# 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 Equivalents

| Code | Title | Credits |
|---|---|---|
| NR 903 | Approach to Research | 2 |
| NR 905 | Grant Writing [2] | 2 |
| or BIOL 902 | Writing and Publishing Science | |
| or BIOL 950 | Scientific Communication | |
| or GRAD 834 | Fundamentals of Citizen and Community Science | |
| NR 993 | Natural and Environmental Resources Seminar | 2 |
| NR 996 | Natural Resource Education [1] | 2 |
| or NR 900 | Teaching Assistantship Practicum | |
| Select one of the following Data Analysis courses: [2] | | 3-4 |
| 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 | |
| Select one of the following: | | 4-6 |
| NR 899 | Master's Thesis (6-credits) [3] | |
| NR 998 | Directed Research (4-credits) [4] | |

1. If you are supported on a Teaching Assistantship, you are required to take NR 900 Teaching Assistantship Practicum, during your first semester.
2. Or other alternative with approval from the Graduate Coordinator.
3. The thesis option will provide a research-based thesis that is the foundation for a peer-reviewed publication.
4. 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

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