

NRM 601: RESEARCH METHODS IN NATURAL RESOURCES MANAGEMENT

Fall Semester 2021

COURSE SYLLABUS

CLASSES

Lectures and discussions, Wednesday, 2:15 to 4:15 pm, AHRB 183

INSTRUCTOR AND COORDINATOR

Dr. Jenifer Huang McBeath

Office: 130 Arctic Health Research Building (AHRB)

Telephone: 474-7431

Email: jhmcbeath@alaska.edu

OFFICE HOURS

Tuesday and Thursday 11:30 am—1:30 pm. and by appointment

SCOPE AND LEARNING OBJECTIVES

This course is designed as an introduction (for graduate students) to the research methods employed in various fields of natural resources management, including agriculture, forestry, ecology and the social sciences. This course is intended to acquaint students with the relationship between theory and research, the nature of scientific inquiry, approaches to research, the sequence of steps involved in scientific investigation, obtaining grant funds to support research, analysis and interpretation of research results, and presentation of results.

The primary objectives of this course are:

- 1) introduce students to the concepts of scientific research,
- 2) instruct students in rules and guidelines of research ethics,
- 3) expose students to diverse methods and instruments in biological and social science research,
- 4) instruct students in grant writing.

This course will be taught by experts on the subject matters and disciplines.

GRADING SYSTEM

Final grades will be assigned based on merit. The bottom and top three percentage points of each letter grade below will be assigned a '-' and '+', respectively.

A = 90% or higher

B = 80-89%

C = 70 -79%

D = 60-69%

F = <60%

REQUIREMENTS

1. Attendance and Participation. Regular attendance is essential and good attendance will be rewarded. Attendance counts for 20 percent of the course grade. Active participation in class by asking questions and engaging in discussion improves the learning environment for all students, and is strongly encouraged. Please avoid distracting classmates (and instructor) by open cell phones, texting in class, and surfing the web.
2. Write a grant proposal for a research project in natural resources. Each student will develop a proposal by selecting a research topic in natural resources to be submitted to a granting agency. This proposal should follow the criteria of the selected agency. The grant proposal accounts for 35 percent of the final grade.
3. Proposal presentation. Each student will present and defend his/her proposal. This presentation accounts for 20 percent of the final grade.
4. Other Work. Students will read others proposals and serve as reviewers. Proposal evaluations will be submitted after each of the oral presentations based on a list of criteria given during the lecture on grantsmanship. This evaluation accounts for 25 percent of the final grade.
4. Plagiarism and cheating are serious offenses, prohibited by the UAF Student Code of Conduct. Any source directly quoted or paraphrased in your assignments should be properly cited.
- 5) Contact the instructor immediately if you are unable to attend the class or hand in an assignment on time.

COURSE OUTLINE AND READING SCHEDULE

<u>Date</u>	<u>Topic</u>	<u>Lecturer(s)</u>
Aug. 25	Introduction Grantsmanship Science and Research: A Forgotten Crisis in Early Development of U.S. Exploration	J. McBeath R. Madnick D. Norton
Sept. 01	Plant Pathology Research Methods	J. McBeath
Sept. 08	Entomological Research	C. Campbell
Sept. 15	Ethics	D. Valentine
Sept. 22	How Best Management Can Significantly Reduce Fungicide Use on Turfgrass	B. Clarke

Sept. 29	Methods in Horticulture Research	L. Karlsson
Oct. 06	Meteorology and Natural Resources Management	J. Walsh
Oct. 13	Modeling the Arctic Climate System	J. Walsh
Oct. 20	Permafrost in National Parks of Alaska	S. Panda
Oct. 27	Recreation in Natural Resources Management	P. Fix
Nov. 03	Fire Science Research	K. Slaughter
Nov. 10	Research Methods in the Practice of Public Policy and Public Administration	J. Duffy
Nov. 17	Proposal Presentation (25 minutes per presenter)	
Nov. 24	Thanksgiving Break	
Dec. 01	Proposal submission	

LIST OF LECTURERS

Dr. Clinton Campbell, Entomologist, United State Department of Agriculture (USDA), Animal and Plant Health Inspection Services (APHIS), Plant Protection and Quarantine (PPQ), Federal Way, Washington.

Dr. Bruce Clarke, Extension Specialist in Turf Pathology, Ralph Geiger Endowed Chair in Turfgrass Science, School of Environmental and Biological Sciences, Rutgers, The State

Dr. John Duffy, Associate Professor, America Institute of Certified Planners (AICP), Certification Maintenance (CM), Department of Public Policy, University of Alaska Anchorage (UAA)

Dr. Peter Fix, Professor of Outdoor Recreation, Department of Natural Resources and Environment, College of Natural Sciences and Mathematics (CNSM)

Dr. Meriam Karlsson, Professor of Horticulture, Agricultural and Forestry Experiment Station (AFES), Institute of Agriculture, Natural Resources and Extension (IANRE), and Department of Natural Resources and Environment, CNSM

Ms. Rosemary Madnick, Director, Office of Grants and Contract Administration (OGCA), UAF

Dr. Jenifer Huang McBeath, Professor of Plant Pathology and Biotechnology, AFES, INARE and Department of Natural Resources and Environment, CNSM

Dr. David Norton, Researcher (retired), Physiology, Ecology, Science Historian, UAF

Dr. Santosh Panda, Associate Professor of GIScience, IANRE, and Department of Natural Resources and Environment, CNSM

Mr. Kent Slaughter, Deputy State Director, Fire and Aviation, Manager of Alaska Fire Service,
Bureau of Land Management (BLM), Alaska DOI Region 11

Dr. David Valentine, Professor of Forest Soils, AFES, INARE and Department of Natural
Resources and Environment, CNSM

Dr. John Walsh, Chief Scientist, Alaska Center for Climate Assessment & Policy, Alaska
Climate Adaptation Science Center (CASC), International Arctic Research Center
(IARC).