# HISTORY OF GEOLOGY
# GEOLOGY 3311 – Special Topics
# SPRING 2023

**Geology Program; Dept of Natural Sciences**
**College of Ag, Life, and Physical Sciences; Sul Ross State University**
**MWF 10:00-10:50 am**

**Dr. E. Measures**
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Office hours:
MTWTF 11:00 am to 12:00 pm (noon)
MTW 3:00 pm to 4:00 pm

or by appointment

## Course Description and Course Objectives

This course covers the development, growth and evolution of the science of Geology. The theories of, and contributors to Geology will be traced from ancient beginnings (Egypt, Greece, and Rome), through the Middle Ages and the Renaissance, and to the Modern Period.

Lower-level geology courses and texts do not cover the development and evolution of the geological sciences.

This course will:

1) discuss historical figures and explain their contribution to the science of Geology;
2) discuss and evaluate the evidence used to formulate hypotheses and theories in Geology;
3) discuss the changes, evolution, and growth of the science of Geology;
4) discuss the debates involved in paradigm shifts in the science of Geology.

## Pre-requisites/Co-requisites

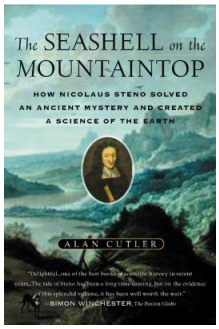
Historical Geology (GEOL 1304/1104).

## Methods of Instruction

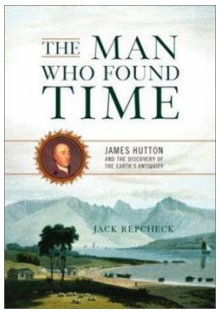
The course consists of classroom lecture and discussions. Printed materials will be posted on Blackboard.

## Required Texts

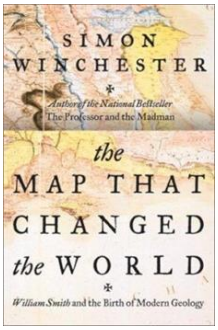
Cutler, A. 2004.
The Seashell on the Mountaintop.
Penguin Grp.
ISBN 0-452-28546-1



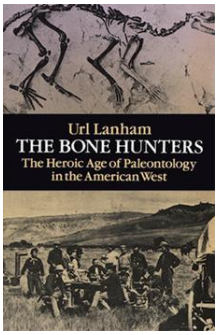

Repcheck, J. 2003.
The Man Who Found Time.
Basic Books, Perseus Grp.
ISBN 987-0-465-01337-1




Winchester, S. 2001.
The Map That Changed the World.
HarperCollins Pub.
ISBN 0-06-019361-1




Lanham, U. 1991.
The Bone Hunters.
Dover Publications, Inc.
ISBN 0-486-26917-5



## Optional Books

Hallam, A. 1989. Great Geological Controversies, 2nd ed. Oxford Science Pubs. ISBN 978-0198582199.

Faul, H. and Faul, C. 1983. It Began with a Stone - A History of Geology from the Stone Age to the Age of Plate Tectonics. John Wiley & Sons. ISBN 0-471-89735-3.

Fenton, C, and Fenton M. 1945. Giants of Geology. Doubleday & Co. PDF can be found on-line. Free download.

Adams, D. 1938. The Birth and Development of the Geological Sciences. Dover Pubs. ISBN 978-0486263724. PDF can be found on-line. Free download.

Geikie, A. 1905. The Founders of Geology, 2nd ed. Dover Pubs. ISBN 978-1330083567. PDF can be found on-line. Free download.

## Other Recommended Readings

Links to news articles, or websites, applicable to topics being covered will be posted on Blackboard.

## Materials

notebook/paper pens& pencils **access to printer and scanner**

### Attendance

You are expected to be in lecture, on time, every scheduled class day and to stay for the entire class period.

Tardiness and leaving during lecture are not acceptable except for serious, legitimate reasons (illness, family emergency, caregiver, emergency responder).

Keep the instructor informed either immediately before or after absences.

Be sure to get the notes from another student in the class.

If you are going to miss a lecture, or have missed a lecture, written notification (email) must be provided as soon as possible. Documentation also needs to be provided.

Schedule appointments around lecture 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 assignment is not taken within the week, then an all-essay make-up assignment will be administered on Dead Day.

### Conduct

You are expected to be engaged, awake and on task, and taking 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, except for the express purpose of recording or taking notes; points will be deducted from tests for violation of this policy.

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

Electronics are TURNED OFF or put away where not accessible during class.

If electronics are accessed during an exam, then the exam will receive a grade of zero.

Each student will be sent an email asking if smart phone access is critical (care-giver, parent). Depending on response to the email, a student may be allowed access to a smart phone during class. The email will also contain information about use of laptops for note-taking during class.

### ADA Statement - 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 documented disabilities. It is the student's responsibility to initiate a request **each semester for each class**. If you would like to request such accessibility/accommodations services, please contact Mary Schwartze Grisham, LPC, SRSU's Accessibility Services Coordinator (ADA coordinator), in Counseling & Accessibility Services, at 432-837-8203 or email mschwartze@sulrosss,edu. Office is located on the first floor of Ferguson Hall, room 112, and the mailing address is P.O. Box C-122, Sul Ross State University, Alpine, Texas, 79832.

Please inform the instructor ASAP of accommodations.

**Grading/Course Requirements**

Requirements:
- Exams (3 or 4) …….. 48%
- Presentations & Papers (2 or 3) ……. 36%
- Other ……. 16%
  - Homework; partic/attend; other

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

Exams – cover 4 to 5 weeks of material. None will be comprehensive unless the material carries through during lecture. Question formats will be variable.

Presentations & Papers – covers topics from 4 to 5 weeks of material; Presentations will be approximately 5 to 10 minutes long and will be made using Powerpoint; a short, written paper or annotated Powerpoint document will accompany the presentation.

Homework – questions over readings

The following schedule is approximate and subject to change:

| | | |
|---|---|---|
| Week 1 | Jan 18 – Jan 20 | Introduction; Stone Age (Prehistory) |
| Week 2 | Jan 23 – Jan 27 | Ancient Greece and Rome |
| Week 3 | Jan 30 – Feb 3 | Eastern Empires & Dark Ages Europe |
| Week 4 | Feb 6 – Feb 10 | 14th to 16th Centuries; fossils, cabinets, mining guilds |
| Week 5 | ***Feb 13*** | ***Exam 1 Mon Feb 13*** |
| | Feb 15 – Feb 17 | 16th to early19th Century; Steno and stratigraphy; Diluvialists; more fossils; Werner and first history of the Earth; Vulcanists, Neptunists, and Plutonists; Catastrophists and Uniformitariamn; Hutton and Geologic Time; early universities, Geologic societies, and publications; Geologic beginnings in America |
| Week 6 | Feb 20 – Feb 24 | |
| Week 7 | Feb 27 – Mar 3 | |
| Week 8 | Mar 6 – Mar 8 | |
| | ***Mar 10*** | ***Exam 2 Fri Mar 10*** |
| | **Mar 13 – Mar 17 Spring Break** | |
| Week 9 | Mar 20– Mar 24 | 19th Century; Sedgewick, Murchison and beginnings of a Geologic Time Scale; Geologic maps and W. Smith; Early Geologic surveys Europe, United Kingdom, and America; Debate about Ice Ages; America's Great Western Surveys; America's Dinosaur Wars; creation of the United States Geological Survey |
| Week 10 | Mar 27 – Mar 31 | |
| Week 11 | Apr 3 – Apr 5 | |
| | **April 7 - Good Friday** | |
| Week 12 | Apr 10 – Apr 14 | |
| Week 13 | ***Apr 17*** | ***Exam 3 Mon Apr 17*** |
| | Apr 19 – Apr 21 | 20th Century; radioactivity and the age of the Earth; Wegner and Continental Drift; Sea Floor Spreading to Plate Tectonics; Mass Extinctions |
| Week 14 | Apr 24 – Apr 28 | |
| Week 15 | May 1 – May 5 | |
| Week 16 | May 8 – May 10 | |
| | **May 11** | **Thursday, Dead Day – No Classes** |
| | ***May 12*** | ***Exam 4 - Friday - 10:15 to 12:15*** |

**Expected Student Learning Outcomes (Required by SAC-SCOC)**

At the end of the semester, the successful student will be able to apply critical reasoning and problem solving skills to:

* describe and evaluate the contributions of numerous individuals in the areas of Earth History, Mineralogy and Petrology, Tectonics, and Stratigraphy *(SLO # 1, SLO # 2, SLO # 3, SLO # 4)*
* summarize, and compare and contrast the body of evidence for numerous geologic theories in Earth History, Mineralogy and Petrology, Tectonics, and Stratigraphy *(SLO # 1, SLO # 2, SLO # 3, SLO # 4)*
* explain, interpret and integrate different developments in the growth of Earth History, Mineralogy and Petrology, Tectonics, and Stratigraphy *(SLO # 1, SLO # 2, SLO # 3, SLO # 4)*
* evaluate and critique the historical debates in the areas of Earth History, Mineralogy and Petrology, Tectonics, and Stratigraphy *(SLO # 1, SLO # 2, SLO # 3, SLO # 4)*

**GEOLOGY UNDERGRADUATE STUDENT LEARNING OUTCOMES (BACHELOR OF SCIENCE 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 BS marketable skills (Required by THECB)**:

* The student will be able to conduct field work.
* The student will be able to use field equipment.
* The student will be able to use lab equipment.
* The student will be able to use library resources.
* The student will be able to communicate in written and oral format.

**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 is appreciated. Examples of academic dishonesty include but are not limited to: turning in work as original that was used in whole or part for another course and/or professor; turning in another person's work as one's own; copying from professional works or internet sites without citation; collaborating on a course assignment, examination, or quiz when collaboration is forbidden.

**Classroom Climate of Respect**

This class will foster free expression, critical investigation, and the open discussion of ideas. All individuals in class (students and instructor), help create and sustain an atmosphere of tolerance, civility, and respect for the viewpoints of others. All must learn how to oppose and disagree without resorting to tactics of intimidation, harassment, or personal attack. No one is entitled to harass, belittle, or discriminate against another on the basis of race, religion, ethnicity, age, gender, national origin, or sexual preference. Discussion will not be silenced by the difficulty of fruitfully discussing sensitive issues.