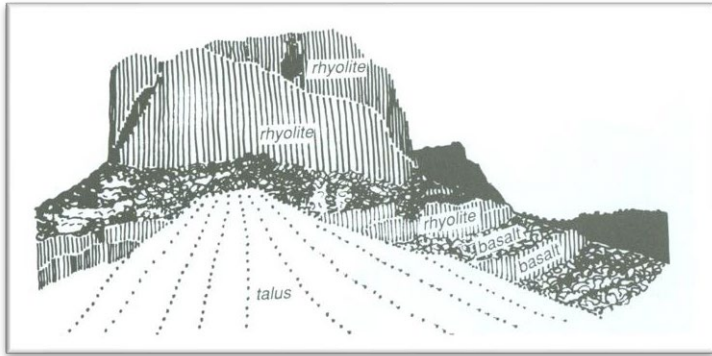


## R – 1:00 GEOL 1103: PHYSICAL GEOLOGY LABORATORY, FALL 2021



Geology of Casa Grande Peak in Big Bend National Park. We will hike nearby on our November field trip! Figure from Spearing (1991)

### Course Description

Laboratory activities designed to accompany Geology 1303. The laboratory includes experiments over topics such as Earth materials, structure, landforms, mineral resources, and plate tectonics.

### Course Delivery Style: On-campus lab class

*Physical Geology Lab will be taught face-to-face in the GEO Lab, VIN 139.*

### Professor: Mr. Stephen Shields

Office: VIN 135

Office phone: 325-486-6934

Physics and Geosciences Department Office: 325-942-2242

E-mail: [stephen.shields@angelo.edu](mailto:stephen.shields@angelo.edu)

### On-campus, Face-to-face Office hours (meet in my office, VIN 122)

Monday/Wednesday 3 – 4pm; Tuesday 9 – 10:30am and 2 – 4pm; and Thursday 9 – 10:30am, and by appointment

### Required Textbook

1. *GEOL 1403, Physical Geology Laboratory Manual*, by Heather L. Lehto

### Grading

- 8 Lab Assignments (56%; 7% each)
- 8 Pre-Lab Quizzes (8%, 1% each; Completed using Blackboard)
- 2 Lab Quizzes (36%, 18% each)
- Optional field trip project (replaces lowest lab assignment grade)

### Course Webpages

The [Angelo State Blackboard site](#)<sup>1</sup> for this course contains Pre-Lab Quizzes, answers to lab assignments, web links to scenic areas mentioned in class, and your official grades.

**Schedule: R – 1:00 Lab**

Date	Lab Exercises	Lab Manual pages to read before taking Pre-lab Quiz	Last time to take Pre-Lab Quiz
I: 8/26	1: What Is a Geologist?	--	No quiz
II: 9/2	2: Rock-forming minerals	p. 18 – 29	9/1, 11:59 pm
III: 9/9	No lab this week! (Labor Day Holiday Monday) Lab will be open and Dr. Joe will be on campus.		9/8, 11:59 pm
IV: 9/16	3: Igneous Rocks	p. 34 – 37	9/15, 11:59 pm
V: 9/23	No Lab Meeting West Texas Geological Society Meeting, Midland	-	-
VI: 9/30	4: Sedimentary Rocks	p. 42 - 48	9/29, 11:59 pm
VII: 10/7	5: Metamorphic Rocks Details for Lab Quiz 1 announced Review and practice for lab quiz	p. 54 – 57	10/6, 11:59 pm
VIII: 10/14	LAB QUIZ 1: MINERALS AND ROCKS (Labs 2-5)	-	-
IX: 10/21	6: San Angelo State Park Field Trip (Required) Meet at State Park South Entrance. Directions in Lab Manual	Directions: p. 62 – 63	10/21, 11:59 pm
X: 10/28	7: Block diagrams of folded and faulted rocks	p. 68 – 74	10/27, 11:59 pm
XI: 11/4	8: Constructing a geologic cross section, Part I	p. 90 – 92	11/3, 11:59 pm
XII: 11/11	8: Constructing a geologic cross section Part II	-	-
XIII: 11/18	Review and Practice for Lab Quiz 2	-	-
XIV: 11/25	No Labs this week! (Thanksgiving Holidays Weds-Fri)	-	-
XV: 12/2	LAB QUIZ 2: TOPOGRAPHIC AND GEOLOGIC MAPS (Labs 1, 6-8)	-	-

**Course Expectations**

- 1) You are expected to attend every lab meeting. Your attendance will be recorded. If you must miss a lab, you may attend another lab section on Monday, Tuesday, or Wednesday at 1:00. Contact the lab instructor to ask permission first. Contact me if you miss a lab and cannot attend another lab section. I can help!
- 2) You will take the next big step: let's talk outside of class about almost anything. Topics I like to discuss: geology, hiking and backpacking trails, productive ways of learning geology, running, the marvel universe, future careers, music, climate change, and more!

- 3) You will not distract yourself or others with electronic devices in lecture or lab. *You will put your phone away during class and lab.* During lab, you will step outside the room if you must text or take a call. Penalties: a) Friendly warning for forgetting the first two times, b) After the third time, you will be asked to leave the lab or class.
- 4) Lab projects submitted after the due date, the day of our next lab, will receive a 10-point deduction. Work cannot be turned in after the lab or assignment is returned to others (professional ethics issues). Exceptions will be made for serious illnesses, injuries, or family emergencies that require missing many classes.

### Geoscience Careers

See Geoscience BS requirements in the [Angelo State Catalog](#)<sup>2</sup>. A Geoscience Minor requires 18 hours of geology courses. Physical Geology is a requirement for a major or a minor. Rewarding careers exist for geologists, geophysicists, hydrogeologists, and secondary science teachers. Talk to your professors!

The [US Department of Labor Occupational Handbook](#)<sup>3</sup> contains information on geology careers, salaries, education needed, and future job outlook in geology.

GEO, the student organization for all interested in geology, meets Wednesdays at 6:00 pm. The first meeting will be September 4. GEO is a Student Chapter of the [American Association of Petroleum Geologists](#)<sup>4</sup>.

### Field Trips!

On field trips you will get a chance to apply concepts discussed in class to describe and interpret outcrops of rocks and sediments. On the optional weekend trips we will travel in university vehicles. No special equipment is required but space is limited! You may go on more than one optional trip, but you can only use one field trip project to replace a single lab assignment grade. The tentative schedule:

1. *Archaeology Fair and Elementary School Science Nights*: Saturday in September at Fort Concho (Archaeology Fair) and evenings to be announced (Science Nights). Opportunities for sharing basics of rocks, fossils, and maps with students, their parents, and interested people of all ages.
2. *Kickapoo Cavern*: Saturday, October 26. This field trip will head to the Kickapoo Cavern to explore a wild cave. There are no trails in the cave, so you must be sure-footed. We will be led by a cave guide and shown the wonders of a dead cave of historical significance. Leaders:
3. *Big Bend National Park*: Friday-Sunday, November 19 – 21. Physical Geology field trip to Big Bend National Park: hike and sketch Cretaceous stratigraphy in Santa Elena Canyon, describe Tertiary volcanic rocks in Tuff Canyon, hike to the top of the Lost Mine Trail in the Chisos Mountains. Leaders: Joe Satterfield,
4. *Favorite San Angelo Area Outcrops*: Saturday, December 4. We will meet early in the morning and return in the mid-afternoon. We will visit little-known outcrops just north of San Angelo, including Rattlesnake Hill, Edith Spring, Spence Reservoir, and the Divide Roadcut. Leaders: Joe Satterfield,
- 5.

### Core Curriculum Objectives and related ASU Student Learning Outcomes

Student Learning Outcome	Assessment Method
1. Gather, analyze, evaluate, and synthesize information relevant to a question or issue.	Lab Quiz
2. Develop, interpret, and express ideas through effective visual communication.	Lab Assignment
3. Manipulate and analyze numerical data and arrive at an informed conclusion	Homework/In-class Assignment
4. Manipulate and analyze observable facts and arrive at an informed conclusion	Average Lab Grade
5. Work effectively with others to support and accomplish a shared goal.	IDEA Forms

## **Student learning outcomes**

You will learn about rocks and minerals that make up Earth and the sometimes subtle and often destructive processes that shape it. You will learn and test fundamental concepts about meteorite impacts, volcanoes, earthquakes, river flooding, oil and gas resources, groundwater, and plate tectonics. Many examples will be from West Texas and western North America. Problem-solving techniques that you will learn and practice:

- Use multiple working hypotheses
- Be skeptical: look for ways to test hypotheses
- Make sketches: they help in visualizing the world in three dimensions
- Quantify events and processes when possible
- Apply the Principle of Uniformitarianism
- Study and work together
- Get as much practice or experience as you can
- Carefully defend your thinking when answering questions.
- Learning outcomes will be evaluated by exams and homework assignments

## **Academic Integrity**

Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU. The College of Science and Engineering adheres to the university's [Statement of Academic Integrity](#)<sup>5</sup>. Policy for this course: first offense- zero on lab project or Lab Quiz, second offense- F in course

## **Plagiarism**

Plagiarism is a serious topic covered in ASU's Academic Integrity policy in the Student Handbook. Plagiarism is the action or practice of taking someone else's work, idea, etc., and passing it off as one's own. Plagiarism is literary theft.

In your discussions and/or your papers, it is unacceptable to copy word-for-word without quotation marks and the source of the quotation. It is expected that you will summarize or paraphrase ideas giving appropriate credit to the source both in the body of your paper and the reference list.

Papers are subject to be evaluated for originality via Turnitin. Resources to help you understand this policy better are available at the [ASU Writing Center](#)<sup>6</sup>

## **Accommodations for Students with Disabilities**

ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA) and subsequent legislation.

Student Disability Services is located in the Office of Student Affairs, and is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability. It is the student's responsibility to initiate such a request by contacting an employee of the Office of Student Affairs, in the Houston Harte University Center, Room 112, or contacting the department via email at [ADA@angelo.edu](mailto:ADA@angelo.edu). For more information about the application process and requirements, visit the [Student Disability Services website](#).<sup>7</sup> The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

Dr. Dallas Swafford  
Director of Student Disability Services, Office of Student Affairs  
325-942-2047  
[dallas.swafford@angelo.edu](mailto:dallas.swafford@angelo.edu)  
Houston Harte University Center, Room 112

### **Student Absence for Observance of Religious Holy Days**

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. See [ASU Operating Policy 10.19 Student Absence for Observance of Religious Holy Day](#)<sup>8</sup> for more information.

### **Title IX at Angelo State University**

Angelo State University is committed to providing and strengthening an educational, working, and living environment where students, faculty, staff, and visitors are free from sex discrimination of any kind. In accordance with Title VII, Title IX, the Violence Against Women Act (VAWA), the Campus Sexual Violence Elimination Act (SaVE), and other federal and state laws, the University prohibits discrimination based on sex, which includes pregnancy, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination and unwelcome behavior of a sexual nature. The term includes sexual harassment, nonconsensual sexual contact, nonconsensual sexual intercourse, sexual assault, sexual exploitation, stalking, public indecency, interpersonal violence (domestic violence or dating violence), sexual violence, and any other misconduct based on sex.

You are encouraged to report any incidents involving sexual misconduct to the Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator, Michelle Miller, J.D. You may submit reports in the following manner:

Online: [Incident Reporting Form](#)<sup>9</sup>  
Face to Face: Mayer Administration Building, Room 210  
Phone: 325-942-2022  
Email: [michelle.miller@angelo.edu](mailto:michelle.miller@angelo.edu)

Note, as a faculty member at Angelo State, I am a mandatory reporter and must report incidents involving sexual misconduct to the Title IX Coordinator. Should you wish to speak to someone in confidence about an issue, you may contact the University Counseling Center (325-942-2371), the 24-Hour Crisis Helpline (325-486-6345), or the University Health Clinic (325-942-2171).

For more information about resources related to sexual misconduct, Title IX, or Angelo State's policy please visit the [Title IX website](#).<sup>10</sup>

### **Incomplete Grade Policy**

It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required. See [ASU Operating Policy 10.11 Grading Procedures](#)<sup>11</sup> for more information.

### **Copyright Policy**

Students officially enrolled in this course should make only one printed copy of the given articles and/or chapters. You are expressly prohibited from distributing or reproducing any portion of course readings in printed or electronic form without written permission from the copyright holders or publishers.

## General Policies Related to This Course

All students are required to follow the policies and procedures presented in these documents:

- [Angelo State University Student Handbook](#)<sup>12</sup>
- [Angelo State University Catalog](#)<sup>13</sup>

## Information About COVID-19

Please refer to ASU's [COVID-19 \(Coronavirus\) Updates](#)<sup>14</sup> web page for current information about campus guidelines and safety standards as they relate to the COVID-19 pandemic.

## Modifications to the Syllabus

This syllabus, including grade evaluation and course schedule, is subject to modification on potentially short notice based on developing circumstances.

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<sup>1</sup> <https://blackboard.angelo.edu>

<sup>2</sup> <https://www.angelo.edu/catalogs/>

<sup>3</sup> <https://www.bls.gov/ooh/life-physical-and-social-science/print/geoscientists.htm>

<sup>4</sup> <https://www.aapg.org/students>

<sup>5</sup> <https://www.angelo.edu/student-handbook/community-policies/academic-integrity.php>

<sup>6</sup> [https://www.angelo.edu/dept/writing\\_center/academic\\_honesty.php](https://www.angelo.edu/dept/writing_center/academic_honesty.php)

<sup>7</sup> <https://www.angelo.edu/services/disability-services/>

<sup>8</sup> <https://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of>

<sup>9</sup> <https://www.angelo.edu/incident-form>

<sup>10</sup> <https://www.angelo.edu/title-ix>

<sup>11</sup> <https://www.angelo.edu/content/files/14197-op-1011-grading-procedures>

<sup>12</sup> <https://www.angelo.edu/student-handbook/>

<sup>13</sup> <https://www.angelo.edu/catalogs/>

<sup>14</sup> <https://www.angelo.edu/covid-19/>