

GEOL 4060/6060 Structural Geology
Spring Semester 2018

WEEK STARTING	TUESDAY	THURSDAY	FRIDAY
1 1/1	no class	<i>Introduction</i>	no lab
2 1/8	<i>Geometric Concepts I</i>	<i>The Geological Compass</i>	Lab 1 Geometric Concepts
3 1/15	<i>Contour Maps</i>	<i>Geologic Maps</i>	Lab 2 Structural Measurements*
4 1/22	<i>Geometric Concepts II</i>	<i>Stereonets</i>	Lab 3 Stereonets I
5 1/29	<i>Stress</i>	<i>Stress in the Lithosphere</i>	Lab 4 Stress
6 2/5	<i>Deformation</i>	<i>Strain</i>	Lab 5 Strain
7 2/12	MIDTERM I	<i>Rheology I</i>	Lab 6 Rheology
8 2/19	<i>Rheology II</i>	<i>Brittle Deformation</i>	Lab 7 Geologic Maps
9 2/26	<i>Faults and Faulting I</i>	<i>Faults and Faulting II</i>	no lab
10 3/5	<i>Faults and Faulting III</i>	<i>Fabrics in Fault Rock</i>	Lab 8 Stereonets II & Fault Rocks
11 3/12	spring break	spring break	spring break
12 3/19	MIDTERM II	<i>Folds and Folding I</i>	no lab
13 3/26	<i>Folds and Folding II</i>	<i>Folds and Folding III</i>	Lab 9 Stereonets III & Folds*
14 4/2	<i>Fabrics in Folded Rock</i>	<i>Microscale Deformation</i>	Lab 10 Rock Fabrics
15 4/9	<i>Class Presentations</i>	<i>Class Presentations</i>	Lab 11 Large-scale tectonics
16 4/16	<i>Plate Tectonics</i>	<i>Tectonic Regimes I</i>	Lab 12 Poly-deformed terrains**
17 4/23	<i>Tectonic Regimes II</i>	reading day	no lab
18 4/30	FINAL EXAM (12 - 3 PM)	no class	no lab

* Mandatory field trip during lab period; ** Lab 12 is a full-day trip on Saturday, April 21st.

CONTACT

Dr. Christian Klimczak (klimczak@uga.edu, 706-542-2977)

Office hours: W 11-12 (Office 310)

The best way to get a hold of me is via email.

YouTube: https://www.youtube.com/channel/UCjCSaTJqUDBPszwG50w9a_w/featured

TEXTBOOK & COURSE MATERIALS

The following textbook is required and is available in the UGA bookstore:

Structural Geology 2nd Edition by Haakon Fossen
Cambridge University Press, ISBN-13: 978-1107057647

Other required course materials include:

- Scientific calculator (smart phones are not acceptable)
- Tracing and graphing paper
- Colored pencils
- Drawing materials (protractor, compass, ruler, sharp pencils)

COURSE SUMMARY AND COURSE GOALS

Structural geology is a core discipline in the study of geological sciences. GEOL 4060/6060 Structural Geology will introduce you to the fundamental concepts of structural geology, including the representation and analysis of three-dimensional geologic data, stress and strain, microscopic to outcrop-scale rock fabrics, and large-scale tectonic processes. This course will provide you with the framework to understand and integrate these fundamental concepts in all aspects of the geological sciences.

RECOMMENDED SKILLS

GEOL 3010 is a prerequisite for this course. In addition, the following courses are important and are recommended to be completed prior to taking structural geology:

- MATH 1113 and MATH 2250
- PHYS 1211

LECTURE

Tuesday and Thursday 11am to 12:15pm; Room 325

Lectures will follow the course outline closely. They include the teaching of new content, review of previously taught content, quizzes, and discussion of homework assignments. Questions pertaining to the course content are encouraged and expected and can be asked

anytime during the lecture. Students are expected to take notes, as lecture slides will not be available online. Some lectures have supplementary YouTube video playlists.

LAB

Friday 8am to 11am; Room 325

All labs will be taught and graded by the teaching assistant(s). All lab exercises will count toward the final grade. The lab is intended as a hands-on exercise for concepts learned in the lecture. Labs will be due one week after they are assigned. Labs turned in late will not be accepted and graded with a zero. More information will be given at the beginning of the first lab. Many lab assignments have an explanatory YouTube video.

HOMEWORK

All homework assignments will count toward the final grade. Assignments will be given in the lecture and are intended to reinforce concepts and techniques introduced during the lecture. The number of assignments will depend on the general class performance. Homework will be due at the beginning of the lecture one week after it was assigned. Homework turned in late will not be accepted and graded with a zero. Many homework assignments have an explanatory YouTube video.

FIELD TRIPS

There will be mandatory field trips for Labs 2, 9, and 12. Labs 2 and 9 will take place during regular lab hours. On Saturday, April 21st, we will visit Woodall Shoals, SC, for Lab 12. For that trip, we will use UGA vehicles, travel with private vehicles is not allowed. Be prepared for the trip by wearing clothes appropriate for fieldwork, including rainwear and hiking boots. The trip will happen irrespective of the weather. Students must make arrangements to be able to participate in the field trip, as Lab 12 will be held there. More specific information will be provided closer to the time.

CLASS PROJECT

Students taking the 6060 portion of this course are required to complete a project comprised of original research pertaining to the structural geology aspect of their graduate work. Topics must be outlined in writing and discussed with the course instructor before they are started. The project reports are due on the last day of classes and should be written in the format of a professional research paper. The minimum requirements for the report is 7 pages of single-spaced text (font size 12pt), excluding figures/tables, figure/table captions, and references. Students will not receive credit for the 6060 portion of this course if the deadline for the report is missed or if the report does not meet the minimum requirements (see underlined text above).

EXAMS & QUIZZES

All exams and quizzes will count toward the final grade. There will be two midterm examinations and one final examination. These examinations will be over the length of one lecture. Any material covered in the lectures or labs prior to the examinations may be tested. Students requiring special testing accommodations must submit the official paperwork in time for the first examination. Arrangements must be handled by the responsible campus personnel and are to be made such that the test is taken at the same time with the completed test delivered to me within two hours after completion.

There will be random and unannounced five-minute quizzes. They are designed stimulate critical thinking based on concepts taught in the previous lectures.

EXTRA CREDIT

There are no extra credit tasks intended for this course. Each student is expected to work toward the best possible grade starting with the very first lecture.

GRADING

All grades and scores are non-negotiable. There will be no curving of total course scores and there will be no extra credit assignments at the end of the semester to improve grades. All assignments, quizzes, and exams will count toward the final grade. The final grade consists of all scores from quizzes, homework, midterm exams, the final exam, and the lab portion with the following breakdown:

- Quizzes and Homework 15%
- Midterms 30%
- Final 25%
- Lab 30%

95 or higher	A
90 – 94.9	A–
89 – 89.9	B+
85 – 88.9	B
80 – 84.9	B–
79 – 79.9	C+
75 – 78.9	C
70 – 74.9	C–
65 – 69.9	D
Below 65	F

ATTENDANCE

You are required to attend all lectures and lab sessions and take all quizzes and exams. Deadlines are non-negotiable. Missed lectures, labs, quizzes, and exams cannot be made

up. It is each student's personal responsibility to meet all deadlines. Personal conflicts must be discussed well in advance for alternative solutions. Emergencies must be sufficiently documented and will be judged on a case-by-case basis.

ETHICS AND CLASS ETIQUETTE

- Plagiarism will not be tolerated in this class. Students are expected to observe a conduct in accordance with the academic honesty policy outlined in "A Culture of Honesty" published by the University of Georgia. Academic dishonesty may lead to expulsion. (<http://ovpi.uga.edu/academic-honesty>)
- The use of portable electronic devices, including but not limited to smart phones, tablet computers, or laptops, is not welcome in class, unless specifically requested by the course instructor. All devices must be muted and remain out of sight for the duration of the entire lecture. The use of a portable electronic device during a quiz or examination is considered a violation of the academic honesty policy and, thus, may be prosecuted and handled with consequences detailed under the sanctions for dishonesty of the academic honesty policy.
- If class is cancelled due to inclement weather or other unexpected events, all deadlines and due dates falling in that time period will be transferred to the first day of class after the regular schedule resumes.
- Class is over when it is officially dismissed by the instructor. Personal conflicts that require an early departure must be discussed with the course instructor prior to the lecture.
- Chewing tobacco or bubble gum while in class is unacceptable. Furthermore, having a full meal during the lecture is not welcome.

DISCLAIMER

This course syllabus is a general plan for the course. Deviations announced to the class by the instructor may be necessary.