Instructor: Dr. Mike Read  
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Phone: 936-468-2095  
Office: Miller Science Building, Room 303  
Office Hours: Tuesday: 9:00 am-11:00 am; Wednesday: 11:00 am-Noon; Thursday: 9:00 am-11:00 am  
Department: Earth Sciences & Geologic Resources

Course Materials:  
- *Essentials of Geology* (6th or 7th ed.), Stephen Marshak (recommended*)

*Textbook is NOT required for Fundamentals of Earth Science. However, this text is a very 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: Fundamentals of Earth Science (GEOL 1301) Three semester hours, two hours lecture, two hours laboratory per week. An introduction to the fundamental principles of Earth Science. Topics include the earth’s structure and surface landforms; mineral and energy resources; geologic hazards such as volcanoes, earthquakes and landslides; water resources; and the unifying theory of plate tectonics. No prerequisites

Program Learning Outcomes: There are no specific program learning outcomes for this major addressed in this course. It is a general education core curriculum course and/or a service course.

General Education Core Curriculum Objectives & Outcomes: The student is expected to develop the following core objectives established by the THECB.  
**CO 1. Critical Thinking Skills** – creative thinking, innovation, inquiry, analysis, evaluation, and synthesis of information. (SLO 1-4)  
**CO 2. Communication Skills** – effective development, interpretation, and expression of ideas through written and visual communication. (SLO 4-5)  
**CO 3. Empirical and Quantitative Skills** – manipulation and analysis of numerical data or observable facts resulting in informed conclusions. (SLO 1-2, 4)  
**CO 4. Teamwork** – the ability to consider different points of view and to work effectively with others to support a shared purpose or goal. (SLO 3-5)

Student Learning Outcomes for Lecture & Lab: 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)

Course Requirements: GEOL 1301 (Fundamentals of Earth Science) is an introduction to the study of the earth’s structure and natural processes. In this course, students will be introduced to and apply the scientific method to evaluate hypotheses regarding the earth’s structure, the distribution of natural resources, the immediate and long term impact of geologic hazards, and anthropogenic influence on the natural world.

The U.S. Department of Education Definition of the Credit Hour: A credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates not less than one hour of classroom or direct faculty instruction and a minimum of two hours out of class student work each week for approximately fifteen weeks for one semester of credit.

This class is a 3-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.

Grading Breakdown & Policy:
LECTURE (GEOL 1301) → 2/3 (66.7%) of course grade / LAB (GEOL 1001) → 1/3 (33.3%) of course grade

Lecture component:
• 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) – 60% of LECTURE grade (20% each)
• Grading scale – A: 100-90; B: 89-80; C: 79-70; D: 69-60; F: < 60

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”).
D2L Quizzes:
Quizzes/activities will occasionally be administered via D2L.
  • No make-up assignments without prior notice or supporting documentation. No exceptions.

D2L Discussion Posts:
Throughout the course of the semester, you will be prompted to engage in discussion posts. These may include content from the lecture, required reading assignments, or outside sources (e.g., videos, podcasts).
  • No make-up assignments without prior notice or supporting documentation. No exceptions.

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.

**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](http://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](http://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:

<table>
<thead>
<tr>
<th>Session</th>
<th>Lecture Topic</th>
<th>Chapter from <em>Essentials of Geology</em></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UNIT 1: THE DYNAMIC EARTH</strong></td>
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<tr>
<td>Aug. 29</td>
<td>What is Geology?</td>
<td>N/A</td>
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<tr>
<td>Aug. 31</td>
<td>Origins of the Solar System</td>
<td>Ch. 1: The Earth in Context</td>
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<tr>
<td>Sep. 5</td>
<td>The Earth Systems</td>
<td>Ch. 1: The Earth in Context</td>
</tr>
<tr>
<td>Sep. 7</td>
<td>Plate Tectonics</td>
<td>Ch. 2: The Way Earth Works: Plate Tectonics</td>
</tr>
<tr>
<td>Sep. 12</td>
<td>Plate Tectonics (continued)</td>
<td>Ch. 2: The Way Earth Works: Plate Tectonics</td>
</tr>
<tr>
<td>Sep. 19</td>
<td>EXAM 1</td>
<td>Chapters 1, 2, 3</td>
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<tr>
<td><strong>UNIT 2: THE ROCK CYCLE</strong></td>
<td></td>
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<tr>
<td>Sep. 21</td>
<td>Igneous Rocks - Processes, Properties, &amp; Classification</td>
<td>Ch. 4: Up from the Inferno: Igneous Rocks</td>
</tr>
<tr>
<td>Sep. 26</td>
<td>Igneous Rocks (continued)</td>
<td>Ch. 4: Up from the Inferno: Igneous Rocks</td>
</tr>
<tr>
<td>Sep. 28</td>
<td>Sedimentary Rocks - Processes &amp; Classification</td>
<td>Ch. 6: Pages of Earth’s Past: Sedimentary Rocks</td>
</tr>
<tr>
<td>Oct. 3</td>
<td>Sedimentary Rocks (continued)</td>
<td>Ch. 6: Pages of Earth’s Past: Sedimentary Rocks</td>
</tr>
<tr>
<td>Oct. 5</td>
<td>Metamorphic Rocks - Processes &amp; Classification</td>
<td>Ch. 7: Metamorphism: A Process of Change</td>
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<tr>
<td>Oct. 10</td>
<td>Metamorphic rocks (continued)</td>
<td>Ch. 7: Metamorphism: A Process of Change</td>
</tr>
<tr>
<td>Oct. 12</td>
<td>EXAM 2</td>
<td>Chapters 4, 6, 7</td>
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</tbody>
</table>
## UNIT 3: GEOLOGIC PROCESSES

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Chapter(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. 17</td>
<td>The Big Picture - Geologic Time</td>
<td>Ch. 10: Deep Time: How Old is Old?</td>
</tr>
<tr>
<td>Oct. 19</td>
<td>Volcanoes</td>
<td>Ch. 5: The Wrath of Vulcan: Volcanic Eruptions</td>
</tr>
<tr>
<td>Oct. 24</td>
<td>Earthquakes</td>
<td>Ch. 8: A Violent Pulse: Earthquakes</td>
</tr>
<tr>
<td>Oct. 26</td>
<td>Fluvial Systems</td>
<td>Ch. 14: Streams &amp; Floods</td>
</tr>
<tr>
<td>Oct. 31</td>
<td>Marine Systems</td>
<td>Ch. 15: Restless Realm: Oceans &amp; Coasts</td>
</tr>
<tr>
<td>Nov. 2</td>
<td>Marine Systems (continued)</td>
<td>Ch. 15: Restless Realm: Oceans &amp; Coasts</td>
</tr>
<tr>
<td>Nov. 7</td>
<td>EXAM 3</td>
<td>Chapters 5, 8, 10, 14, 15</td>
</tr>
</tbody>
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## UNIT 4: PRECIOUS RESOURCES

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Chapter(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nov. 9</td>
<td>Groundwater</td>
<td>Ch. 16: A Hidden Reserve: Groundwater</td>
</tr>
<tr>
<td>Nov. 14</td>
<td>Global Water Issues</td>
<td>N/A</td>
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<tr>
<td>Nov. 16</td>
<td>Hydrocarbon Systems</td>
<td>Ch. 12: Riches in Rock</td>
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<td></td>
<td>NO CLASS - THANKSGIVING BREAK (November 18&lt;sup&gt;th&lt;/sup&gt; - November 26&lt;sup&gt;th&lt;/sup&gt;)</td>
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<tr>
<td>Nov. 28</td>
<td>Coal &amp; Mineral Resources</td>
<td>Ch. 12: Riches in Rock</td>
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<tr>
<td>Nov. 30</td>
<td>Alternative Energy</td>
<td>N/A</td>
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<tr>
<td>Dec. 5</td>
<td>The Atmosphere System</td>
<td>N/A</td>
</tr>
<tr>
<td>Dec. 7</td>
<td>Global Change</td>
<td>Ch. 19: Global Change in the Earth System</td>
</tr>
<tr>
<td>Dec. 14</td>
<td>EXAM 4 (10:30 am-12:30 pm)</td>
<td>Chapters 12, 16, 19 + additional material</td>
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