MASTER OF ENGINEERING, PLAN C, ADVANCED MANUFACTURING SPECIALIZATION

The Master of Engineering, Plan C, Advanced Manufacturing Specialization is an on-campus or online degree program focused on providing students with the competencies, skills, and experience to advance in careers in a manufacturing industry. The curriculum includes subjects in manufacturing processes and process control, factory systems and supply chains, business fundamentals and the product development process. 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

Students will:

1. Execute a wide range of activities inherent in the design and manufacture of world-class products, including designing products, selecting materials, determining and applying manufacturing processes and systems design, and validating products.
2. Remain abreast of and effectively execute advanced manufacturing and design technology as it evolves, including CAD/CAM/CAE and state of the art manufacturing machinery, tools, and equipment.
3. Integrate different manufacturing processes into an effective system for producing goods that can compete in the world market. This includes scheduling production, managing inventory, utilizing information systems, and creating system simulations.

Requirements Effective Summer 2023

Code	Title	Credits
MECH 411	Manufacturing Engineering	3
MECH 502	Advanced/Additive Manufacturing Engineering	3
Select 24 credits from the list of courses below:		24
Foundational Courses:		
MECH 464	Injection Molding	
MECH 513	Simulation Modeling and Experimentation	
MECH 530	Advanced Composite Materials	
MECH 531/ BIOM 531	Materials Engineering	
Applications:		
MECH 407	Laser Applications in Mechanical Engineering	
MECH 533	Composites Product Development	
Automation & Simulation:		
ENGR 510	Engineering Optimization: Method/ Application	
MECH 417	Control Systems	
MECH 428	Probabilistic Design	
MECH 529	Advanced Mechanical Systems	
MECH 564	Fundamentals of Robot Mechanics and Controls	
Processing of Materials:		
MECH 432	Engineering of Nanomaterials	
MECH 434	Materials Selection for Mechanical Design	
MECH 537	Processing of Polymer Composites	
MSE 502A	Materials Science and Engineering Methods: Materials Structure and Scattering	
MSE 502C	Materials Science and Engineering Methods: Materials Microscopy	
MSE 502E	Materials Science and Engineering Methods: Bulk Properties and Performance	
MSE 502F	Materials Science and Engineering Methods: Experimental Methods for Materials Research	
Program Total Credits:		**30**

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