1-2014

GEO 491.02: Special Topics -- Exploration Geophysics

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GEOS 491-02
ST – EXPLORATION GEOPHYSICS
SPRING SEMESTER 2014 SYLLABUS

Lecture: Tuesday and Thursday; 3:40 to 5:00 PM; CHCB #333
Laboratory: None

Instructor: Robert W. Lankston
CHCB #316
Phone 243-####
Email bob.lankston@umontana.edu .

Office hours: 2:30 to 3:30 PM Tuesday and Thursday and other times by appointment.

Course Text: None. Readings will be assigned from library and on-line sources.

Course Goal: To illustrate how basic geophysical methods are rooted in the principles of physics and the mathematics that describe those principles, and to illustrate how some common geophysical methods are applied for exploring for targets at various scales.

Class Attendance: Attendance is required. Material will be presented in lecture that is not available through assigned readings or material posted to Moodle. Exams may include any material from assigned readings and lectures.

Tentative Topical Schedule: Because of the anticipated diversity of the backgrounds of the students in the class, actual progress may vary somewhat from the schedule below. Dates, therefore, are approximate

Dates/Topics
1/28 – 1/30
Introduction. Start gravity method
2/4 – 2/13
Continue gravity method
2/18 – 2/27
Magnetic method
3/4
Hour exam on gravity and magnetic methods. *(This exam could be on 2/27 if gravity and magnetic methods topics are completed sooner.)*
3/6 – 3/18
Begin dc resistivity method
3/20
Induced polarization (IP) method
3/25
Electromagnetic (EM) method
3/27

Hour exam on electrical/electromagnetic methods
4/1 – 4/3
Spring break
4/8 – 4/17
Refraction seismic method
4/22 – 5/1
Reflection seismic method
5/6
Radar method
5/8
Radiometry and well logs
5/15 Final Exam, 1:10 PM to 3:10 PM

Course Grade: Final grades will be based on the following percentage ranges: 100-90% A, 89-80% B, 79-70% C, 69-60% D, 59% and below F. Plus and minus grade modifiers may be inserted at the instructor's discretion. **All exams and submitted materials will be counted in determining the final grade in the course.** The weighting of daily/weekly assignments and examinations is:

% of Final Grade	
20.0	Daily/weekly assignments and participation
25.0	Gravity/magnetics exam
25.0	Electrical/electromagnetics exam
30.0	Final exam
100.0	% of total

Exams: The exams will be primarily definitions and discussions. Basic derivations of equations are also possible. Exams may include questions that request sketches of mathematical functions, flow charts of processes, or the extraction of information from graphs. Some calculations may be required. The final exam will cover primarily the material introduced after spring break. However, some of the post-spring break topics will relate to material presented prior to spring break.

Student Conduct Code: Students are expected to be familiar with the Student Conduct Code. It outlines the rights and responsibilities of students at The University of Montana. Being a student at UM presupposes a commitment to the principles and policies embodied in the Code. The Code can be found at the Vice President for Student Affairs web site at http://life.umt.edu/vpsa/student_conduct.php

Course Accommodations (DDS): Students with disabilities will receive reasonable accommodations in this course. To request course modifications, please contact the instructor as soon as possible. The instructor will work with Disability Services in the accommodation process. For more information, visit the Disability Services website at http://life.umt.edu/dss or call 406-243-2243 (Voice/Text).