

# GEOL 4403 – Igneous & Metamorphic Petrology

## Spring 2021

### Sul Ross State University

**TA:** Sara Grannis

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**Office:** WSB 313

**Hours:** T/Th 11-12:30, Wed 10-12, Mon & Fri by appointment only

**Lab Sections:** 01 & 02

**Lab Time:** Wed 2-4:50 & 6-9

**Lab Room:** WSB 303

#### **Lab Description:**

This lab focuses on practical application of theoretical material learned in lecture. Students will cover a number of topics related to igneous and metamorphic petrology. This includes identifying and classifying various igneous and metamorphic rocks and minerals both in hand sample and thin section. These topics will be explored through hands-on exercises and laboratory work.

#### **Required Text:**

Philpotts, Petrography of Igneous and Metamorphic Rocks

#### **Optional text:**

Nesse and Shulze Introduction to Optical Mineralogy

#### **General Objectives:**

1. Knowledge about the application of the scientific method as a tool for understanding Earth's processes
2. Identify and interpret various igneous and metamorphic rocks and minerals

#### **Grading:**

**Attendance and Late Work:** Attendance will be taken weekly by a short quiz at the start of each lab over the new lab. Labs are due at the beginning of the lab 1 week from when it is assigned unless otherwise stated. Penalty for late work will be 25% for each day past due. After 4 days it will automatically be a zero.

**If a student must miss lab, make prior arrangements ahead of time or email me BEFORE the start of lab with a legitimate reason.**

The only acceptable excuses for missing class are those due to illness, approved Sul Ross sanctioned events, and observation of religious holidays. All excused absences **must** be documented on paper. With an appropriate excuse, you must make up missed quizzes/exams/labs **within 10 days** of the last day of the absence or you have failed to meet your course responsibilities and will receive a zero.

University policy dictates that your instructor can drop you with an F from the course after 6 absences from TR classes or after 9 absences from MWF classes.

Quizzes/Attendance	10%
Labs	60%
Midterm	15%
Final	15%
<b>Total</b>	<b>100%</b>

### **Student Responsibilities:**

This is an upper-level class which has the expectation of presenting work that reflects this. Assignments should be turned in neat with legible handwriting or typed and **on time**. Please come prepared and ready to stay the time required to complete the assignment. If additional time is needed past the allotted lab then arrangements will be made during scheduled office hours. This is the last step to graduation for many of you and you need to prepare for a career beyond school! Open discussion of labs is allowed and encouraged to an extent. However, each person is responsible for their own work.

### **Sul Ross State University Attendance and Lab Policies:**

**Lab disruption:** 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 lab activities." Behavior which is included in this category: 1) persistent talking to ones' neighbors during lecture, 2) coming to lab late or leaving early, 3) the use of cellular phones or MP3 devices in the lab room. **CELL PHONES MUST BE TURNED OFF IN LAB.** 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 lab and will be marked absent for that day. This action will be followed by a meeting with the Dean of Student Life. If there are further incidents, UDPS will be called and offenders will be physically ejected from lab. This will quite likely be followed by expulsion from the University.

**COVID protocol:** If you are feeling ill, have a fever of 100 F or greater, or have any symptoms associated with the COVID-19 infection; stay home and self-quarantine until you are tested and cleared, or have been symptom free for over 10 days. You will NOT be left behind, if you become ill.

### **STATEMENT ON WEARING MASKS:**

**A mandatory campus-wide mask policy is in place. Masks must be kept on during classes and within all public places in campus buildings at all. Failure to do so will be treated as a class disruption, per the Student Handbook.**

**Plagiarism/Cheating Policy:**

The student is referred to the student handbook on Academic Honesty. If you are caught cheating or plagiarizing you will either be brought before the dean of the College with expulsion proceedings initiated, or given an F in the course. All work turned in must be your own.

**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 Counseling and Accessibility Services, Ferguson Hall, Room 112. The mailing address is PO Box C-171, Sul Ross State University, Alpine, Texas 79832. Telephone: 432-837-8203. Semester Schedule: Lecture topics, reading assignments, lab topics and exam weeks: Chapters are short. Read all of the main-body sections of the listed chapters.

<b>Week</b>	<b>Week of</b>	<b>Lecture</b>	<b>Lab</b>
1	Jan 11	Introduction	No Lab
2	Jan 18 <b>Monday Holiday</b>	Basalts and related rocks <b>*HOLIDAY 1/18*</b>	Optical Mineralogy Review
3	Jan 25	Basalts and related rocks Magma Differentiation	Igneous Minerals & Textures
4	Feb 1	Magma Differentiation contd. <b>*EXAM 1 * 2/5*</b>	M&M Lab Magmatic Differentiation
5	Feb 8	Gabbroic rocks	Mafic Igneous Rocks
6	Feb 15	Gabbroic rocks Ultramafic and Ultrabasic rocks	SEM/ED/XRF Processing Geochemical data
7	Feb 22	Ultramafic and Ultrabasic rocks Andesite, dacite, and rhyolite	Quantitative petrology Spreadsheets, modeling magmatic evolution
8	March 1	Andesite, dacite, and rhyolite	<b>*LAB MIDTERM*</b>
<b>SPRING BREAK ---- MARCH 8-12 ---- NO CLASS/LAB</b>			
9	March 15	Pyroclastic rocks <b>*EXAM 2 * 3/19*</b>	Intermediate and felsic rocks
10	March 22	Pyroclastic rocks/ Granitic rocks	Plutonic rocks
11	March 29 <b>Friday Holiday</b>	Granitic rocks/ Alkali rocks <b>*NO CLASS 4/2*</b>	Pyroclastic rocks
12	April 5	Alkali rocks	<b>DMSP field trip</b>
13	April 12	Alkali rocks Metamorphic rocks	Metamorphic rocks pt 1
14	April 19	Metamorphic rocks	Metamorphic rocks pt 2
15	April 26	Presentations	<b>*LAB FINAL*</b>

