

GLY4310C - Igneous and Metamorphic Petrology

Professor Michael Perfit, Spring 2015

Sections 002B (Lab M. per. 8-9), 042G (Lab T. per 4-5), 177H (Lab W. per. 4-5); 2306 (Lab F. 7-8)

- ❖ **Room:** Williamson Hall Rm 202
- ❖ **Class Periods:** T R periods 6-7 (generally 12:50-2:45 (max) with a short break)
- ❖ **Office Hours:** T-F Periods 9 -10, approx. 4pm to 6pm or by appointment (send an email)
- ❖ **Office:** Wm 365, Phone 392-2128, **email:** mperfit@ufl.edu

Text: (Required) An Introduction to Igneous and Metamorphic Petrology; J. D. Winter; Prentice Hall.

Lab text: Handouts will be provided before each class

Recommended references (#'s 1 and 4 provide the most info. #'s 2 and 3 are similar to one another, have color imagery and can replace an optical book though they are not as complete a resource.

1. A basic mineralogy text including Optical Mineralogy (Nesse, for example)
2. Petrology of Igneous and Metamorphic Rocks by A. R. Philpotts; Prentice Hall
3. Minerals in Thin Section; Dexter Perkins and Kevin R. Henke; Prentice Hall
4. Petrography of Rocks in Thin Section; Williams, Turner and Gilbert (no longer in print)

Lab Instructors: Iliya Smithka (ismithka@ufl.edu , Wm 273), Charelle Trim (charelletrim@ufl.edu)

**Lab syllabus will be provided during your lab class. Lab Class Rm 214

Grade evaluation:

- 25% Lab
- 15% Quizzes, class assignments and participation, take-home assignments (warm-up questions)
- 15% final project
- 30% Exams (3 @ 10%)
- 15% Final Exam

Letter grades will be assigned as follows:

- A = 93% or above, A- = 90-92.5%,
- B+ = 87-89.5%, B = 83-86.5%, B- = 80-82.5%,
- C+ = 77-79.5%, C = 73-76.5%, C- = 70-72.5%,
- D+ = 67-69.5%, D = 63-66.5%, D- = 60-62.5%,
- E = 59.5% or below.

Course Summary and Objectives

- This course covers a great deal of material. It is important that you attend all classes, keep up with the reading assignments and spend extra time in the lab. I expect you to read all of the assigned material and complete your assignments on time. Late submission of assignments will result in a reduction of 10 pts per late day unless prior approval has been given. **Neatness, spelling (spelling like that used in texting is not acceptable) and grammar count.**
- The subject material assumes a working knowledge of Physical Geology (e.g rock names, plate tectonics), Mineralogy, and basic Chemistry and Physics. If you are weak in these areas, make sure you review them. It is a good idea to go back over your Physical Geology and Mineralogy notes.
- You are **required** to keep a class *notebook* that includes all of the materials handed out in class. The handouts are very important and should be considered primary learning materials. I will check these to make sure you are following all of the classroom lectures.
- I will occasionally be giving you pre-class warm-up questions (short essay) that you are required to answer and hand in before class.
- Participation in class is very important – you should not only try to answer questions I pose but also learn from the answers given. You will be expected to answer questions during each class and to ask me questions about topics that you do not understand. When I ask a question of one of your fellow students you should make sure that you hear and understand the answer. It is important for you to learn where significant “petrologic” localities are in the world and how they are related to plate tectonics. I will provide you with copies of important overheads and PowerPoint presentations that I show in class (on a Canvas course web site).
- I have very high expectations of you. I will put a good deal of effort into this class and I expect the same from you. This is a demanding class that can be difficult if you do not keep up with the reading and or lectures. I am willing and available to help you with any problems you may have with the course material.
- **Etiquette, disabilities, cheating etc. :** No cell phones, radios, MP3 players, etc are allowed to be on during class. Please show courtesy to both your instructors and classmates by arriving and leaving on time and avoiding unnecessary disturbances during class. All students are expected to adhere to the student honor code (<http://www.dso.ufl.edu/judicial/honorcode.php>). Cheating or plagiarism will not be tolerated. Students with disabilities should contact the instructor as soon as possible to discuss appropriate accommodations. The Dean of Students Disability Resource center website is <http://www.dso.ufl.edu/drc/>.

Tentative Schedule of Topics and Textbook readings

Week	Date	Topic	Reading
1	6-Jan	Intro/Basic Concepts	Ch 1
	8-Jan	Intro/Basic Concepts; Igneous Rock Classification & Textures	Ch 1/2/3
2	13-Jan	Igneous Rock Classification & Textures	Ch 3/4
	15-Jan	Igneous Structures and Field Relations	Ch 4
3	20-Jan	Phase Rule and Simple Systems	Ch 6/
	22-Jan	Binary Systems	Ch6/7
4	27-Jan	Binary Systems/Ternary Systems	Ch 7
	29-Jan.	Ternary Systems	Ch 7
5	3-Feb	Ternary Systems Cont	Ch 7
	5-Feb	Exam 1: Ch 1-3, 6	
6	10-Feb	Chemical Petrology- major elements - concepts	Ch 8
	12-Feb	Chemical Petrology major elements – modeling	Ch 8
7	17-Feb	Chemical Petrology major elements – magmatic series	Ch 8
	19-Feb	Chemical Petrology trace elements	Ch 9
8	24-Feb	Chemical Petrology- trace elements/isotopes	Ch 9
	26-Feb	Chemical Petrology- isotopes cont.	Ch 9
9	3-Mar	Spring Break	
	5-Mar	Spring Break	
10	10-Mar	Basaltic Magma genesis	Ch10
	12-Mar	Magma Genesis and diversification	Ch 11
	17-Mar	Mid-Ocean Ridge Magmatism	Ch 13/14
11	19-Mar	MORB and OIB volcanism	Ch 14
	24-Mar	Exam 2 (CH4, 8-11)	
12	26-Mar	Subduction Zone Volcanism – Island Arcs	Ch 16/17
	31-Mar	Subduction Zone Volcanism – Continental Arcs	Ch 17
13	1-Apr	Granitoids/Felsic volcanics	Ch 18
	2-Apr	Metamorphism and Metamorphic Rocks	Ch 21
14	7-Apr	Exam 3 (MORB/OIB, subduction zones, granitoids and felsic rocks)	
	9-Apr	Met Rock Class./Structures and Textures	Ch 22/23
15	14-Apr	Met Phase Diagrams and Facies	Ch 24/25
	16-Apr	Met Phase Diagrams and Facies	Ch 24/25
16	21-Apr	Pelitic Rock Met	Ch 28
	23-Apr	Reading Day	

FINAL EXAM (tentative) April 30th 10 -12 am or April 28th 12:30 -2:30pm

