GLY3202C-Earth Materials **Fall, 2019**
Sections 19050 and 19052

Meeting Time: Lecture meets Tuesdays per 4-5 (Wm202) and Lab meets either Th per 4-5 (Class # 14665, Section 13H4) or Th per 6-7 (Class # 14667, Section 2A32) in Wm 101

Contact:

Name:	Office:	Email:	Phone:	Office Hours:
Dr. Matthew Smith	Wm269	mcsmith@ufl.edu	352-392-2106	MTWF 9-10; T1:30-2:30 or by appt.
Megan Borel	Wm264	meganborel@ufl.edu	NA	TBA

Office Hours: Schedule office hours are on a first come, first served basis. If you are unable to meet during scheduled hours, individual meetings can be set up via email. However, you should NOT HESITATE to seek us out for help when you need it (during office hours or otherwise). Learning to identify and interpret rocks and minerals is an experiential skill that is developed over time. We understand and anticipate that you will need help in developing these skills.

Course Website: Maintained in Canvas. Accessed via http://elearning.ufl.edu

Course Communications: For any class-related questions, students should use the ***Course Questions Discussion Forum***. This will benefit all students that might have similar questions. The instructor will regularly answer all questions and participate in this forum. Students should check if the question they have has already been answered in the forum before posting. Private questions should be sent to the instructor through the course management system, or to her personal e-mail address (this would include questions about grades, late work, etc.). Communications/questions should be responded to within 24 hours during weekdays and 48 hours on weekends.

Required Course Materials:

1. Earth Materials: Introduction to Mineralogy and Petrology by Klein and Philpotts 2nd Ed (ISBN: 978-1-316-60885-2)
2. Hand Lens, 10X Triplet Loupe (many options available here, just be sure it's a decent one. More info is provided on the cour4se canvas page.)

Recommended Course Materials: You will have need of additional reference materials in the lab**,** however, I provide several copies of relevant texts in the lab (they must stay there), so no additional references are required. You may desire to have your own references in which case I recommend an optical mineralogy textbook (I prefer Nesse, but there are several) or other petrography reference like *Minerals in Thin Section* by Perkins and Henke. Additionally, many online references exist and links to a select subset will be provided on the course webpage.

Course Fees: $58.98 additional fee (total) for Materials and Supplies and Equipment Use and Maintenance.

Course Description and Objectives: The goal of this course is for students to gain familiarity with the most common minerals and rocks and their identification, classification, association and environments of formation on Earth. The course is intended to provide a fundamental understanding of rocks and minerals in preparation for field work and further studies in sedimentology and petrology. Note that this course does not go into great detail regarding either water or soils (both important earth materials) which are the subjects of other dedicated coursework. Students that successfully complete this course should be able to:

1. Recall the most common rock-forming minerals, their chemical formulae and physical properties
2. Understand how composition and structure control mineral physical properties and understand the criteria by which minerals and rocks are classified.
3. Identify, describe and classify the most common rock-forming minerals in hand sample and thin section and associate these minerals with their common rock occurrences
4. Identify, describe and classify the most common igneous, sedimentary and metamorphic rocks
5. Associate rock characteristics (textures, composition) with rock-forming processes interpreted to be responsible for their occurrence.
6. Associate different rock-forming environments on Earth with the rock associations that have been observed to occur in each.

Course Design:

Your instructor will be using a Team Based Learning approach to teach this course. During the first class you will be placed in small teams that will be permanent for the semester. Course content will be broken into topical "modules" that comprise 1-2 chapters in the textbook. Each module has assigned readings and will start with an assigned pre-reading and/or video lecture that must be completed prior to the first day of that module. The first day of the module will consist of an Individual Readiness Assurance Test (I-RAT) and Team Readiness Assurance Test (T-RAT) based on the reading. These tests will be short and multiple-choice. Length will vary with each module from 5-15 questions. Please see the class schedule. The same test will be completed individually and as a team. Pre-readings are designed to provide you with the base knowledge to understand each topic. Class activities will then focus on conceptual understanding and application of the content through discussion and teamwork. Aspects of the application activities will be handed in for individual and team grading. All teamwork will be completed in class except in cases where the teams may opt to meet outside of class.

Class Participation:

Class participation is very important – you should be actively engaged in answering questions and listening to other answers given. You are also expected to ask questions during class about

topics you do not understand. There will always be several other students who will benefit from you asking a question. The more engaged you are, the more you will get out of this class. There will be team-based class activities and peer review will form a portion of your grade. With regards to class discussions, this is a **judgment free-zone** where getting answers wrong is equally, if not more valuable, to your learning than getting answers right.

Peer Review:

There will be 2-3 periods of anonymous peer evaluation that will form part of your "quiz" grade. Each individual will evaluate the contributions of all the other team members by assigning an average of 10 points to the other team members. For example, a member of a 6-person team will have 50 points to distribute to the other members of their team. Limitations are that you must differentiate between your point assignments. You must give at least one score of 11 or higher (max. 15) and at least one score of 9 or lower. Individual peer review scores will be the average of points awarded by all the other team members. Your peer review score will be used to moderate your team RAT score. For example, if you were awarded 10, 10, 11, 9, 9 by your 5 team mates your average score would be 49/5 = 9.8 or 98%. As long as you score 95% or higher on peer review your team RAT score will not be affected. If you score less than 95% on peer review your team RAT average will be reduced by 1% for each percent below 95% on your peer review. Eg. If your peer review was a 90% your TRAT average would be multiplied by 0.95, if the peer review was 85% the TRAT average would be multiplied by 0.9, etc.

General education: GLY3202C, Earth Materials is NOT a GenEd physical science (P) course. This course is an upper division course intended for students majoring (or getting a minor) in the Dept. of Geological Sciences or other closely related fields.

Prerequisite Knowledge and Skills: This course presumes that students have had at least one basic introductory geology course that addressed the subject of Earth materials (particularly minerals and rocks). Some review materials are provided to refresh students on the basics that are addressed in courses of this type.

Attendance and Make-Up Policy: Requirements for class attendance and makeup exams, assignments, and other work in this course are consistent with UF attendance policy which can be found at: https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/. Attendance is required and although it may not be recorded on a daily basis missing class can be detrimental to your progress and grades. In lab you are expected to stay for the full lab period (~2 hr lab) unless you have a legitimate reason for leaving early and you discuss it with your TA in advance. Labs take a substantial amount of time outside of the scheduled lab period to complete, so it is expected that you will make the most of the in-class time that is available.

All absences are treated the same in that it is the responsibility of the student to come during office hours (or email for an appointment) in order to discuss recuperation of material missed and the completion of missed assignments. Missed exams and quizzes can only be made up with an excused absence. Missing a quiz due to an unexcused absence will count towards your drop

(See below). Similarly, missing a lab deadline without an excused absence can induce a percentage deduction (See below). An exemplary list of generally acceptable reasons for an excused absence are detailed in the UF attendance policy linked above. Since absences are circumstantial, determination of what beyond this list constitutes an excused absence is subject to the discretion of the instructor. In general, notifying the instructor about potential conflicts as soon as possible can mitigate problems and allow for planned recuperation. Medical notes, receipts, or any other evidence of an emergency can help in a similar manner.

Grading: Information regarding UF grading policies and grape point assignment can be found at: https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/

Breakdown of grade distribution comprising your final semester grade is as follows: Labs and Take Home Assignments 30%, Quizzes 15% (IRAT-4%, TRAT6% and lab quizzes 5%), Low lab practical 10%, High lab practical 15%, hourly exams 30% (3 at 10% each).

A=93%, A-=90-92%, B+=87-89%, B=83-86%, B-=80-82%, C+=77-79%, C=73-76 C-=70-72 D+=67-69%, D=63-66%, D-=60-62%, E=<59%

Labs/Take Home Assignments: Labs are issued on Thursdays and are due the following Thursday unless otherwise specified in class. Take home assignments can be assigned on any meeting day and will have due dates specified in the instructions. Labs comprise much of the classroom experience and require a lot of time both inside and outside of class to complete. Time management is imperative, especially when it comes time to use microscopes. Several classes utilize this lab (and therefor the scope to which you are assigned), so if necessity call for it, specific scheduling/sign up for usage will be implemented for your usage outside of normal class hours.

Late Work Submission Policy:

Any late individual assignments will incur a late penalty. I will accept late work up to five working days (M-F) after the original deadline with a deduction of 10% (of the total points) for each working day i.e. if your work is graded at 90% and it is 3 working days late you will received a grade of 60%. No penalties are accrued on the weekend. After this, NO late work will be accepted. If you have a written excuse from a doctor (for illness) or family member (for a family emergency) AND let the instructor know within a week of the assignment being due, you will not be penalized for late work as long as it is handed in by a re-scheduled date. If you have a preexisting conflict with one of the scheduled exams, an alternative meeting with the instructor must be made at least one week prior to the exam. In case of sudden illness or family emergency, please notify the instructor as soon as possible (within no more than 1 week). Appropriate documentation may be required. No make-ups will be permitted for other, unexcused absences.

Assessments: You will have 3 hourly assessments in lecture and two lab practicals. Dates for the assessments are detailed in the course schedule. Weighting for each is described above. Quizzes occur periodically during class meetings or online via canvas and during lab meetings. Quizzes can be written or practical. All quizzes are announced in advance and short in

nature. You are allowed two (2) drops for your lowest scoring quizzes. One from the IRAT category and one from lab.

Important Dates: 9/24-Hourly Exam 1, 10/17-Midterm Lab Practical, 10/29-Hourly Exam 2, 12/3-Hourly Exam 3, Final Lab Practical -TBA during Final Exam Week- scheduled by section meeting time according to the posted final exam schedule.

UF Policies:

University Policy on Accommodating Students with Disabilities : Students requesting accommodation for disabilities must first register with the Dean of Students Office (is http://www.dso.ufl.edu/drc/). The Dean of Students Office will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. You must submit this documentation prior to submitting assignments or taking the quizzes or exams. Accommodations are not retroactive, therefore, students should contact the office as soon as possible in the term for which they are seeking accommodations.

Student Evaluation of Course and Instructor: Student Evaluation of Course and Instructor: Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via ufl.bluera.com/ufl/ . Summaries of course evaluation results are available to students at gatorevals.aa.ufl.edu/public-results/ .

Academic Honesty: By enrolling in this course, you agree to the University's Honor Code: http://www.dso.ufl.edu/sccr/honorcodes/honorcode.php.

University Policy on Academic Conduct: UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Failure to comply with this code will result in a failing (E) grade in this course. Breaching the code will not be tolerated and will be dealt with strictly and swiftly. If you are unsure if what you are doing would constitute breaking the code, contact the instructor. For example, working as a

group in lab is a good way to bounce ideas and learn from each other. However, each student still needs to turn in their own individual work and come to their own justifiable conclusions.

Class Conduct: All students are expected to follow the Student Conduct Code outlined here: http://www.dso.ufl.edu/sccr/honorcodes/conductcode.php

Punctuality is important, especially since quizzes are given at the start of class. All students are expected to behave professionally and responsibly. No texting, calling, radios, MP3 players, emailing or social media-ing during class. Please show courtesy to your instructor, TAs and classmates by turning up on-time and leaving on-time (not early) and avoiding unnecessary disturbances during class. If there are conflicts with the course material or instructor, it is important to communicate this to the proper authorities as soon as possible. The microscopes are expensive and sensitive devices, therefore food and drink are not allowed in the labs. Thin sections are fragile, so students must follow proper microscope handling techniques. You will be assigned a microscope lab access code. Security of the lab facility is paramount and you are not allowed to give your access code to anyone. The lab door should never be propped open.

Netiquette: Communication Courtesy: All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats.
http://teach.ufl.edu/docs/NetiquetteGuideforOnlineCourses.pdf

UF Online handbook: Additional information can be found on
http://handbook.ufonline.ufl.edu/

Getting Help:

For issues with technical difficulties for E-learning, please contact the UF Help Desk at:

- helpdesk@ufl.edu
- (352) 392-HELP - select option 2
- http://helpdesk.ufl.edu/

Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from The Help Desk when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.
Other resources are available at http://www.distance.ufl.edu/getting-help for:

- Counseling and Wellness resources
- Disability resources
- Resources for handling student concerns and complaints
- Library Help Desk support

Should you have any complaints with your experience in this course please visit http://www.distance.ufl.edu/student-complaints to submit a complaint.

TENTATIVE* Schedule

Week	Date	Day	Klein and Philpotts Readings	Topic Lecture (blue) / Lab (white)	
1	20-Aug			Course Introduction, Intro to Team-Based Learning, Organization into teams	
1	22-Aug	R	3	Lab 1: Macro Mineral ID Part1	Mineral group 1 assigned
2	27-Aug	T	1-2	CH 1 Earth Structure/PT Review	RAT (Ch 1 and 2)
	29-Aug	R	3	Lab 2: Macroscopic Mineral ID Part 2- Identifying minerals in rocks	
3	3-Sep	T	2,4	Chemistry review/bonding/mineral groups	RAT Ch3
	5-Sep	R	3, 7	Lab 3: Intro to the Petrographic microscope/performing optic tests	Lab Quiz 1-Properties and Macro Mineral ID (mineral group 1), Mineral group 2 assigned
4	10-Sep	T	5	Introduction to Crystallography	CH 4-5 RAT; HW 1 Assigned: Ternary plotting and Calculating Mineral Formulae.
	12-Sep	R	6	Lab 3 cont.: Intro to the Petrographic microscope/performing optic tests (cont.)	Lab Quiz 2- Parts of the petrographic microscope
5	17-Sep	T	6	Introduction to petrography and the polarizing optical microscope	Ch 6 RAT
	19-Sep	R	6	Lab 4: Optical identification of minerals	Lab Quiz 4. Performing optic tests
6	24-Sep	T	7	**Hourly Exam 1 (ch 1-5)**, Magma and Igneous Processes	
	26-Sep	R	6	Lab 5: Description and classification of igneous rocks in hand specimen	Lab Quiz 5: mineral group 2 Macro Mineral ID
7	1-Oct	T	8,9	Igneous processes and rock classification cont.	Ch 8/9 RAT, HW2: Phase diagrams
	3-Sep	R	9	Lab 6: Describing and Classifying Igneous Rocks In HS and Thin section	Lab Quiz 6- Mineral ID by optical microscope and
8	8-Oct	T	9	Intrusive structures	Ch 9/10 RAT
	10-Oct	R	9	Midterm Exam Review	

9	15-Oct	T	9	Volcanic features and landforms	
	17-Oct	R	9	**Lab Midterm 1 (Through Igneous Rocks)**	Mineral group 3 assigned
10	22-Oct	T	9	Igneous associations	
	24-Oct	R		Sedimentary rock description, classification and interpretation	
11	29-Oct	T	10/11	**Hourly Exam 2 (ch 6-9)**, Weathering and the sedimentary cycle	HW: Sed. Worksheet,
	31-Oct	R	11/12	Sedimentary rock description, classification and interpretation	Lab Quiz 7:Mineral group 3
12	5-Nov	T	11/12	Sedimentary rock classification, Occurrence and PT associations	Ch 11-12 RAT
	7-Nov	R	11/12	Metamorphic rock description, classification and interpretation	Lab Quiz 8: Sed rock classification
13	12-Nov	T	12	Sedimentary rock classification, Occurrence and PT associations cont.	Mineral group 4 assigned
	14-Nov	R	13/14	Metamorphism and classification of met rocks	Lab Quiz 9- mineral group 4
14	19-Nov	T	13/14	Metamorphism and classification of met rocks	CH 14/15 RAT; HW- Met. Worksheet, mineral group 4
	20-Nov	R	13/14	**Review of all things Sed and Meta**	"Lab" Quiz 10- met rock terminology/ classification
15	26-Nov	T	13/14	Metamorphic rock description, classification and interpretation	
	28-Nov	R	13/14	**Thanksgiving. No class.**	
16	3-Dec	T	13/14	**Hourly Exam 3**	
			The LAB FINAL EXAM will be held during finals week. Because each lab spans two periods there are two possible times according to the ISIS final Exam Schedule. Accordingly which of those options we choose is TBA.		

*All topics and dates are tentative and subject to change