

# NATURAL RESOURCES: ECOSYSTEM SCIENCE (M.S.)

<https://colsa.unh.edu/natural-resources-environment/program/ms/natural-resources-ecosystem-science>

## Description

### NATURAL RESOURCES: ECOSYSTEM SCIENCE

Students in the Ecosystem Science option typically have a strong background in environmental science, earth science, ecology, or related fields. Areas of interest include the ecology, microbiology and biogeochemistry of soils, groundwaters, and surface waters, with an emphasis on how the different components of an ecosystem interact to produce system-level responses to management, global change, and other perturbations. Understanding controls on carbon storage, nutrient transformations, water quality, soil health and greenhouse gas emissions is central to much of the research conducted by students in this option.

## Requirements

### Degree Requirements

An M.S. degree is conferred upon successful completion of a program of not less than 30 credits for natural resources and the environment options: forestry, environmental conservation and sustainability, environmental economics, ecosystem science, and wildlife and conservation biology.

### Course Requirements or Equivalent

Code	Title	Credits
NR 903	Approach to Research	2
<b>Choose one of the following additional research methods classes:</b>		<b>2-3</b>
NR 905	Grant Writing	
BIOL 902	Writing and Publishing Science	
BIOL 950	Scientific Communication	
GRAD 834	Fundamentals of Citizen and Community Science	
Or an alternative with approval from the Graduate Coordinator		
NR 993	Natural and Environmental Resources Seminar	2
NR 996	Natural Resource Education <sup>1</sup>	2
or NR 900	Teaching Assistantship Practicum	
<b>Select one of the following Data Analysis courses: <sup>2</sup></b>		<b>3-4</b>
ANFS 933	Design, Analysis, and Interpretation of Experiments	
BIOL 811	Experimental Design & Analysis	
DATA 800	Introduction to Applied Analytic Statistics	
ECON 926	Econometrics I	
EDUC 904	Qualitative Inquiry in Research	
ESCI 801	Quantitative Methods in Earth Sciences	
MATH 835	Statistical Methods for Research	
MATH 839	Applied Regression Analysis	
MATH 840	Design of Experiments I	
NR 909	Analysis of Ecological Communities and Complex Data	
NR 913	Hierarchical Modeling in Ecology	
PPOL 908	Quantitative Methods for Policy Research	
PSYC 805	Research Methodology and Statistics I	
PSYC 907	Research Methods and Statistics III	
SOC 901	Sociological Methods I: Intermediate Social Statistics	
SOC 903	Sociological Methods III: Advanced Social Statistics	
SOC #904	Sociological Methods IV: Qualitative and Historical Research Methods	

Select one of the following:

NR 899	Master's Thesis <sup>3</sup>	6
NR 998	Directed Research <sup>4</sup>	4

- <sup>1</sup> If you are supported on a Teaching Assistantship, you are required to take NR 900 Teaching Assistantship Practicum, during your first semester.
- <sup>2</sup> Or other alternative with approval from the Graduate Coordinator.
- <sup>3</sup> The thesis option will provide a research-based thesis that is the foundation for a peer-reviewed publication.
- <sup>4</sup> The directed research option is a professionally oriented body of work, most often geared to meet the needs of the stakeholder. The project, designed and conducted by the student, will culminate in a scholarly paper or report that is suitable for publication in the respective field of scholarship.

An approved program of study plan is required during the first semester.

## Accelerated Master's

This graduate program is approved to be taken on an accelerated basis in articulation with certain undergraduate degree programs.

General Accelerated Master's policy, note that some programs have additional requirements (e.g. higher grade expectations) compared to the policy.

Please see the Graduate School website and contact the department directly for more information.

## Student Learning Outcomes

Key Learning Objectives:

- Knowledge and skills outcomes to ensure graduates of the MS program have mastered their discipline: demonstrate knowledge of theory and practice, as well as critical thinking skills and creativity, in conducting ecological, economic, and policy assessment of natural resource and environmental issues and developing solutions to environmental problems;
- successfully employ the field, laboratory, data analysis, and social science skills necessary to perform research concerning natural resources and their management;
- design, propose, and execute research addressing fundamental or critical issues in natural resources;
- contribute to scholarship through publication and presentation of research findings using diverse media.

Professional outcomes to ensure graduates of the MS program successfully compete for jobs in the public and private sectors:

- demonstrate mastery of theory and empirical knowledge in their research concentration and, more generally, in the relevant natural and/or social;
- use written and oral skills to communicate effectively with colleagues, stakeholders, and the public;
- integrate theory and practice to analyze, assess, and solve environmental and social problems and answer questions across diverse scales from local to global;
- develop and employ interdisciplinary relationships and approaches to addressing environmental issues;

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- interact with professional peers honestly and ethically, and in ways that show cultural sensitivity, inquisitiveness, and propensity for teamwork.