

MASTER OF NATURAL SCIENCES EDUCATION, PLAN C (M.N.S.E.)

The Master of Natural Sciences Education, Plan C (M.N.S.E.) is an online degree program (<https://www.online.colostate.edu/degrees/natural-sciences-education/>) designed for:

- Current science teachers with a desire to learn new pedagogical techniques that contribute to student learning and engagement;
- Current science teachers who want the flexibility to teach other natural science disciplines by enhancing their knowledge in biology, chemistry, physics, Earth science, and environmental science;
- Current non-science teachers with a natural science undergraduate degree who would like to pursue science teaching positions;
- Current non-science teachers with a related undergraduate degree (computer science, agriculture, engineering) and a strong science background who would like to pursue science teaching positions; and,
- Individuals with strong science backgrounds and past or current experience in educational settings who would like to earn a master's degree in science education and separately pursue a teaching certification.

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

Program Learning Objectives

Successful students will:

1. Understand natural science knowledge in the content areas of biology, chemistry, Earth science, physics, and environmental science;
2. Apply science content and pedagogy to the teaching of middle and high school students;
3. Create secondary science curricula that informs curriculum development with science theory and practice, instructional theory, and metrics for learning effectiveness;
4. Apply hands-on teaching tools, methods, and lesson enhancements that engage students and facilitate learning.

Institutional Learning Objectives

Program Learning Objectives align with and support the four of the five University's Institutional Learning Objectives, which are Creativity, Reasoning, Communication, and Collaboration:

1. Creativity: Program Learning Objectives 2 and 3 creatively apply their expertise to developing curriculum and pedagogy to foster learning and engagement.
2. Reasoning: Program Learning Objectives 1 and 4 apply science knowledge and practice that fosters critical thinking.
3. Communication: Program Learning Objectives 2, 3, and 4 develop written communication skills for teaching middle and high school students from diverse cultures and identities.
4. Collaboration: Program Learning Objectives 1, 3 and 4 support stewardship of environmental resources. Courses in the MNSE curriculum address the impacts of climate change and habitat

destruction on ecosystems. Students develop professional skills to solve problems in a societal context.

Requirements Effective Fall 2021

Code	Title	Credits
OPTION 1:		
Education Courses		
EDRM 602	Action Research	3
EDUC 619	Curriculum Development	3
or NSCI 612	Myth Busters – Science/Controversy/Evaluation	
EDUC 660	Advanced Methods-Science and Math Instruction	3
Natural Science Courses		
Select at least 18 credits from the following:		18-19
NSCI 619A	Physics for Educators: Optics	
NSCI 619B	Physics for Educators: Mechanics	
NSCI 620	Chemistry for Science Educators	
NSCI 630	Spectroscopy for Science Educators	
NSCI 640	Energetics for Science Educators	
NSCI 650	Pollution and Environmental Biology for Educators	
NSCI 660	Evolutionary Biology for Educators	
NSCI 670	Earth Sciences for Educators	
STAR 511	Design and Data Analysis for Researchers I	
Independent Study		
NSCI 695	Independent Study for the MNSE ¹	3
Program Total Credits:		30-31
OPTION 2:		
Education Courses		
EDRM 602	Action Research	3
EDUC 619	Curriculum Development	3
or NSCI 612	Myth Busters – Science/Controversy/Evaluation	
EDUC 660	Advanced Methods-Science and Math Instruction	3
Natural Science Courses		
Select at least 15 credits from the following:		15-16
NSCI 619A	Physics for Educators: Optics	
NSCI 619B	Physics for Educators: Mechanics	
NSCI 620	Chemistry for Science Educators	
NSCI 630	Spectroscopy for Science Educators	
NSCI 640	Energetics for Science Educators	
NSCI 650	Pollution and Environmental Biology for Educators	
NSCI 660	Evolutionary Biology for Educators	
NSCI 670	Earth Sciences for Educators	
STAR 511	Design and Data Analysis for Researchers I	
Research		
NSCI 698	Research Experience in Natural Sciences ²	6
Program Total Credits:		30-31

- ¹ The independent study requires enrollment in the summer session after completing the program's course requirements. It involves weekly meetings of the student with her/his research advisor, but does not require full-time residency on campus.
- ² The research experience requires full time enrollment in the summer session after completing the program's course requirements. Instructors are graduate student advisors who hold regular faculty appointments in the Departments of Biology, Chemistry, or Physics.

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