduate-bulletin/).

Summary of Procedures for the Master's and Doctoral Degrees

NOTE: Each semester the Graduate School publishes a schedule of deadlines. Deadlines are available on the Graduate School website (https://graduateschool.colostate.edu/deadline-dates/). Students should consult this schedule whenever they approach important steps in their careers.

Forms (https://graduateschool.colostate.edu/forms/) are available online.

Step	Due Date
1. Application for admission (online)	Six months before first registration
2. Diagnostic examination when required	Before first registration
3. Appointment of advisor	Before first registration
4. Selection of graduate committee	Before the time of fourth regular semester registration
5. Filing of program of study (GS Form 6)	Before the time of fourth regular semester registration
6. Preliminary examination (Ph.D. and PD)	Two terms prior to final examination
7. Report of preliminary examination (GS Form 16) - (Ph.D. and PD)	Within two working days after results are known
8. Changes in committee (GS Form 9A)	When change is made
9. Application for Graduation (GS Form 25)	Refer to published deadlines from the Graduate School Website
9a. Reapplication for Graduation (online)	Failure to graduate requires Reapplication for Graduation (online) for the next time term for which you are applying
10. Submit thesis or dissertation to committee	At least two weeks prior to the examination or at the discretion of the graduate committee
11. Final examination	Refer to published deadlines from the Graduate School Website
12. Report of final examination (GS Form 24)	Within two working days after results are known; refer to published deadlines from the Graduate School website
13. Submit a signed Thesis/Dissertation Submission Form (GS Form 30) to the Graduate School and Submit the Survey of Earned Doctorates (Ph.D. only) prior to submitting the electronic thesis/dissertation	Refer to published deadlines from the Graduate School website.
14. Submit the thesis/dissertation electronically	Refer to published deadlines from the Graduate School website
15. Graduation	Ceremony information is available from the Graduate School website