

FIELD TECHNIQUES

~ Fall 2019 ~

Semester Theme: *Sustainable Water and Watersheds*

Class Meets: M 2:00 – 4:50 pm; Stone Hall 217

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Course Description

This course is intended to give you practical experience for use in designing and implementing research in the geographical sciences and in professional practice. We will emphasize a variety of geospatial, quantitative, and qualitative research methods used by geographers in the field to investigate problems and questions that are grounded in one or more of the five traditional foci of geography: spatial, earth science, human/environment interaction, regions, and place/landscape. You will complete several field projects and exercises that delve into physical and spatial geographic work such as geomorphology, climatology, cartography (basic mapping), global positioning systems (GPS), as well as human geographic approaches that involve interviewing, observation, social surveys, and content analysis.

Course Mechanics

This course meets once weekly for almost three hours. Sessions might include a lecture and field exercise, or only a field exercise. There are no hours assigned to any GIS/Computer Lab work during the sessions. However, you might want to analyze your data and prepare your assignments in one of Geography's computer labs (Stone 106, Stone 107, Stone 218, Stone 219). For the field laboratory portion, you should be prepared to be working outside, as all the work will be on and around campus and Mount Sentinel, Rattlesnake Creek, and other locations of interest in Missoula. You will be working in groups of two to three, and on some occasions, you may be working in the field outside of the scheduled fieldwork time or perhaps on a different day. We will teach you the basics during the field lab period, but it is up to you and your group to conduct the field lab, record your findings, analyze the data, and present your work via field lab reports or other means as directed.

Required Textbook and Supplementary Materials

There is no required textbook for this course. Readings will be provided via Moodle for given weeks. Be sure to read the assigned material prior to the pertinent class and/or lab session.

Classroom/Field Policies and Procedures

The following policies allow us to teach without distractions and to create and support a pleasant atmosphere and learning environment:

- Please make sure your cell phone is muted in the classroom and during the fieldwork. Refrain from texting, etc. (As an exception, you will use your cell phone for specific lab- related exercises).
- Be on time and stay the entire time! We expect everyone to be on time for class (inside and outside) in order to not disturb the session. And please avoid leaving class early.
- Equipment: much of the field equipment that you will use is relatively fragile and/or sensitive. You must take good care of this equipment and properly handle, store, check out, and return it as directed. Those observed mal-treating any equipment will be counseled as appropriate.

Other Policies

- Accommodations: The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students. If you think you may have a disability adversely affecting your academic performance, and you have not already registered with Disability Services, please contact Disability Services in Lommasson Center 154 or 406.243.2243. We will work with you and Disability Services to provide an appropriate modification.
- All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or disciplinary sanction by the University. All students need to be familiar with the Student Conduct Code (it is posted on Moodle). The Code is available for review online http://www.umt.edu/vpsa/policies/student_conduct.php. Cheating and plagiarism are not tolerated and will be dealt with as outlined in the Code.
- Due to the dynamic nature of scheduling and unforeseen events, the instructor and TA reserve the right to make changes to this syllabus as needed and if necessary.

Grading Scheme

A	93 – 100%
A-	90 – 92.99%
B+	87 – 89.99%
B	83 – 86.99%
B-	80 – 82.99%
C+	77 – 79.99%
C	73 – 76.99%
C-	70 – 72.99%
D+	67 – 69.99%
D	63 – 66.99%
D-	60 – 62.99%
F	59.99% and below

The course is offered as traditional “T” letter grade only.

Attendance Policy

Attendance is important for your success in this science course, and therefore, counts for 15% of the final course grade. We will take attendance during each session. If you cannot make it to a session, please inform us via email and generally describe the reason why you will miss or have missed a session.

Required Assignments and Value

Assignment	Points
10 Field Labs (20 points each)	200
Final Course Project (group report and presentation)	125
Attendance (5 points for each class meeting)	75
Total	400

Assignments and Fieldwork Activities:

The fieldwork activities and associated assignments encompass the practical or applied side of the course. Each such field lab is designed to cover an aspect of a sub-discipline within geography and requires a plan, procedure, analysis, and write-up. The field labs will be discussed at the beginning of each session, and then the actual fieldwork will consist of a demonstration and the completion of the fieldwork either during the remaining time of the session or outside of class time. The fieldwork forms the crux of this course, and it constitutes a major part of your final grade. Each field report will be completed in small groups and will be due **two weeks** after the initial lab session.

Course Project

Completion of the Course Project will allow you to demonstrate that you are able to successfully integrate the various elements of the course. You will prepare and undertake a Field-Based Research Project and Presentation that will detail (appropriately introduce, describe, schedule):

- The Problem:* What is the water or watershed topic and research question that your field project addresses? Examples: flood or drought hazard, human perceptions concerning water quality, aquatic invasive species, lawn watering practices, water consumption, storm water management, meteorological variability across a landscape continuum, hillslope erosion potentials related to slope modification, different types of physical units (plant associations, morphological features, habitats) that correspond to a particular approach to water-wise landscaping.
- Background:* What do prior studies indicate about the nature of the particular issue or question (Problem) that you are investigating? Examine and summarize key findings from several relevant bodies of published literature in the form of scientific papers such as peer reviewed journal articles, government reports, etc.
- Methods:* What are the data you collect? What are the data collection methods, tools, and/or instruments that you use? How do you sample in such a way to ensure that you are obtaining a representative sample? How many observations are necessary to achieve sample validity? What are the analytical methods you employ to analyze the data and develop your findings? What are the specific tools that you use for data analysis, and why have you chosen to use these?
- Findings:* What are the major results that your team has produced?

Additional Information

1. Please consult the Class Schedule for relevant dates.
2. For assistance with writing, please consult the on-line resources of the UM Writing Center in the Mansfield Library.

Tentative Schedule

Date	Topic	Remarks
WEEK 1	Introduction: Data Quality, Ethics, and Field Observation	
Aug. 26	Introduction to the Course Lab 1: Field Observations (UM campus, Missoula, Clark Fork River)	
WEEK 2	Labor Day ~ Holiday	
Sept. 2	Lab 1: Field Observations (continued)	No Class Meeting
WEEK 3	GPS Navigation	
Sept. 9	Lab 2: GPS (UM campus/Missoula)	Lab 1 due
WEEK 4	Stream Hydrology	
Sept. 16	Lab 3: Stream Channel Unit Classifications and Applications with Dr. David Shively (Rattlesnake Creek, Greenough Park Pavilion)	
WEEK 5	Methods in Environmental Planning	
Sept. 23	Lab 4: Riparian and Floodplain Delineation with Dr. David Shively (Rattlesnake Creek)	Lab 2 due
WEEK 6	Repeat Photography	
Sept. 30	Lab 5: Repeat Photography with Kevin McManigal (UM/Missoula)	Lab 3 due
WEEK 7	Compass Orientation	
Oct. 7	Lab 6: Compass Traverse (UM Campus)	Lab 4 due
WEEK 8	Research Ethics and Social Survey Data and Methods Part I	
Oct. 14	Lab 7: Research Ethics; Social Surveying with Dr. Jill Belsky (UM campus/Missoula)	Lab 5 due
WEEK 9	Social Survey Data and Methods Part II	
Oct. 21	Lab 8: Drinking Water Survey facilitated by Dr. Jill Belsky (UM campus/Missoula)	Lab 6 due
WEEK 10	Analyzing Cultures of Water	
Oct. 28	Lab 9: Analysis of Cultural Texts (Missoula and surroundings)	Lab 7 due
WEEK 11	Social-Hydrological System Assessment	
Nov. 4	Lab 10: Assessment of Urban and Rural Waterways (Clark Fork River, Rattlesnake Creek, surrounding creeks)	Lab 8 due
WEEK 12	Veteran's Day ~ Holiday	
Nov. 11	Student Group Projects Preparation and Fieldwork (UM/field sites)	Lab 9 due No Class Meeting
WEEK 13	Student Group Projects	
Nov. 18	Student Group Projects Preparation and Fieldwork (in class, field sites)	Lab 10 due
WEEK 14	Student Group Projects	
Nov. 25	Presentations of Group Projects (in class)	
WEEK 15	Student Group Projects	
Dec. 2	Presentations of Group Projects (in class)	
FINALS	Course Wrap-up	
Dec. 9	Final meeting, 10:00am -12:00pm	Final projects due

