GEOLOGY 2401 – LITHOLOGY
SPRING 2024
Geology Program
Department of Natural Sciences
College of Agriculture, Life, and Physical Sciences
Sul Ross State University
MWF 11:00-11:50 Lab M 2-3:40

Dr. Liz Measures
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Office hours:
MWF 8:30 am – 10:00 am
TuThr 2:30 pm – 4:00 pm

or by appointment; call or email to arrange

Course Description
Introductions to the basic concepts of identification, classifications, and origins of igneous, sedimentary, and metamorphic rocks. Laboratory exercises consist of hand specimen identification and classification of suites of all three rock classes.
[2023-2024 SRSU Catalog description]

Lithology is a fundamental sophomore class for the Geology B.S. degree. It provides a content foundation for other topics such as petrography, petrology, and any field study course or class trip. Emphasis is placed on Identification and classification. Mineral identification is basic to many classifications. The change in classification schemes over time will be shown and discussed.

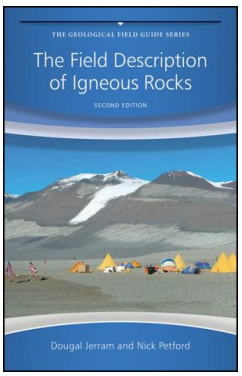
This class will:
1) Provide the student with the skills needed to identify and classify hand samples of all three rock types. Samples will be seen in lab and possibly in the field.
2) Provide the student with a background in the vocabulary, past and present, used in the description of all three rock types. This will enable the student to read and understand technical literature and to be able to communicate findings in written format.
3) Provide the student with the information to interpret the origin, history, and tectonic implications of any rock sample.

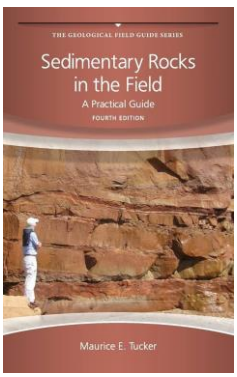
Expected Student Learning/Course Objectives/Outcomes
At the end of the semester, the successful student will be able to apply critical reasoning and problem-solving skills to:
* identify the three rock classes in hand sample using accepted classification schemes*(SLO # 2 and SLO # 5)*
* describe a rock and interpret and explain its origin *(SLO # 1 and SLO # 2)*
* interpret the tectonic significance of a rock sample *(SLO # 3)*

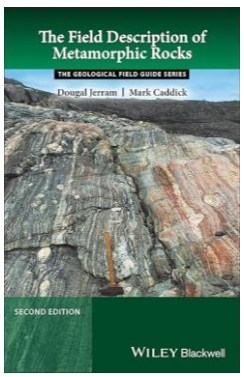
Pre-requisites/Co-requisites
Physical Geology (GEOL 1303/1103), Historical Geology (GEOL 1304/1104).

Required Texts - **Wiley-Blackwell Geological Field Series books**

Field Description of Igneous Rocks, 2nd ed. 2011. Jerram and Petford. ISBN: 9780470022368
Sedimentary Rocks in the Field, A Practical Guide, 4th ed. 2011. Tucker. ISBN: 9780470689165
Field Description of Metamorphic Rocks, 2nd ed. 2022. Jerram and Caddick. ISBN: 9781118618752

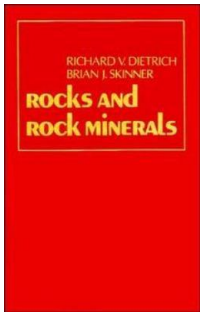






Optional Texts on Reserve in Library (also available on Internet Archive)

Rocks and Rock Minerals
1979
Dietrich and Skinner
John Wiley & Sons
ISBN 0471029343



Textbook of Lithology
1970
Jackson
McGraw-Hill

Materials

notebook/paper pencils hand lens small stapler

Methods of Instruction

The course consists of classroom lecture and lab. Blackboard will be used to post pertinent course material. Day-long field trips may be optional, possibly one may be required.

Attendance/Conduct

You are expected to be in lecture and lab, on time, every scheduled class day and to stay for the entire class period.
Tardiness and leaving during lecture/lab are not acceptable except for serious, legitimate reasons (illness, family emergency, caregiver, emergency responder).
Keep the instructor informed either immediately before or after absences.
If you are going to miss a lecture/lab, or have missed a lecture/lab, written notification (email) must be provided as soon as possible. Be sure to get the notes from another student in the class.
Schedule appointments around lecture/lab times.
Arrangements for missed assignments must be done, and the assignment also done, within one week of the scheduled due date. Only legitimate excuses will allow for make-up (legitimacy will be determined by the instructor). If an exam is not taken within the week, then an all-essay make-up exam will be administered on Dead Day.
Lab will take a MINIMUM of 2 hours per week; the more hours you spend on lab, the better you will understand the material. Lab assignments are due at the end of the lab period. Extra lab time will be available of Fridays.
You are expected to be engaged, awake and on task and to take notes.
Working on another class is not acceptable and may result in your expulsion for that class period.
Students are expected to observe the University's Code of Student Conduct (see Student Handbook).

Electronics Policy

Smart phones, cell phones, i-pod, laptop usage is prohibited during lecture and lab, except for the express purpose of recording or taking notes; points will be deducted from exams for violation of this policy.
Class recordings are not to be posted on any social media/web site.
If electronics are accessed during an exam, then the exam will receive a grade of zero.
Electronics are TURNED OFF. If you need to be excluded from this, email the reason(s) why you need access to these electronics during class.

Disabilities Accommodation

Sul Ross State University (SRSU) is committed to equal access in compliance with the Americans with Disabilities Act of 1973. It is SRSU policy to provide reasonable accommodations to students with documented disabilities. It is the student's responsibility to initiate a request each semester for each class for accessibility services. Students seeking accessibility/accommodation services must contact Mrs. Mary Schwartze Grisham, LPC, SRSU's Accessibility Services Director at 432-837-8203 (leave a message and they will get back to you as soon as possible during working hours), or email mschwartze@sulross.edu or contact Alejandra Valdez, at 830-758-5006 or email alejandra.valdez@sulross.edu . The office is located on the first floor of Ferguson Hall, room 112. The mailing address is P.O. Box C-122, Sul Ross State University, Alpine, Texas, 79832.
You will be provided with an accommodation letter which must be given to the instructor as early as possible in the semester.

Grading/Course Requirements

Requirements:

Exams (3)	57%
Other	13%
homework	
quizzes	
partic/attend	
Lab	30%

Standard grading scheme:

A	≥90%
B	80-89%
C	70-79%
D	60-69%
(D does not count for majors)	
F	≤ 59%

Exams – covers the previous 4 to 4.5 weeks of material; some material carries through so exams are comprehensive to an extent; types of questions variable: true-false, matching, fill-in-the-blank, multiple choice, short answer, sketching, labeling, discussion/essay, samples

Homework – questions over readings from texts

Quizzes – short questions over previous class periods material; possible questions over samples; notes may be used on some quizzes; to evaluate comprehension and alert student to areas that are not understood properly

Lab – hands-on application of studying rocks in hand samples

Field trip(s) – possible; some may be optional, one may be required; trips will probably be day-long trips; applies field identification of minerals and rocks

The following schedule is approximate and subject to change:

Week 1	Jan17 – Jan 19	Intro and Minerals	
Week 2	Jan 22 – Jan 26	Igneous Rocks	
Week 3	Jan 29 – Feb 2	Igneous Rocks	
Week 4	Feb 5 – Feb 9	Igneous Rocks	
Week 5	Feb 12 – Feb 16	Igneous Rocks	
Week 6	Feb 19 – Feb 23	Igneous Rocks	**Exam 1 Fri Feb 23**
Week 7	Feb 26 – Mar 1	Sedimentary Rocks	
Week 8	Mar 4 – Mar 8	Sedimentary Rocks	
Mar 11 – Mar 15	**Spring Break – No class**		
Week 9	Mar 18 – Mar 22	Sedimentary Rocks	
Week 10	Mar 25 – Mar 29	Sedimentary Rocks	
Week 11	Apr 1 – Apr 5	Sedimentary Rocks	**Exam 2 Fri Apr 5**
Week 12	Apr 8 – Apr 12	Metamorphic Rocks	
Week 13	Apr 15 – Apr 19	Metamorphic Rocks	
Week 14	Apr 22 – Apr 26	Metamorphic Rocks	
Week 15	Apr 29 – May 1	Metamorphic Rocks	
Finals Week	**TUES May 7**		**Exam 3 10:15 to 12:15 am**

METHODS OF ASSESSMENT/EVALUATION

Learning outcome assessment will be made on the basis of two (2) Exams and one (1) Final Exam and several homework assignments. The exams will assess the application of critical reasoning and problem-solving skills through short answer questions and multiple-choice questions (with some diagrams). The graded exams will be reviewed, by discussing the logic of the answers to and content of the questions missed by a majority of the class. 'Muddiest Point' discussions of topics that are unclear will be used to assess student critical reasoning. Homework assignments will assess student problem solving skills in applying, describing, and explaining rock types and lithologies.

Geology Undergraduate (Bachelor of Science) Student Learning Outcomes (SLO's):

1. The student will be able to apply a diverse body of Geologic information in the area of Earth history.
2. The student will be able to apply a diverse body of Geologic information in the area of mineralogy and petrology.
3. The student will be able to apply a diverse body of Geologic information in the area of structural geology and tectonics.
4. The student will be able to apply a diverse body of Geologic information in the area of stratigraphy.
5. The student will be able to apply a diverse body of Geologic information in the area of field techniques.

GEOLOGY UNDERGRADUATE (BACHELOR OF SCIENCE) STUDENT MARKETABLE SKILLS:

1. The student will be able to conduct fieldwork.
2. The student will be able to use field equipment.
3. The student will be able to use lab equipment.
4. The student will be able to use library resources.
5. The student will be able to communicate in written and oral format.

LIBRARY

The Bryan Wildenthal Memorial Library offers FREE resources and services to the entire SRSU community. Access and borrow books, articles, and more by visiting the library's website, library@sulross.edu/ . Off-campus access requires logging in with your LoboID and password. Librarians are a tremendous resource for coursework and can be reached in person, by email (srsulibrary@sulross.edu) or phone (432-837-8123).

ACADEMIC INTEGRITY

Students are expected to demonstrate scholarly behavior and academic honesty in the use of intellectual property. A scholar is expected to be punctual, prepared, and focused; meaningful and pertinent participation contributes to learning.
Examples of academic dishonesty include, but are not limited to:
*Turning in work as original that was used in whole or in part for another course and/or professor;
*Turning in another's person's work as one's own;
*Copying from professional works or internet sites without citation;
*Collaborating on a course assignment, exam, or quiz when collaboration is forbidden.
Violations of academic integrity can result in failing assignments, failing a class, and/or more serious university consequences. These behaviors also erode the value of college degrees and higher education overall.
Use of AI is considered to be academic dishonesty in this course. Use of AI will result in a final grade of "F" in this course.

CLASSROOM CLIMATE OF RESPECT

This class should foster free expression, critical investigation, and open discussion of ideas. All people in the class must help create and sustain an atmosphere of tolerance, civility, and respect for the viewpoints of others.