# HISTORY OF GEOLOGY

**GEOLOGY 3311 – Special Topics**
**SPRING 2025**
**Geology Program; Natural Sciences Dept.; ALPS College**
**Sul Ross State University**
**MWF 11:00-11:50 am**


## Dr. E. Measures

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Office hours:
**MTWF 9:00 am to 10:30 am**
**MTW 3:00 pm to 4:00 pm**
or by appointment; call or email to arrange;
weekly schedule posted next to office door

## Course Description and Course Objectives

This course covers the development, growth and evolution of the science of Geology. The developments in Geology, and contributors to the science, are tracked from ancient beginnings (Egypt, Greece, and Rome), through the Middle Ages and the Renaissance, into the Scientific Revolution (Age of Enlightenment), and finally to the Modern Period.

Lower-level geology courses and texts do not cover the slow development and evolution of the geological sciences, the individuals involved, the controversies, the mistakes, and the breakthroughs. At lower levels science is presented as being immutable.

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

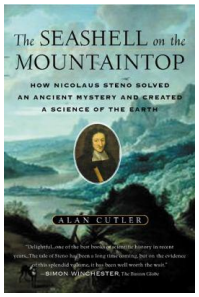
Historical Geology (GEOL 1304/1104).

## Methods of Instruction

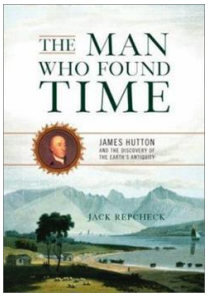
The course consists of 3 hours of classroom lecture and discussions each week.
Printed materials for the course will be posted on Blackboard.

## Required Texts

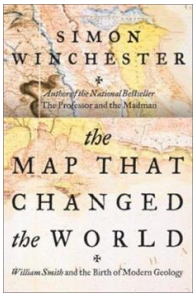
Cutler, A. 2004.
The Seashell on the Mountaintop.
Penguin Grp.
ISBN 0-452-28546-1



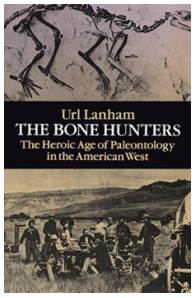

Repcheck, J. 2003.
The Man Who Found Time.
Basic Books, Perseus Grp.
ISBN 987-0-465-01337-1




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

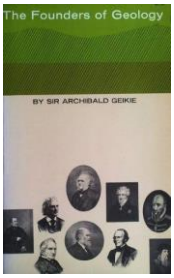
Geikie, A. 1905. The Founders of Geology, 2nd ed. Dover Pubs. ISBN 978-1330083567. PDF can be found on-line. Free download.

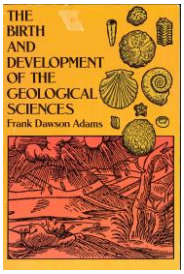
Adams, D. 1938. The Birth and Development of the Geological Sciences. Dover Pubs. ISBN 978-0486263724. PDF can be found on-line. Free download.

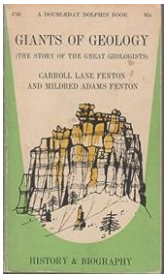
Fenton, C, and Fenton M. 1945. Giants of Geology. Doubleday & Co. PDF can be found on-line. Free download.

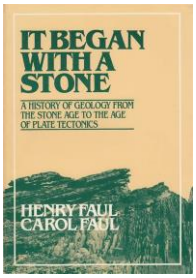
Faul, H. and Faul, C. 1983. It Began with a Stone - A History of Geology from the Stone Age to the Age of Plate Tectonics. John Wiley & Sons. ISBN 0-471-89735-3.

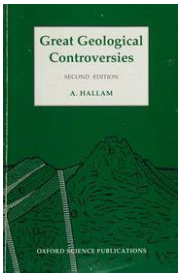
Hallam, A. 1989. Great Geological Controversies, 2nd ed. Oxford Science Pubs. ISBN 978-0198582199.












## Other Course 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 Policy and Student Conduct – Expectations and Requirements

- Be on time to lecture, attend all lectures, and stay throughout the entire designated period.
- Be engaged, awake, and on task.
- Do not work on another class during this class.
- Multitasking during lecture is not a good idea.
- For every hour spent in lecture, at least 2 to 3 hours should be spent outside class studying.
- Where possible, schedule routine medical/dental appointments around lecture/lab times.
- Keep instructor informed either **before** anticipated absence or **soon after** unplanned absence.
- If you are going to miss a lecture, or have missed a lecture, written notification (email) and documentation must be provided as soon as possible. **Be sure to get the notes from another student in the class.**
- Legitimate reasons for tardiness, leaving and returning during class, or leaving class early are, but are not limited to, illness, appointment with specialist, family emergency, caregiver duties, and emergency responder calls.
- Inform instructor **prior** to class if conditions exist that may cause you to leave periodically during class or leave before the end of class.
- Arrangements for missed assignments and exams must be made, and the make-up done, within one week of the scheduled due date. Points will be deducted for late work on assignments other than exams. If an exam is not taken within a week of being administered, then an all-essay make-up exam will be given on Dead Day.
- Late assignments will not be accepted once graded papers are returned.
- You are expected to check your SR email at least 3 times a day; morning, noon, and evening.
- You are expected to check Blackboard.
- You are expected to observe the University's Code of Student Conduct (see the Student Handbook).

## Electronics Policy

- Smart phones, cell phones, i-pods, laptops, earbuds (etc.) are to be turned OFF during lectures.
- Texting, checking email, playing games, surfing the internet, working on another class during lectures is **not acceptable and is prohibited.**
- If taking notes on an electronic device is your preferred method, please **discuss this with the instructor.**
- If electronics are to be used for recording audio or for taking images of material written on the board, please **discuss this with the instructor.** If recording is allowed, then class recordings are NOT to be posted on any social media/web site.
- If you need access to your electronics during lectures (e.g., caregiver, emergency responder), for purposes other than note taking, audio recording, or obtaining images of material written on the board, **discuss this with the instructor.**
- Points will be deducted from exams for violation of the electronic policy during lectures.
- If electronics are accessed during an exam, then the exam will **receive a grade of zero.**
- If an electronic device makes an audible noise during an exam, then the exam will **receive a grade of zero.**
- **Use of any AI on any assignment will result in a grade of zero on the assignment.**

## Grading/Course Requirements

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

Standard grading scheme:
- A ..... ≥90%
- B ..... 80-89%
- C ..... 70-79%
- D ..... 60-69%
  - (D does not count for majors; course must be repeated)
- 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 15 – Jan 17 | Introduction; Stone Age (Prehistory) |
| Week 2 | Jan 21 – Jan 24 | Ancient Greece and Rome |
| Week 3 | Jan 27 – Jan 31 | Eastern Empires & Dark Ages Europe |
| Week 4 | Feb 3 – Feb 7 | 14th to 16th Centuries; fossils, cabinets, mining guilds |
| Week 5 | Feb 10 – Feb 14 | ***EXAM 1 MON Feb 10*** |
| | | 16th to early19th Century; Steno - stratigraphy; Werner - first history of the Earth; Diluvialists, Vulcanists, Neptunists, and Plutonists; Uniformitarianists and Catastrophists; Hutton - Geologic Time; Geologic societies, and publications; Geology in America<br>The Seashell on the Mountaintop readings<br>The Man Who Found Time readings<br>1st presentation and paper due |
| Week 6 | Feb 17 – Feb 21 | |
| Week 7 | Feb 24 – Feb 28 | |
| Week 8 | Mar 3 – Mar 7 | |
| Week 9 | Mar 10 – Mar 14 | ***EXAM 2 MON Mar 10*** |
| | | 19th Century; Sedgewick, Murchison; Time Scale |
| **Mar 17 – Mar 21 Spring Break** | | |
| Week 10 | Mar 24– Mar 28 | 19th Century; 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; Dinosaur Wars<br>The Map that Changed the World readings<br>The Bone Hunters readings<br>2nd presentation and paper due |
| Week 11 | Mar 31 – Apr 4 | |
| Week 12 | Apr 7 – Apr 11 | |
| Week 13 | Apr 14 – Apr 18 | ***EXAM 3 MON Apr 14*** |
| | | 20th Century; radioactivity and the age of the Earth; Wegner and Continental Drift; Sea Floor Spreading to Plate Tectonics; Mass Extinctions |
| Week 14 | Apr 21 – Apr 25 | |
| Week 15 | Apr 28 – Apr 30 | |
| Week 16 | ***May 6 ?*** | ***Exam 4 Tues 10:15-12:15 ?***<br>3rd presentation and paper due |

## Disabilities Accommodation – ADA Statement

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 by email (mschwartze@sulross.edu), or contact Ronnie Harris, LPC, Counselor by email (ronnie.harris@sulross.edu), both can be reached at 432-837-8203. 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.

## Library

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

## Distance Education Statement

Students enrolled in distance education courses have equal access to the university's academic support services, such as library resources, online databases, and instructional technology. For mor information about accessing these resources, visit the SRSU website.

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 distance education courses MUST maintain appropriate laptops/computers and software, according to the needs and requirements of the course, as outlined on the SRSU website

## 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

* 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. Students must submit work that is their own.

Behavior that violates academic integrity (aka. academic dishonesty) includes 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;
- ☹ use of AI on any assignment for this class.

Violations of academic integrity can result in failing an assignment, failing the class, and/or more serious university consequences. These behaviors also erode the value of college degrees and higher education overall.

## Student Responsibilities Statement

All full-time and part-time students are responsible for familiarizing themselves with the **Student Handbook** and the **Undergraduate & Graduate Catalog** and for abiding by the **University rules and regulations**. Additionally, students are responsible for checking their Sul Ross email as an official form of communication from the university. Every student is expected to obey all federal, state, and local laws and is expected to familiarize him/herself with the requirements of such laws.

## Classroom Climate of Respect

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