MASTER OF SCIENCE IN ECOLOGY

Graduate Degree Program in Ecology
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The Graduate Degree Program in Ecology (GDPE) offers outstanding opportunities for graduate studies ecology. The overall objective of the M.S. in Ecology is to develop students to be science professionals who use their interdisciplinary problem-solving skills to address ecological challenges from local to global scales. Students enrolled in the Plan A (thesis option) program are engaged in independent and collaborative research guided by advisors in the program and aim to have their thesis work published in the peer-reviewed literature. The Plan B option provides a non-thesis alternative available upon special request.

Students interested in graduate work should refer to the Graduate and Professional Bulletin (https://catalog.colostate.edu/general-catalog/graduate-bulletin/) or visit the Graduate Degree Program in Ecology (https://ecology.colostate.edu/)website for more information.

Learning Objectives

The GDPE offers a thesis-based M.S. program (Plan A) that enables graduates to continue their education at the Ph.D. level or to seek employment in a wide range of careers including state and federal positions, non-profit organizations and environmental consulting.

The GDPE also offers a professional M.S. program (Plan B). This non-thesis-based degree focuses on coursework and a professional paper.

Successful graduates of the MS program demonstrate the following:

1. Broad knowledge of the fundamental areas of ecology as well as relevant basic biology and quantitative methods, achieved through required and elective coursework;
2. Ability to discriminate important and relevant ideas and facts and to place their work in a wide ecological context that incorporates diverse viewpoints;
3. Understanding and practice of research ethics, collaborative approaches, and broader issues related to social responsibility through coursework and research projects;
4. Proficiency in written communication as shown in the research proposal and thesis (Plan A), the professional paper (Plan B), and in oral communication as shown in presentations.

Plan A
Effective Fall 2024

Code	Title	Credits
COMMON CORE COURSES		
ECOL 505	Foundations of Ecology	3
ECOL 571	Advanced Topics in Ecology	1
ECOL 592	Interdisciplinary Seminar in Ecology	1
ECOLOGICAL SUBDISCIPLINES		
Take a minimum of 3 credits not taken elsewhere in the program from courses in a subdiscipline of ecology. Students are encouraged to explore options across departments. Example courses offered by Ecology include the following:		3
ECOL 600	Community Ecology	
ECOL 610	Ecosystem Ecology	
ECOL 620	Applications in Landscape Ecology	
ECOLOGICAL TOOLS		
Take a minimum of 3 credits of any ecologically-relevant quantitative or qualitative course, as determined by student and committee. Students are encouraged to explore options across departments. Example courses include the following:		3
ESS 575	Models for Ecological Data	
FW 663	Sampling & Analysis Vertebrate Populations	
FW 673/STAT 673	Hierarchical Modeling in Ecology	
GR 503/NR 503	Remote Sensing and Image Analysis	
NR 505	Concepts in GIS	
NR 512	Spatial Statistical Modeling-Natural Resources	
NR 523/STAT 523	Quantitative Spatial Analysis	
SOC 610	Seminar in Methods of Qualitative Analysis	
STAR 511	Design and Data Analysis for Researchers I	
STAR 512	Design and Data Analysis for Researchers II	
PROFESSIONAL SKILLS		**1**
Take a minimum of 1 credit of a course (or workshop such as through TILT or the Graduate School combined with a credit of Independent Study (ECOL 695) that will enhance the student's professional development and/or skills based on professional goals, as determined by student and committee. Students are encouraged to explore options across departments and programs. Example courses include the following:		
BZ 560	Teaching and Communicating Science	
ECOL 693	Research Seminar	
ECOL 695	Independent Study	
GRAD 544	Ethical Conduct of Research	
THESIS		**1**
Take a minimum of 1 credit.		
ECOL 699	Thesis	
ELECTIVES		**17**
Additional relevant coursework and credits as determined by student and committee to meet the minimum Graduate School Credit Requirements of 15 credits "Regular" coursework and 30 credits total. Students are encouraged to explore options across departments and programs.		
Program Total Credits:		**30**

A minimum of 30 credits are required to complete this program.

Plan B
Effective Fall 2023

Code	Title	Credits
REQUIRED COURSES		
ECOL 505	Foundations of Ecology	3

ECOL 571	Advanced Topics in Ecology	1
ECOL 592	Interdisciplinary Seminar in Ecology	1
ECOL 693	Research Seminar	1
ECOLOGY FUNDAMENTALS		
Select 6 credits not taken elsewhere in the program from the following:		**6**
ANTH 530	Human-Environment Interactions	
BZ 525	Advanced Conservation & Evolutionary Genomics	
BZ 526/BSPM 526	Evolutionary Ecology	
BZ 535	Behavioral and Cognitive Ecology	
BZ 548	Theory of Population and Evolutionary Ecology	
ECOL 600	Community Ecology	
ECOL 610	Ecosystem Ecology	
ECOL 620	Applications in Landscape Ecology	
ESS 575	Models for Ecological Data	
ESS 660	Biogeochemical Cycling in Ecosystems	
FW 662	Wildlife Population Dynamics	
HORT 576	Advanced Environmental Plant Stress Physiology	
ECOLOGY TOOLS		
Select 3 credits not taken elsewhere in the program from the following:		**3**
ANTH 554/ ESS 554	Ecological and Social Agent-based Modeling	
AREC 535/ ECON 535	Applied Econometrics	
AREC 635/ ECON 635	Econometric Theory I	
AREC 735/ ECON 735	Econometric Theory II	
ESS 565	Niche Models	
CIVE 524/WR 524	Modeling Watershed Hydrology	
ESS 575	Models for Ecological Data	
FW 551	Design of Fish and Wildlife Studies	
FW 552	Applied Sampling for Wildlife/Fish Studies	
FW 663	Sampling & Analysis Vertebrate Populations	
FW 673/STAT 673	Hierarchical Modeling in Ecology	
GR 503/NR 503	Remote Sensing and Image Analysis	
MATH 530	Mathematics for Scientists and Engineers	
MATH 540	Dynamical Systems	
NR 505	Concepts in GIS	
NR 506	GIS Methods for Resource Management	
NR 512	Spatial Statistical Modeling-Natural Resources	
NR 523/STAT 523	Quantitative Spatial Analysis	
NRRT 765	Applied Multivariate Analysis	
SOCR 522	Micrometeorology	
SOCR 620	Modeling Ecosystem Biogeochemistry	
SOCR 670	Terrestrial Ecosystems Isotope Ecology	
STAR 511	Design and Data Analysis for Researchers I	
STAR 512	Design and Data Analysis for Researchers II	
STAT 520	Introduction to Probability Theory	
STAT 521	Stochastic Processes I	
STAT 530	Mathematical Statistics	
STAT 540	Data Analysis and Regression	
STAT 544/ ERHS 544	Biostatistical Methods for Quantitative Data	
STAT 560	Applied Multivariate Analysis	
STAT 675A	Topics in Statistical Methods: Sampling	
WR 674	Data Issues in Hydrology	
ADDITIONAL ELECTIVES, AND INDEPENDENT STUDY		**15**
Program Total Credits:		**30**

A minimum of 30 credits are required to complete this program.

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