Introductory Geology – GOL 131

College of Science & Mathematics – Course Syllabus & Policy

GOL 131.001 & GOL 131.750
Introductory Geology

MWF: 8:00–8:50 am, McKibben Education Building, Room 451

Instructor – Dr. Mike T. Read
- Email: michael.read@sfasu.edu
- Phone: (936) 468-2095
- Office: E.L. Miller Science, Room 303
- Office hours: M: 9–11:00 am; W: 9–12:00 pm; or by appointment

Please feel free to stop by my office during the provided office hours to ask questions, discuss any problems you may be having with the material, or to help facilitate further understanding. If the above hours conflict with your schedule, please call or email me to make an appointment.

Textbook & Course Materials:
- Essentials of Geology (6th Edition), Stephen Marshak (recommended*)
- 4 scantrons (Form 882)
- Fundamentals of Earth Science Laboratory Manual (available in all SFA bookstores)

*Textbook is not required for Introductory Geology. However, the 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: Introductory Geology (GOL 131) - Four semester hours, three hours lecture, two hours laboratory per week. Designed for the student with no geology background. Introduction to the study of minerals, rocks, and the processes that modify and shape the surface features of the Earth. Focus on energy, mineral and water resources; volcanism; and other practical aspects of geology. Required lab fee. No prerequisites.

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)

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 GOL 131, Intro
Geology, you are also enrolling in a Core Curriculum Course that seeks to develop the following core objectives established by the THECB:

- **Critical Thinking Skills** – creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.
- **Communication Skills** – effective development, interpretation and expression of ideas through written, oral and visual communication.
- **Empirical & Quantitative Skills** – manipulation and analysis of numerical data or observable facts in informed conclusions.
- **Teamwork** – the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.

**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)

**Course Requirements:**
GOL 131 is an introduction to the fascinating and complex processes of planet Earth – an ever-changing dynamic environment. Billions of years of processes, both tranquil and violent, have sculpted the surface of the earth and helped create the landforms we see today and the study of geology is the key to understanding these processes. Current technology gives us keys to understanding the development of continents, ocean basins, mountain chains, volcanoes, earthquakes and many other cataclysmic events. Geology is also the study of the earth’s resources; how they form, where to find them, ways we extract them and how we plan to protect and preserve them for future generations. This class is a 4-credit hour course and has a weekly requisite lab where you will gain hands-on experience with minerals, rocks, and topographic maps. *Grades from the lecture and lab will be separate.*

**Grading Breakdown & Policy:**
- Attendance/participation – 2.5% of course grade
- Quizzes/activities – 12.5% of course grade (lowest quiz grade is dropped)
- Exams 1, 2, 3, & Final (not comprehensive) – 85% of course grade (21.25% 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) Short answer questions
3) Figure illustration/matching
4) Short essay questions

Lecture exams will cover material from lecture and any activities/assigned reading material in or outside of class. You will need a Scantron (Form 882) and a no. 2 pencil for the exams. When answering essay questions, I expect you to use complete sentences, proper grammar, and correct spelling. The final exam will be given at the University’s scheduled time.

Cell phones, calculators, and other electronic devices are NOT permitted during exams. If you are using them in an exam, it will be assumed that you are cheating and you will receive a grade of ZERO on the exam.

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

Quizzes:
Quizzes/activities will occasionally be administered either in-class or via D2L. Quizzes/activities will cover material discussed in the lecture that day. Eight (8) quizzes/activities will be administered but only the highest seven (7) grades will count for each student. No make-up assignments without prior notice or supporting documentation, no exceptions.

Attendance Policy:
- Be prepared for lectures by reading the material to be covered prior to attending class. Questions are encouraged and welcome – do not hesitate to ask.
- No electronic devices are needed during lectures for this class, including cell phones and calculators. Please turn them off and do not use them in class. Ringing phones and beeping electronics disturb others in the class and interrupt lectures. If you interrupt class with your personal electronic devices, you will be asked to leave for the day. You are here to learn, not correspond with your friends.
- If you are late to class, please seat yourself quietly. Try not to be late because it interrupts others in the class. If you need to use the restroom or become ill, please excuse yourself from the lecture quietly.
- If you need to study for another class, do it elsewhere. The classroom is not the place to sleep either. Basically, refrain from activities in lectures that will distract or disturb the other students in the room, because you are all paying for the class and most people want to get what they are paying for.
**Academic Integrity (A-9.1):** Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

**Definition of Academic Dishonesty:** Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one’s own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one’s paper without giving the author due credit. Please read the complete policy at http://www.sfasu.edu/policies/academic_integrity.asp

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.

The circumstances precipitating the request must have occurred after the last day in which a student could withdraw from a course. Students requesting a WH must be passing the course with a minimum projected grade of C.

**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/.

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**Tentative Course Schedule:**

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<tr>
<th>Session</th>
<th>Lecture Topic</th>
<th>Reading Assignment</th>
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<tbody>
<tr>
<td>Jan. 15</td>
<td>Course info; What is Geology?</td>
<td>N/A</td>
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<tr>
<td>Jan. 17</td>
<td>Origins of the Solar System</td>
<td>Ch. 1: The Earth in Context</td>
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<td>Jan. 20</td>
<td><strong>HOLIDAY – MLK DAY</strong></td>
<td><strong>No Class – University Holiday</strong></td>
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<tr>
<td>Jan. 22</td>
<td>The Earth Systems, pt. 1</td>
<td>Ch. 1: The Earth in Context</td>
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<tr>
<td>Jan. 24</td>
<td>The Earth Systems, pt. 2</td>
<td>Ch. 1: The Earth in Context</td>
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<tr>
<td>Jan. 27</td>
<td>Plate Tectonics, pt. 1</td>
<td>Ch. 2: The Way Earth Works: Plate Tectonics</td>
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<tr>
<td>Jan. 29</td>
<td>Plate Tectonics, pt. 2</td>
<td>Ch. 2: The Way Earth Works: Plate Tectonics</td>
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Jan. 31  Minerals, pt. 1  Ch. 3: Patterns in Nature: Minerals
Feb. 3  Minerals, pt. 2  Ch. 3: Patterns in Nature: Minerals
Feb. 5  EXAM 1  Chapters 1, 2, 3
  Feb. 7  Igneous Rocks, pt. 1  Ch. 4: Up from the Inferno: Igneous Rocks
  Feb. 10  Igneous Rocks, pt. 2  Ch. 4: Up from the Inferno: Igneous Rocks
  Feb. 12  Sedimentary Rocks, pt. 1  Ch. 6: Pages of Earth’s Past: Sedimentary Rocks
  Feb. 14  Sedimentary Rocks, pt. 2  Ch. 6: Pages of Earth’s Past: Sedimentary Rocks
  Feb. 17  Metamorphic Rocks, pt. 1  Ch. 7: Metamorphism: A Process of Change
  Feb. 19  Metamorphic Rocks, pt. 2  Ch. 7: Metamorphism: A Process of Change
  Feb. 21  The Big Picture - Geologic Time, pt. 1  Ch. 10: Deep Time: How Old is Old?
  Feb. 24  The Big Picture - Geologic Time, pt. 2  Ch. 10: Deep Time: How Old is Old?
  Feb. 26  Geologic Time Activity  
  Feb. 28  Biography of Earth, pt. 1  Ch. 11: A Biography of the Earth
Mar. 2  Biography of Earth, pt. 2  Ch. 11: A Biography of the Earth
Mar. 4  EXAM 2  Chapters 4, 6, 7, 10, 11
  Mar. 6  Volcanoes  Ch. 5: The Wrath of Vulcan: Volcanic Eruptions
Mar. 16  Earthquakes, pt. 1  Ch. 8: A Violent Pulse: Earthquakes
Mar. 18  Earthquakes, pt. 2  Ch. 8: A Violent Pulse: Earthquakes
Mar. 20  Mass Wasting  Ch. 13: Unsafe Ground
Mar. 23  Structural Geology & Orogenesis, pt. 1  Ch. 9: Crags, Cracks, & Crumples
Mar. 25  Structural Geology & Orogenesis, pt. 2  Ch. 9: Crags, Cracks, & Crumples
Mar. 27  Fluvial Systems, pt. 1  Ch. 14: The Geology of Running Water
Mar. 30  Fluvial Systems, pt. 2  Ch. 14: The Geology of Running Water
Apr. 1  Marine Systems, pt. 1  Ch. 15: Restless Realm: Oceans & Coasts
Apr. 3  Marine Systems Activity  
Apr. 6  Marine Systems, pt. 2  Ch. 15: Restless Realm: Oceans & Coasts
Apr. 8  EXAM 3  Chapters 5, 8, 9, 13, 14, 15
  Apr. 10  GOOD FRIDAY  No Class – University Holiday
  Apr. 13  Glacial Systems  Ch. 18: Amazing Ice
  Apr. 15  Groundwater, pt. 1  Ch. 16: A Hidden Reserve: Groundwater
  Apr. 17  Groundwater, pt. 2  Ch. 16: A Hidden Reserve: Groundwater
  Apr. 20  Hydrocarbon Systems  Ch. 12: Riches in Rock
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<tr>
<th>Date</th>
<th>Topic</th>
<th>Reading Material</th>
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<tr>
<td>Apr. 22</td>
<td>Coal &amp; Mineral Resources</td>
<td>Ch. 12: Riches in Rock</td>
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<tr>
<td>Apr. 24</td>
<td>Alternative Energy Sources</td>
<td>N/A</td>
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<td>Apr. 27</td>
<td>Global Change, pt. 1</td>
<td>Ch. 19: Global Change in the Earth System</td>
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<tr>
<td>Apr. 29</td>
<td>Global Change, pt. 2</td>
<td>Ch. 19: Global Change in the Earth System</td>
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<td>May 1</td>
<td>Anthropocene - Class Discussion</td>
<td>N/A</td>
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<td>May 4</td>
<td>FINAL EXAM</td>
<td>Chapters 12, 16, 18, 19, &amp; other sources</td>
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