

MASTER OF MATERIALS ENGINEERING, PLAN C

The Masters of Materials Engineering, Plan C, is aimed at having students develop a fundamental understanding of the Materials Science & Engineering (MSE) triad: processing, structure, and property relations in materials through in-depth specialized coursework. This program emphasizes a depth in materials science and engineering theory and practice that is enabled through a coursework only degree. The coursework in this program covers the fundamentals of characterization, processing and properties of materials. This includes coursework in thermodynamics, kinetics, mechanical properties and physical properties of materials.

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

Program Learning Objectives

Graduate students in the Master of Materials Engineering will take coursework in core materials competencies as well as electives to achieve the following learning objectives:

1. Utilize and apply advanced mathematical, computational, design and / or experimental skills to materials engineering problems.
2. Identify, formulate, justify and solve advanced problems in materials engineering.
3. Effectively communicate technical ideas to a variety of audiences through reports, presentations, or other media at the high-level associated with graduate education.
4. Have knowledge of and recognize the interconnectedness of materials science and engineering and society and the need for lifelong learning.
5. Learn and develop techniques, skills and tools necessary for materials engineering practice.

Institutional Learning Objectives

CSU's Institutional Learning Objectives (ILO's) are Creativity, Reasoning, Communication, Responsibility, and Collaboration. Below are the ways Master of Materials Engineering students engage in each ILO by the time of their graduation:

- **Creativity and Responsibility:** Students will learn new ways of understanding their place in the world and how their contributions to MSE impact society on an individual, group, and institutional level.
- **Reasoning:** In all their MSE subject courses, students learn to identify and understand problems related to the MSE field.
- **Communication:** Several courses require presentations and/ or discussion posts to peers. These assignments are designed to improve oral and written communication of their course understanding.
- **Collaboration:** All MSE courses require some form of collaboration in class through group discussion, assignments, homework or presentations. As an interdisciplinary program, all MSE students

collaborate with students and faculty from a variety of departments across campus.

Requirements Effective Spring 2025

Code	Title	Credits
Required Courses:		
MSE 501	Materials Technology Transfer	1
MSE 502A	Materials Science and Engineering Methods: Materials Structure and Scattering	1
MSE 502B	Materials Science and Engineering Methods: Computational Materials Methods	1
MSE 502C	Materials Science and Engineering Methods: Materials Microscopy	1
MSE 503	Mechanical Behavior of Materials	3
MSE 504	Thermodynamics of Materials	3
MSE 505	Kinetics of Materials	3
MSE 523	Electronic Properties of Materials	3
Select 2 credits from the following:		2
MSE 793A	Professional Development Seminar: MSE, Diversity, Equity, and Inclusion	
MSE 793B	Professional Development Seminar: Materials and Society	
MSE 793C	Professional Development Seminar: Materials Science Engineering Careers	
Electives ¹		12
Program Total Credits:		30

A minimum of 30 credits are required to complete this program. At least 24 credits must be MSE subject coursework.

¹ 6 credits of electives: Select 500 level and up courses with approval of advisor. Only one 3-credit 400-level course may count towards the total minimum requirements.

Requirements for All Graduate Degrees

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