**GEOL 1304.001**  
**Historical Geology - The Earth Through Time**  
TR: 11:00 am - 12:15 pm, Miller Science, Room 323

**Instructor:** Dr. Mike Read  
**Email:** michael.read@sfasu.edu  
**Phone:** 936-468-2095  
**Office:** Miller Science Building, Room 303  
**Office Hours:** Monday/Wednesday: 9:00 - 11:30 am  
**Department:** Earth Sciences & Geologic Resources

**Course Materials:**  
- *Historical Geology* (8th Edition), Monroe and Wicander (recommended*)

*Textbook is NOT required. However, the text is a useful learning tool as it is closely tied to the lecture material. I recommend purchasing or renting a copy if you feel that you may need “intellectual reinforcement” for the course.

**Course Description/Requirements:** The Earth Through Time – Historical Geology (GEOL 1304) - The history and development of the continents and ocean basins and the evolution of life on Earth; includes the Earth’s interior, mountain building, plate tectonics, paleoclimatology, and the history of life. This class is a 4-credit hour course and has a requisite lab where you will gain hands-on experience with fossils, sedimentary rocks and enhance your map reading skills. **Prerequisites:** GEOL 1301 or GEOL 1303.

**Program Learning Outcomes:**  
**PLO 1** - Demonstrate knowledge of the fundamental core geologic concepts (Mineralogy, Petrology, Structural Geology, Stratigraphy, Geophysics and Geochemistry). (Concepts)  
**PLO 2** - Execute geologic procedures and methods accurately, appropriately and efficiently. (Skills)  
**PLO 3** - Apply principles of logic and reasoning to develop and analyze geologic problems. (Logical - Reasoning)  
**PLO 4** - Demonstrate competence in using various geologic tools, including technology, to formulate, represent, and solve problems. (Critical thinking - Problem Solving)  
**PLO 5** - Demonstrate proficiency in communicating geologic information in an appropriate form to the expected audience. (Communication)

**Student Learning Outcomes:**  
After successful completion of this course students will be able to:  
**SLO 1** - Demonstrate an understanding of fundamental geologic concepts as it relates to Earth processes and landscape evolution through geologic time. (Critical Thinking, Empirical and Quantitative Skills)  
**SLO 2** - Use quantitative reasoning to interpret geologic data (tables, figures, graphs) from primary research, data assimilation and models to assess the differences in competing scientific theories associated with rock formation. (Critical Thinking, Empirical and Quantitative Skills)  
**SLO 3** - Demonstrate knowledge on the interdependence of science and technology and the influences geologic reasoning associated with identifiable and testable hypotheses of geologic processes. (Critical Thinking, Teamwork)
SLO 4 - Critically assess the interrelationships between geologic phenomena and communicate the resulting conclusions in visual and written formats. (Critical Thinking, Communication, Empirical and Quantitative Skills, Teamwork)
SLO 5 - Demonstrate an understanding of the skills and attitudes necessary for effective teamwork in collaborative learning activities. (Communication, Teamwork)

General Education Core Curriculum Objectives & Outcomes: The Texas Higher Education Coordinating Board has identified six core learning objectives: Critical Thinking Skills, Communication Skills, Empirical and Quantitative Skills, Teamwork, Personal Responsibility, and Social Responsibility. SFA is committed to the improvement of its general education core curriculum by regular assessment of student performance on these six objectives.

By enrolling in GEOL 1304, you are also enrolling in a Core Curriculum Course that fulfills the Life and Physical Science requirement. The list below indicates: (a) The core objectives that are required to be taught in this course per the Texas Higher Education Coordinating Board (THECB), (b) How the required core objectives will be addressed.

- **Critical Thinking Skills** - To include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.
  - Interpreting the rock and fossil record using stratigraphic principles and other geologic evidence.

- **Communication Skills** - To include effective development, interpretation and expression of ideas though written, oral, and visual communication.
  - Demonstrating effective communication and scientific writing skills in discussion dialogues with peers.

- **Empirical and Quantitative Skills** - To include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.
  - Identifying various rocks on the basis of their mineral assemblages and identifying fossil groups using their defining morphological traits.

- **Teamwork** - To include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.
  - Comparing and contrasting the timing, setting, and causes of major orogenic events with peers in order to form a more comprehensive perspective on the paleogeographic development of North America.

- **Personal Responsibility** - To include the ability to connect choices, actions and consequences to ethical decision-making.
  - Studying paleontological and palaeoclimatological analogs to determine how individual choices can affect Earth systems and how these effects influence life.

- **Social Responsibility** - To include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities.
  - Observing the long-term effects of increased atmospheric CO₂ in the rock and fossil record.

Course Requirements:
This class is a 4-credit hour course and has a weekly requisite lab where students will gain hands-on experience with earth materials, gathering and analyzing data, communicating their findings and working as a team to explain scientific processes. Expect to spend at least 6-9 hours a week on this
course reading outside content; completing classroom and laboratory activities, responding to discussion prompts, and studying for exams. **Grades from the lecture and lab will be separate.**

**Grading Breakdown & Policy:**

- **8 D2L Quizzes** – 2.5% each (= 20% of LECTURE grade; 9 quizzes will be assigned and the lowest quiz grade will be dropped)
- **4 D2L Discussions** – 5% each (= 20% of LECTURE grade; 5 discussions will be assigned and the lowest quiz grade will be dropped)
- **4 Exams (none are comprehensive)** – 15% each (= 60% of course grade)

**Exams:**

All lecture exams will include true/false and multiple-choice questions with additional sections that may vary between exams but could include any or all of the following sections: 1) fill in the blank questions; 2) matching; 3) figure illustration; 4) multi-select. Lecture exams will cover material from lecture and any activities/assigned reading material in or outside of class. The final exam will be administered on the University’s scheduled date.

- **Make-up exams will only be held on Friday of the week preceding final exams (i.e., Friday of “dead week”).**

**Quizzes:**

Quizzes/activities will occasionally be administered via D2L. Nine (9) quizzes/activities will be administered but only the highest eight (8) grades will count for each student.

- **No make-up assignments without prior notice or supporting documentation. No exceptions.**

**Online Discussion Posts:**

Throughout the course of the semester, you will be prompted to engage in five (5) discussion posts. These may include content from the lecture, required reading assignments, or outside sources (e.g., videos, podcasts).

**Attendance:**

Regular attendance will not be taken by the instructor. **HOWEVER,** attendance will be monitored via the D2L course activity log and students are expected to review course materials and news or announcements on a daily basis.

Additionally, regular attendance is strongly encouraged, as only **PARTIAL** lecture materials are provided via D2L. Complete lecture materials are only provided during the assigned face-to-face lecture time. Students who miss lecture meetings are expected to contact the instructor and provide documentation in support of the absence, at which time the instructor may provide full lecture materials to the absentee.

**Academic Integrity:** The Code of Student Conduct and Academic Integrity outlines the prohibited conduct by any student enrolled in a course at SFA. It is the responsibility of all members of all faculty, staff, and students to adhere to and uphold this policy.

Articles IV, VI, and VII of the new Code of Student Conduct and Academic Integrity outline the violations and procedures concerning academic conduct, including cheating, plagiarism, collusion, and
misrepresentation. Cheating includes, but is not limited to: (1) Copying from the test paper (or other assignment) of another student, (2) Possession and/or use during a test of materials that are not authorized by the person giving the test, (3) Using, obtaining, or attempting to obtain by any means the whole or any part of a non-administered test, test key, homework solution, or computer program, or using a test that has been administered in prior classes or semesters without permission of the Faculty member, (4) Substituting for another person, or permitting another person to substitute for one’s self, to take a test, (5) Falsifying research data, laboratory reports, and/or other records or academic work offered for credit, (6) Using any sort of unauthorized resources or technology in completion of educational activities.

Plagiarism is the appropriation of material that is attributable in whole or in part to another source or the use of one’s own previous work in another context without citing that it was used previously, without any indication of the original source, including words, ideas, illustrations, structure, computer code, and other expression or media, and presenting that material as one’s own academic work being offered for credit or in conjunction with a program course or degree requirements.

Collusion is the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any provision of the rules on academic dishonesty, including disclosing and/or distributing the contents of an exam.

Misrepresentation is providing false grades or résumés; providing false or misleading information in an effort to receive a postponement or an extension on a test, quiz, or other assignment for the purpose of obtaining an academic or financial benefit for oneself or another individual or to injure another student academically or financially.

**Withheld Grades Semester Grades Policy:**
Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average. For additional information, go to [https://www.sfasu.edu/policies/course-grades-5.5.pdf](https://www.sfasu.edu/policies/course-grades-5.5.pdf).

**Students with Disabilities:** To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to [http://www.sfasu.edu/disabilityservices/](http://www.sfasu.edu/disabilityservices/).

**Student Wellness & Well-Being:**
SFA values students’ overall well-being, mental health and the role it plays in academic and overall student success. Students may experience stressors that can impact both their academic experience and their personal well-being. These may include academic pressure and challenges associated with relationships, emotional well-being, alcohol and other drugs, identities, finances, etc.
If you are experiencing concerns, seeking help, SFA provides a variety of resources to support students’ mental health and wellness. Many of these resources are free, and all of them are confidential.

On-campus Resources:
The Dean of Students Office (Rusk Building, 3rd floor lobby)
www.sfasu.edu/deanofstudents
936.468.7249
dos@sfasu.edu

SFA Human Services Counseling Clinic Human Services, Room 202
www.sfasu.edu/humanservices/139.asp
936.468.1041

The Health and Wellness Hub “The Hub”
Location: corner of E. College and Raguet St.

To support the health and well-being of every Lumberjack, the Health and Wellness Hub offers comprehensive services that treat the whole person – mind, body and spirit. Services include:
Health Services
Counseling Services
Student Outreach and Support
Food Pantry
Wellness Coaching
Alcohol and Other Drug Education
www.sfasu.edu/thehub
936.468.4008
thehub@sfasu.edu

Crisis Resources:
Burke 24-hour crisis line: 1.800.392.8343
National Suicide Crisis Prevention: 9-8-8
Suicide Prevention Lifeline: 1.800.273.TALK (8255)
Crisis Text Line: Text HELLO to 741-741
### Course Schedule

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<th>Lecture Topic</th>
<th>Chapter in <em>Historical Geology</em> text</th>
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<td><strong>UNIT 1: THE DYNAMIC EARTH</strong></td>
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<tr>
<td>Jan. 18</td>
<td>A Brief History of... Historical Geology</td>
<td>N/A</td>
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<tr>
<td>Jan. 25</td>
<td>Earth Materials (continued)</td>
<td>Ch. 2: Minerals &amp; Rocks</td>
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<td>Jan. 30</td>
<td>Overview of Plate Tectonics</td>
<td>Ch. 3: Plate Tectonics: A Unifying Theory</td>
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<td>Feb. 1</td>
<td>How Geologic Time is Measured; Dating Methods</td>
<td>Ch. 4: Geologic Time: Concepts &amp; Principles</td>
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<tr>
<td>Feb. 6</td>
<td>The Geologic Time Scale</td>
<td>Ch. 4: Geologic Time: Concepts &amp; Principles</td>
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<td>Feb. 8</td>
<td>EXAM 1</td>
<td>Chapters 1, 2, 3, 4</td>
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<td><strong>UNIT 2: INTERPRETING THE ROCK &amp; FOSSIL RECORD</strong></td>
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<td>Feb. 13</td>
<td>Stratigraphic Relationships</td>
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<td>Feb. 15</td>
<td>Fossils &amp; Paleontology</td>
<td>Ch. 5: Rocks, Fossils, &amp; Time</td>
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<td>Feb. 20</td>
<td>Fossils &amp; Paleontology (continued)</td>
<td>Ch. 5: Rocks, Fossils, &amp; Time</td>
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<td>Feb. 22</td>
<td>Sedimentary Rock Properties; Depositional Settings</td>
<td>Ch. 6: Sedimentary Rocks</td>
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<td>Feb. 27</td>
<td>Sedimentary Rock Properties (continued)</td>
<td>Ch. 6: Sedimentary Rocks</td>
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<td>Feb. 29</td>
<td>Evolutionary Theory</td>
<td>Ch. 7: Evolution</td>
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<td>Mar. 5</td>
<td>Evolutionary Theory (continued)</td>
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<td>Mar. 7</td>
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<td><strong>NO CLASS - SPRING BREAK (March 9th - March 17th)</strong></td>
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<td><strong>UNIT 3: PRECAMBRIAN &amp; PALEOZOIC TIME</strong></td>
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<td>Mar. 19</td>
<td>Hadean &amp; Archean Eons</td>
<td>Ch. 8: Precambrian Earth &amp; Life History (I)</td>
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<td>Mar. 21</td>
<td>Proterozoic Eon</td>
<td>Ch. 9: Precambrian Earth &amp; Life History (II)</td>
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<td>Mar. 26</td>
<td>Cambrian, Ordovician, &amp; Silurian Periods/Systems</td>
<td>Ch. 10: Early Paleozoic Earth History</td>
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<td><strong>NO CLASS - EASTER BREAK (March 28th – March 31st)</strong></td>
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<td>Apr. 2</td>
<td>Devonian, Carboniferous, &amp; Permian Periods/Systems</td>
<td>Ch. 11: Late Paleozoic Earth History</td>
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<td>Apr. 4</td>
<td>Paleozoic Invertebrates &amp; Extinctions</td>
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<td>Apr. 9</td>
<td>Paleozoic Vertebrates</td>
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<td>Apr. 11</td>
<td>EXAM 3</td>
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<td><strong>UNIT 4: MESOZOIC &amp; CENOZOIC TIME</strong></td>
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<td>Apr. 16</td>
<td>Triassic, Jurassic, &amp; Cretaceous Periods/Systems</td>
<td>Ch. 14: Mesozoic Earth History</td>
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<td>Apr. 18</td>
<td>Mesozoic Invertebrates/Vertebrates &amp; Extinctions</td>
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<td>Apr. 23</td>
<td>Mesozoic Invertebrates/Vertebrates (continued)</td>
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<td>Apr. 25</td>
<td>Paleogene &amp; Neogene Periods/Systems</td>
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<td>Apr. 30</td>
<td>Quaternary Period/System</td>
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<td>Cenozoic Invertebrates/Vertebrates &amp; Extinctions</td>
<td>Ch. 18: Life of the Cenozoic Era</td>
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<td>May 7</td>
<td>EXAM 4 (10:30 am-12:30 pm)</td>
<td>Chapters 14, 15, 16, 17, 18</td>
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**Asynchronous Instructional Components***:

Feb. 13 – PBS Eons (video): *When a billion years disappeared*

Feb. 20 – Palaeocast (podcast): *Micropaleontology*

Mar. 21 – PBS Eons (video): *That time oxygen almost killed everything / PBS Eons (video): The other explosion you should know about*

Apr. 4 – Palaeocast (podcast): *When life nearly died*

Apr. 25 – PBS Eons (video): *That time the Mediterranean Sea disappeared*

May. 2 – PBS Eons (video): *When whales walked*

*The inclusion of asynchronous instructional minutes is required in order to comply with state and federal regulations on minimum contact hours in for-credit courses.*