

# **NRM 601: RESEARCH METHODS IN NATURAL RESOURCES MANAGEMENT**

**Fall Semester 2018**

## **COURSE SYLLABUS**

### **CLASSES**

Lectures and discussions, Friday, 1:00 to 3:00 pm, AHRB 183

### **INSTRUCTOR AND COORDINATOR**

Dr. Jenifer Huang McBeath

Office: 130 Arctic Health Research Building (AHRB)

Telephone: 474-7431

Email: [jhmcbeath@alaska.edu](mailto: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 = 80-90%

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. 31	Introduction	J. McBeath
Sept. 07	Ethics	D. Valentine
Sept. 14	Grantsmanship: Nuts-Bolts of a Research Career	S. Boatwright
Sept. 21	Qualitative data collection, Participant Observation and Elite Interviewing	G.A. McBeath
Sept. 28	Plant Pathology Research Methods	J. H. McBeath
Oct. 05	Entomological Research	C. Campbell

Oct. 12	Recreation in Natural Resources Management	P. Fix
Oct. 19	Meteorology and Natural Resources Management	U. Bhatt
Oct. 26	Soil Sciences Research Methods	M. Zhang
Nov. 02	Modeling the Arctic Climate System	J. Walsh
Nov. 09	Use of UAS in Natural Resources Management	C. Cahill
Nov. 16	Data Management	S. Bert-Harte
Nov. 30	Methods in Horticultural Research	K. Karlsson
Dec. 07	Proposal Presentation (30 minutes per presenter)	
Dec. 12	Proposal submission	

### **LIST OF LECTURERS**

**Dr. Uma Bhatt**, Professor and Chair, Atmospheric Sciences; Director, CIFAR.

**Ms. Sandra Boatwright**, Manager, Proposal and Publication Office, Institute of Northern Engineering.

**Dr. Syndonia Bret-Harte**, Associate Professor, Institute of Arctic Biology, Biology and Wildlife; Arctic Observatory Network.

**Dr. Cathy Cahill**, Director, Alaska Center for Unmanned Aircraft System Integration.

**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. Peter Fix**, Associate Professor of Outdoor Recreation, Department of Natural Resources, School of Natural Resources and Extension (SNRE)

**Dr. Meriam Karlsson**, Professor of Horticulture, AFES, and Department of Agriculture and Horticulture, SNRE

**Dr. G. A (Jerry) McBeath**, Professor Emeritus, Political Science, College of Liberal Arts (CLA).

**Dr. J. H. McBeath**, Professor of Plant Pathology and Biotechnology, AFES and Department of Agriculture and Horticulture, SNRE

**Dr. David Valentine**, Professor of Forest Soils, Department of Natural Resources, AFES, SNRE

**Dr. John Walsh**, Chief Scientist, International Arctic Research Center (IARC).

**Dr. Mingchu Zhang**, Professor of Agronomy/Soil Sciences, AFES, Department of Agriculture and Horticulture, SNRE.