Course Information

Course Description
Classification, description, and interpretation of igneous and metamorphic rocks, including identifying common minerals. Interpretations include tectonic setting, processes of formation, and pressure-temperature conditions. Laboratory work consists of hand sample description, examination of thin sections under a petrographic microscope, and field trips. Prerequisite: GEOL 1303 or 1304.

Student Learning Objectives
Learning objectives will be evaluated by exams, lab projects, lab quizzes, and homework assignments.

1. To study in more detail topics introduced in Physical and Historical Geology, such as rock types erupted from volcanoes (for example Davis Mountains trachytes, Big Bend pyroclastic flow deposits) and the pressure-temperature conditions at which different facies of metamorphic rocks form.

2. To get hands-on experience in describing and interpreting rocks so that you will have a solid background you could use when taking summer field camp, a 5-week field course (GEOL 3600), when working on your own research project (GEOL 4391), and when taking geology courses in graduate school. The ultimate goal is that you have a good working knowledge of how to describe and interpret
whatever igneous and metamorphic rocks you encounter anywhere in the world. We will emphasize what you can do with outcrops and hand samples and thin sections in the field/lab.

3. To practice using the basic terms of igneous and metamorphic rocks so that you can compete and work with Geology Majors at other schools at field camp or in graduate school.

4. To learn how to use geology tools in the field and the lab (hand lenses, hardness kits, maps, aerial photos, and polarizing microscopes).

Required Texts and Materials

Communication
Written communication via email: All private communication will be done exclusively through your ASU email address. Check frequently for announcements and policy changes. In your emails, include the course name and section number in your subject line. I will respond to email and/or telephone messages within 24 hours during working hours Monday through Friday. Weekend messages may not be returned until Monday.

Technology
You will be required to have a laptop with internet access for this course. Please bring your laptop to class on days noted in the course schedule. If you do not have a laptop due to hardship, please let me know. You may also be required to turn in assignments on Blackboard and/or Gradescope using a scanner or camera.

Grading
Evaluation and Grades
Course grades will be determined as indicated in the table below.

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Percent of Total Grade</th>
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</thead>
<tbody>
<tr>
<td>Daily Assignments (quizzes &amp; journals)</td>
<td>15</td>
</tr>
<tr>
<td>Lab Assignments (9)</td>
<td>40</td>
</tr>
<tr>
<td>Lecture Exams (2)</td>
<td>15</td>
</tr>
<tr>
<td>Journal Article Summary and Discussion</td>
<td>5</td>
</tr>
<tr>
<td>Lab Final</td>
<td>10</td>
</tr>
<tr>
<td>Final Exam</td>
<td>15</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>
Grading System
Course grades will be dependent upon completing course requirements and meeting the student learning outcomes. The following grading scale is in use for this course:

- **A** = 90.00-100%
- **B** = 80.00-89.99%
- **C** = 70.00-79.99%
- **D** = 60.00-69.99%
- **F** = 0-59.99%

Attendance and Assignment Policy
In-class attendance is not required. However, you are expected to read and complete each assignment posted in Blackboard (if you come to class or not). Although showing up for class (either in person or online) is not directly part of your grade (see Grading section above), you will find it extremely difficult to pass this class if you do not attend regularly and participate! Lab attendance is required. Missed assignments, quizzes, projects, and other assignments cannot be made up. Drop date for the Fall 2020 semester is November 10. NOTE: You are NOT automatically dropped if you stop completing assignments or stop coming to class.

Topic Folders
Within topic folder, there will be quizzes, journals, or different types of assignments that will check your understanding on certain topics. These are not listed in the syllabus schedule, but all are posted within the topic folders that are posted each week. The due dates will be listed on Blackboard.

General Policies Related to This Course
All students are required to follow the policies and procedures presented in these documents:

- Angelo State University Student Handbook¹
- Angelo State University Catalog²

Food and Drink Policy
No food or drinks (other than water or close-lid drinks) are allowed in the classroom.

Required Use of Masks/Face Coverings
As a member of the Texas Tech University System, Angelo State University has adopted the mandatory Facial Covering Policy³ to ensure a safe and healthy classroom.

¹ [https://www.angelo.edu/student-handbook/](https://www.angelo.edu/student-handbook/)
² [https://www.angelo.edu/catalogs/](https://www.angelo.edu/catalogs/)
experience. Current research on the COVID-19 virus suggests there is a significant reduction in the potential for transmission of the virus from person to person by wearing a mask/facial covering that covers the nose and mouth areas. Therefore, in compliance with the university policy students in this class are required to wear a mask/facial covering before, during, and after class. Faculty members may also ask you to display your daily screening badge as a prerequisite to enter the classroom. You are also asked to maintain safe distancing practices to the best of your ability. For the safety of everyone, any student not appropriately wearing a mask/facial covering will be asked to leave the classroom immediately. The student will be responsible to make up any missed class content or work. Continued non-compliance with the Texas Tech University System Policy may result in disciplinary action through the Office of Student Conduct.

**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](https://www.angelo.edu/student-handbook/community-policies/academic-integrity.php).

**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](https://www.angelo.edu/services/disability-services/). The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

Dallas Swafford

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5 [https://www.angelo.edu/services/disability-services/](https://www.angelo.edu/services/disability-services/)
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 for more information.

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. I encourage you to work together on homework assignments and to study together for exams. However, anything you turn in must be in your own words.

Papers are subject to be evaluated for originality. Resources to help you understand this policy better are available at the ASU Writing Center.

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 for more information.

Title IX at Angelo State University
The University prohibits discrimination based on sex, which includes pregnancy, sexual orientation, gender identity, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination including: sexual assault, sex-based discrimination, sexual exploitation, sexual harassment, public indecency, interpersonal violence (domestic violence and/or dating

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6 https://www.angelo.edu/content/files/14197-op-1011-grading-procedures
7 https://www.angelo.edu/student-handbook/community-policies/academic-integrity.php
8 https://www.angelo.edu/dept/writing_center/academic_honesty.php
9 https://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of
violence), and stalking. As a faculty member, I am a Responsible Employee meaning that I am obligated by law and ASU policy to report any allegations I am notified of to the Office of Title IX Compliance.

Students are encouraged to report any incidents of sexual misconduct directly to ASU’s Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator at:

Michelle Boone, J.D.
Director of Title IX Compliance/Title IX Coordinator
Mayer Administration Building, Room 210
325-942-2022
michelle.boone@angelo.edu

You may also file a report online 24/7 at www.angelo.edu/incident-form.

If you are wishing to speak to someone about an incident in confidence you may contact the University Health Clinic and Counseling Center at 325-942-2173 or the ASU Crisis Helpline at 325-486-6345.

For more information about Title IX in general you may visit www.angelo.edu/title-ix.

**Modifications to the Syllabus**

This syllabus, including grade evaluation and course schedule, is subject to modification. In particular, the COVID-19 pandemic may require significant changes in course delivery and content on potentially short notice.
<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Reading</th>
<th>Lab</th>
</tr>
</thead>
</table>
| #1: 8/17 – 8/21 | Syllabus Minerals  
Basic Petrology Techniques                        | Lab Manual                       | 1: Igneous Minerals in Hand Sample (due 8/25)                         |
|            | Microscope Theory  
Fundamental Concepts of Igneous Rock Classification and Nomenclature | Lab Manual  
Chapter 1  
Chapter 2 | 2: Identifying Felsic Igneous Minerals in Thin Section (due 9/1)       |
| #2: 8/24 – 8/28 | Textures of Igneous Rocks  
Igneous Structures and Field Relations | Chapter 3  
Chapter 4 | 3: Identifying Mafic Igneous Minerals in Thin Section (due 9/8)       |
| #3: 8/31 – 9/4  | Pluton Types and Emplacement Mechanisms  
Volcanic and Pyroclastic Rocks and Calderas  
Magma Generation | Lab Manual  
Chapter 10 | 4: Intrusive Igneous Rocks in HS and TS (due 9/22)                   |
| #4: 9/7 – 9/11  | Magma Localities                                                      | Chapters 12-17                   | 5: Magma Chamber Modeling (due 10/6)                                  |
| #5: 9/14 – 9/18 | The Phase Rule  
Phase Diagrams                                    | Chapter 5  
Chapter 6 | 6: More Petrographic Techniques (due 10/13)                           |
| #6: 9/21 – 9/25 | Introduction to Metamorphism Classification of Meta Rocks  
Metamorphic Textures | Chapter 8  
Chapter 9 | 7: Extrusive Igneous Rocks in HS and TS (due 10/27)                   |
| #7: 9/28 – 10/2  | Interpreting Histories of Metamorphism and Deformation  
Metamorphic Mineral Assemblages | Chapter 23  
Chapter 24 | 8: Metamorphic Minerals in Thin Section (due 11/3)                     |
| #8: 10/5 – 10/9 | Hand Samples of Meta Minerals  
Metamorphic Facies | Chapter 25 | 9: Metamorphic Rocks in HS and TS (due 11/11)                         |
| #9: 10/12 – 10/16 | Metamorphic Reactions  
Geothermobarometrics                  | Chapter 26  
Chapter 27 | 10: Finish Lab 9 and Review for Lab Final                            |
| #10: 10/19 – 10/23 | Metamorphism of Sediments and Certain Rocks                  | Chapter 28  
Chapter 29 | Lab Final: Minerals and Rocks in HS and TS                           |
| #11: 11/2 – 11/6 | Metamorphism of Sediments and Certain Rocks cont.  
11/13 Exam #2: Metamorphism and Phase Diagrams | Chapter 28  
Chapter 29 | Final Exam (Cumulative)                                              |