

GEOLOGY 2301 – LITHOLOGY
SPRING 2017
Dept of Biology, Geology and Physical Sciences
Sul Ross State University
MWF 11:00-11:50 Lab M 3-5

Dr. Liz Measures

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Office hours:

MW	9:00 am to 10:00 am
TuTh	8:00 am to 9:00 am
TuWed	3:00 pm to 4:00 pm

or by appointment

Course Description

Lithology is a fundamental sophomore class for the Geology B.S. degree. It provides a content foundation that is prerequisite for other, topics such as petrography and any field study course or class trip. It is an introduction to the basic concepts of identification, classification and origins of igneous, sedimentary and metamorphic rocks. Laboratory exercises consist of hand specimen identification and classification of suites of all three rock classes.

This class will:

- 1) provide you 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 you with a background in the vocabulary, past and present, used in the description of all three rock types to enable you to read and understand technical literature and to be able to communicate your findings in written format.
- 3) provide you with the information to interpret the origin, history and tectonic implications of any rock sample.

Pre-requisites/Co-requisites

Physical Geology (GEOL 1303/1103), Historical Geology (GEOL 1304/1104).

Methods of Instruction

The course consists of classroom lecture and lab. Blackboard will be used to post assignments and ancillary material. Day-long field trips may be optional or required.

Required Texts

The Field Description of Igneous Rocks, 2nd ed. 2011. Jerram and Petford. Wiley-Blackwell. ISBN: 9780470022368

Sedimentary Rocks in the Field, A Practical Guide, 4th ed. 2011. Tucker. Wiley-Blackwell. ISBN: 9780470689165

The Field Description of Metamorphic Rocks. 1991. N. Fry, Wiley-Blackwell.

Materials

notebook/paper pens& pencils hand lens small stapler

Attendance

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 test 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 on Fridays.

Conduct

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 tests for violation of this policy.

Class recordings are not to be posted on any social media/web site.

If electronics are accessed during a test then the test 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 is committed to equal access in compliance with the Americans With Disabilities Act of 1973. It is the policy of SRSU to provide reasonable accommodation to students with disabilities. If you would like to request such accommodation because of a physical, mental, or learning disability, please contact the Accessibility Services Coordinator (ADA coordinator), in Counseling & Accessibility Services, Ferguson Hall Room 112, 432-837-8203. It is the student's responsibility to initiate a request for accessibility services.

Please inform the instructor ASAP of accommodations

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, and discussion/essay

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, some 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	Jan 17 – Jan 20	Intro and Minerals
Week 2	Jan 23 – Jan 27	Igneous Rocks
Week 3	Jan 30 – Feb 3	Igneous Rocks
Week 4	Feb 6 – Feb 10	Igneous Rocks
Week 5	Feb 13 – Feb 17	Igneous Rocks
Week 6	Feb 20 – Feb 24	Igneous Rocks
		Exam 1 Fri Feb 24
Week 7	Feb 27 – Mar 3	Sedimentary Rocks
Week 8	Mar 6 – Mar 10	Sedimentary Rocks

Mar 13 – Mar 17 Spring Break – No class

Week 9	Mar 20 – Mar 24	Sedimentary Rocks
Week 10	Mar 27 – Mar 31	Sedimentary Rocks
Week 11	Apr 3 – Apr 7	Sedimentary Rocks
		Exam 2 Fri Apr 7
Week 12	Apr 10 – Apr 14	Metamorphic Rocks

Apr 14 Good Friday Holiday – No class

Week 13	Apr 17 – Apr 21	Metamorphic Rocks
Week 14	Apr 24 – Apr 28	Metamorphic Rocks
Week 15	May 1 – May 3	Metamorphic Rocks

Finals Week TUES May 9 Exam 3 10:15 to 12:15 am

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 (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)

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.

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.

SCIENCE STANDARDS

Standard I. The science teacher manages classroom, field, and laboratory activities to ensure the safety of all students and the ethical care and treatment of organisms and specimens.

Standard II. The science teacher understands the correct use of tools, materials, equipment, and technologies.

Standard III. The science teacher understands the process of scientific inquiry and its role in science instruction.

Standard IV. The science teacher has theoretical and practical knowledge about teaching science and about how students learn science.

Standard V. The science teacher knows the varied and appropriate assessments and assessment practices to monitor science learning.

Standard VI. The science teacher understands the history and nature of science.

Standard VII. The science teacher understands how science affects the daily lives of students and how science interacts with and influences personal and societal decisions.

Standard VIII. The science teacher knows and understands the science content appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in physical science.

Standard IX. The science teacher knows and understands the science content appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in life science.

Standard X. The science teacher knows and understands the science content appropriate to teach the statewide curriculum (Texas Essential Knowledge and Skills [TEKS]) in Earth and space science.

Standard XI. The science teacher knows unifying concepts and processes that are common to all sciences.