

GEOL 4304 Introduction to Volcanology (3 credits)

Fall 2019

Section 010 MWF 11-11:50am

ROOM: VIN 146

Instructor: Dr. Heather L. Lehto

Email: Heather.Lehto@angelo.edu

Office hours: VIN 127, M 3-4pm, T 11am-12pm, F 10-11am, VIN 127

REQUIRED TEXTBOOKS

- *Volcanoes, Global Perspectives, Lockwood and Hazlett*

COURSE OBJECTIVES

At the end of this course, you should be able to:

- Describe where volcanoes form in relation to plate boundaries and what those volcanoes might look and how they might behave.
- Describe the formation of magma, including the composition, viscosity, and style of eruption.
- Describe magma rheology and how it relates to viscosity, including how magma can change rheology. Describe what triggers a volcanic eruption.
- Identify the different volcano types and describe how each formed.
- Describe and identify lava flow features and structures and explain how they were formed.
- Describe the process that leads to explosive eruptions and the products of those eruptions.
- Describe and identify the different styles of eruption. Describe how the VEI index works. Discuss the good and bad aspects of eruption classification schemes.
- Evaluate an area for volcanic hazards.
- Interpret volcanic monitoring data and use it to forecast an impending eruption.

Assessment of the above listed objectives will be accomplished through assignments, midterm, final exam, and final project.

WORKLOAD

This is senior level course which means you will be given more complicated material and activities and you will be expected to prepare for EACH class!! It is generally agreed upon that students spend one to two hours studying and preparing for each one hour spent in class. As this is a 3 hour course, that means you should be spending 3-6 hours per week studying for this course.

We will NOT be covering every bit of material from each Chapter in class, however it MAY show up on your Exam. This means you are responsible for reading each chapter and studying the material on your own in order to earn an average or better grade. Do NOT underestimate the workload for this course. Stay on top of your reading, ask questions, and participate in class and it will give you the best chance of passing this course.

ATTENDANCE

Attendance is highly recommended as we will be covering a large amount of material in lecture as well as frequent in-class activities, which will be part of your grade. The field trip is optional, but highly recommended.

MY EXPECTATIONS FOR YOU

- Be prepared for lecture (do the reading prior to class, print off any relevant materials)
- Actively participate in lecture
- Take responsibility for your own learning (seek help if you are having a hard time)
- Be familiar with the course policies in the syllabus
- Do NOT use cellphones in class (they must be turned OFF, NOT silent when you are in class)
- Be respectful of all persons in this classroom (arriving late, leaving early, or talking during class is distracting and discourteous)

WHAT YOU CAN EXPECT FROM ME

- Be enthusiastic and knowledgeable about the course material
- Present course material in an organized way
- Start and end lectures on time
- Set high standards for the class and help you meet those standards
- Treat you with fairness and respect

COURSE WEBPAGE

[Blackboard](#)ⁱ contains class outlines, web links to scenic areas mentioned in class, practice problems, answers to lab assignments, and your official grades.

CELL PHONES AND OTHER ELECTRONIC DEVICES

Cell phones must be turned off while in class. In addition, it is unacceptable to engage in text messaging during the class meeting time. If you are using any electronic devices other than a calculator (not your phone in calculator mode), a voice recorder, or a laptop computer to take notes, you may be asked by the instructor to leave the classroom for the remainder of the class period. The use of any electronic device not authorized by the instructor during a test may result in the forfeiture of your grade for that test. All electronic devices should be turned off and stored out of sight during tests.

GRADING

Number of Items	Name of item	Percent of grade per item	Total percent of grade
10	Assignments	4% each	40%
4	Exams	5% each	20%
1	Volcano Project	25%	20%
1	Final Exam	20%	20%

GRADING SYSTEM

100-90%	A
89-80%	B
79-70%	C
69-60%	D
59-0%	F

FIELD TRIP

There will be an optional 3-4 day field trip to a volcanic location to be determined. The field trip will replace one of your test grades. There will be more information on this soon.

LIFE HAPPENS CLAUSE

Life happens to all of us. Despite our best efforts, some days nothing seems to go right. Your car breaks down on the way to school, you run out of the house without something and have to go back despite the fact that you were already running late, your boss calls you into work, or your child is sick and you have to go pick them up from daycare/school. Or, you get so overwhelmed that everything seems too much to deal with.

If this happens to you, please email me. We will figure out what to do to keep you on track in the course. Whether that means extra tutoring sessions, deadline extensions, or something else. Please don't suffer in silence. I want to help out, you just need to let me know what is going on.

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](#)ⁱⁱ
- [Angelo State University Catalog](#)ⁱⁱⁱ

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](#).^{iv}

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. For more information about the application process and requirements, visit the [Student Disability Services website](#).^v The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

Dallas Swafford
Director of Student Disability Services
Office of Student Affairs
325-942-2047
dallas.swafford@angelo.edu
Houston Harte University Center, Room 112

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](#)^{vi} for more information.

PLAGIARISM

Plagiarism is a serious topic covered in ASU's [Academic Integrity policy](#)^{vii} 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. Resources to help you understand this policy better are available at the [ASU Writing Center](#).^{viii}

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](#)^{ix} 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](#)^x

Face to Face: Mayer Administration Building, Room 210

Phone: 325-942-2022

Email: 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](#).^{xi}

INFORMATION ABOUT COVID-19

Please refer to ASU's [COVID-19 \(Coronavirus\) Updates](#)^{xii} 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. The faculty member reserves the option to make changes as necessary to this syllabus and the course content. If changes become necessary during this course, the faculty will notify students of such changes by email, course announcements and/or via a discussion board announcement. It is the student's responsibility to look for such communications about the course on a daily basis.

COURSE EVALUATION:

Students are provided the opportunity and are strongly encouraged to participate in a course evaluation at the end of the semester.

FINAL NOTE:

This course will require a lot of work, however if you work diligently on studying and preparing for class there is no reason why you would not do well. My goal is to teach you SOME of the real-world information and skills you will need to use as a geophysicist in the field. There is a lot more information out there and I encourage you to seek it out if you are interested in this field.

SCHEDULE: All information is subject to change.

Week of	Topics	Reading	Assignment
August 23	Syllabus, Plate Tectonics	Chapters 1 & 2	Volcanoes and Plate Tectonics
August 30	Volcanic Rocks	Materials provided	Volcanic Rock ID
September 6 Holiday, Sept 6	Magma Formation	Chapter 3	Magma Formation
September 13	Physical Properties of Magma	Chapter 4	Eruption Style and Viscosity
September 20	Exam 1: Chapters 1-4, Effusive Eruptions	Chapter 6	Effusive Eruptions Paper Discussion – in class
September 27	Explosive Eruptions	Chapter 7 & 8	Isopach Maps
October 4	Exam 2: Chapters 6-8, Volcano Types	Chapter 9 & 10	Volcano Tour
October 11	GSA/Field Trip		
October 18	Classification Schemes	Chapter 5	Classifying Eruptions Paper Discussion – in class
October 25	Exam 3: Chapters 5, 9, & 10, Volcanic Hazards and Risk	Chapter 11 & 14	Volcanic Hazard Map
November 1	Volcanic Hazards and Risk (con't)		
November 8	Volcano Monitoring	Materials Provided	Volcano Monitoring
November 15	Volcano Project Presentations, Exam 4: Chapters 11, 14, & Volcano Monitoring		
November 22 Holiday, Nov 24-26	TBD, No class W or F		
November 29	<i>Eruption! Activity</i>		
December 6	Final Exam: W December 8, 10:30am-12:30pm		

ⁱ <https://angelo.blackboard.edu/>

ⁱⁱ <https://www.angelo.edu/current-students/student-handbook/>

ⁱⁱⁱ <https://www.angelo.edu/academics/catalog/>

^{iv} <https://www.angelo.edu/live/files/27603-student-handbook-2020-21#page=96>

^v <https://www.angelo.edu/current-students/disability-services/>

^{vi} <https://www.angelo.edu/content/files/14197-op-1011-grading-procedures>

^{vii} <https://www.angelo.edu/live/files/27603-student-handbook-2020-21#page=96>

^{viii} https://www.angelo.edu/current-students/writing-center/academic_honesty.php

^{ix} <https://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of>

^x <https://www.angelo.edu/incident-form>

^{xi} <https://www.angelo.edu/title-ix>

^{xii} <https://www.angelo.edu/covid-19/>