

GEOLOGY 2408

Geological Field Skills

SPRING 2021

Dr. Urbanczyk, WSB 320 (-8110, kevinu@sulross.edu)
OFFICE TR 8:30-10:30; W 8:30-9:30, R 2-3
Sul Ross State University

Purpose and Organization of Course: This course will focus on field data collection and laboratory computational skills. The course will begin with an overview of field data collection, details of topographic and classed maps, and an overview computational skills as they relate to field data collection and processing. This will be followed with a review of field survey equipment and field excursions collect field data for lab processing.

Learning Objectives: After completing this course, students will be expected to be able to utilize the following software to process field data:

- Excel – a standard spreadsheet
- Python – a programming language
- ArcMap – a Geographical Information System

Students will also be familiar with the operation of the following field data collections tools:

- Brunton compass
- Jacob's staff
- Survey level
- Basic GPS
- Total Station
- Survey Grade GPS
- Basic Water Quality Probe
- Stream Flow measurement (Flow Tracker and ADCP)
- Groundwater level measurement tool (sounder)

Lastly, students will be capable of creating topographic and geologic maps from data collected in the field

Class and lab meets in GIS lab on TR 11-1:40

Problem sets: Weekly problem sets will be assigned. Unless otherwise noted, these will be due at the end of lab on Thursday.

In-class quizzes: In class quizzes will be issued periodically to encourage review of current material.

Field Trip(s): on campus and other destinations TBD.

Semester projects: The extended trip will be used to collect data for a field component – location TBD.

Classroom Conduct:

The Student handbook states under Student Misconduct, number 21, "Such prohibition includes disorderly classroom conduct that obstructs, interferes with, inhibits and/or disrupts teaching and/or classroom activities." Behavior which is included in this category: 1) persistent talking to ones' neighbors during lecture, 2) coming to class late or leaving early, 3) the use of cellular phones or MP3 devices in the classroom. CELL PHONES MUST BE TURNED OFF IN CLASS. This includes texting, emailing and social networking. *(If you are a member of an EMS/VFD group or have a child in day care and they must be able to reach you, let me know and we will discuss.)* Offenders of this policy will be asked once to stop and 5 points will be taken from their grade. If it occurs a second time, the offender will be instructed to leave the classroom, and there will be a meeting with the Dean of Student Life. If there are further incidents, UDPS will be called and offenders will be physically ejected from the classroom and will likely be expelled from the University.

GRADING SCHEME	%
Exam 1	10
Exam 2	10
Final Exam	10
Homework/Field work	15
Term project	15
In-class quizzes	10
Lab	30
Total	100

Students Needing Special Accommodations:

Sul Ross State University is committed to equal access in compliance with the Americans with Disabilities Act of 1973. It is the student's responsibility to initiate a request for accessibility services. If you have a disability, find out what your resources are: Students seeking accessibility services must contact Mary Schwartze in Disabilities Services, Ferguson Hall, Room 112. The mailing address is PO Box C-171, Sul Ross State University, Alpine, Texas 79832. Telephone: 432-837-8203.

Distance Education Statement: Students enrolled in distance education courses have equal access to the university's academic support services, library resources, and instructional technology support. For more information about accessing these resources, visit the SRSU website. Students should submit online assignments through Blackboard or SRSU email, which require secure login information to verify students' identities and to protect students' information. The procedures for filing a student complaint are included in the student handbook. Students enrolled in distance education courses at Sul Ross are expected to adhere to all policies pertaining to academic honesty and appropriate student conduct, as described in the student handbook. Students in web-based courses must maintain appropriate equipment and software, according to the needs and requirements of the course, as outlined on the SRSU website.

week	date	Topic	Lab
1	1/12	Field data collection - review	Field data collection - review
	1/14	Software review - excel, python ...	Software review - excel, python ...
2	1/19	Summary of survey problem	Survey problem
	1/21	Solve the survey problem	Survey problem
3	1/26	Pace and Brunton review	Go outside and collect data - Pace and Brunton
	1/28	Apmonitor tutorial excel	process Pace and Brunton data
4	2/2	Jacob's staff review	Go outside and collect data - Jacob's staff
	2/4	Apmonitor tutorial excel	process Jacob's staff data
5	2/9	GPS review	Go outside and collect basic GPS data
	2/11	Apmonitor tutorial excel	process GPS data
6	2/16	Survey level review	Go outside and collect data with survey level
	2/18	Apmonitor tutorial python	process survey level data
7	2/23	survey grade GPS review	Go outside and collect survey grade GPS data
	2/25	Apmonitor tutorial python	process survey grade GPS data
8	3/2	process data	Go outside and collect Total Station data
	3/4	process data	process data
	3/9	Spring Break	
9	3/11		
	3/16	Intro to UAV / SFM	Intro to UAV / SFM
	3/18	collect data - UAV	collect data - UAV
10	3/23	process data	Structure from motion
	3/25	Intro to LiDAR	Intro to LiDAR
11	3/30	collect data LiDAR	collect data LiDAR
	4/1	process data	process LiDAR data
12	4/6	Field?	
	4/8	process data	process data
13	4/13	process data	process data
	4/15	process data	process data
14	4/20	process data	process data
	4/22	presentations	presentations
15	4/27	presentations	presentations
	5/3	Final exam Monday 3-5	