GLY 1150L – Florida Geology
Fall 2025 –Williamson 218
Section 12414 M; Section 12415 T; Section 12416 W | Period 4 - 5 (10:40 AM - 12:35 PM)

INSTRUCTOR: MITCHELL RIEGLER
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Office: Williamson 141
Office hours: Thursday 3-4 or by appointment

REQUIRED TEXTS: There are no required texts or materials to purchase for this class. All needed materials will be provided.

COURSE FEES: Lab material/supplies fee and equipment fee totaling $7.19.

GENERAL EDUCATION OBJECTIVES FOR PHYSICAL SCIENCES:

Physical science courses provide instruction in the basic concepts, theories, and terms of the scientific method in the context of the physical sciences. Courses focus on major scientific developments and their impacts on society, science and the environment, and the relevant processes that govern physical systems. Students will formulate empirically testable hypotheses derived from the study of physical processes, apply logical reasoning skills through scientific criticism and argument, and apply techniques of discovery and critical thinking to evaluate outcomes of experiments

GENERAL INFORMATION:

This course is about making observations of your surrounding natural environment. By applying a few basic geologic principles, you will increase your understanding of Florida, the environment around you, and the world in general. It has been said that the best geologist is the one who has seen the most rocks. With that in mind, the best way to learn geology is to see it first hand, so Florida Geology includes a number of relevant field trips in addition to in-class assignments and activities.

ATTENDANCE:

Attendance is mandatory! This is your basic responsibility at the college level and I will document attendance for each class. Space on field trips is limited due to the number of seats in the van, so you may not be able to make up a lab that you miss. If you know you are going to have an absence in advance, contact me to plan ahead. If you are sick, you must **provide proper documentation** in order to be allowed to make it up. If there is a personal emergency, please contact me as soon as possible. If you do not contact me by the following week, I will not accept the excuse barring extreme circumstances. If you miss a lab without an excuse, you will not be able to make up the lab**.** Unexcused absences will result in a reduction of your overall lab grade. If more than two unexcused absences are accumulated, each successive absence will result in a full letter grade deduction. **Be on time for class!** Much of the relevant information regarding the lab is given at the onset of the period. On field trip days we will leave almost immediately after lab is scheduled to begin.

LATE POLICY:

All in-class labs and take-home assignments will be **due at the beginning of the next class**. Late assignments will be subject to a grade deduction of 10% per week. If you are unable to attend class the day an assignment is due, make sure that I have the assignment by or before the scheduled class time. Late assignments can be turned in to me by appointment outside of scheduled class time. No late work will be accepted after Thanksgiving break.

QUIZZES: We will have quizzes based on the previous week's labs and lecture material. All quizzes will be given online on Canvas. The quiz will open after class/field trip and will be due before the following week. Refer to the tentative class schedule below for dates. Announcements will be given weekly on Canvas as a reminder to complete the quiz and to give a summary of the upcoming week's material.

PRESENTATIONS:
You will give a 8–10-minute presentation on a topic related to Florida geology. Feel free to go into greater detail on a topic covered in class but do NOT regurgitate a lecture. Must use at least 3 peer reviewed sources.

BREAKDOWN OF GRADES:

Attendance and Participation:	10%
Presentations	10%
Quizzes:	20%
Lab Assignments:	60%

Letter-grade assignment:

A	93+
A-	90-93
B+	86-89
B	83-86
B-	80-83
C+	76-79
C	73-76
C-	70-73
D+	66-69
D	63-66
D-	60-63

LECTURE MATERIALS:
I will have handouts and other important information weekly. It is your responsibility to keep track of handouts as well as graded and returned assignments; therefore I recommend you keep a binder or folder for this lab so you do not lose anything. Materials for most labs will be provided, however, please always bring a pencil and a calculator to lab. Geologists often have to draw or make rough sketches of observations and measurements taken in the field. For this reason, a field notebook is recommended for this course. These can be purchased at the UF bookstore.

FIELD TRIP MATERIALS:
All field trips are tentatively listed on the syllabus, but these dates are subject to change based on weather and site scheduling. We will discuss the particulars for each field trip in the class before the trip. If you miss a class before a field trip, you will be expected to contact me for field trip details. As a general rule: be dressed for the weather and wear comfortable walking shoes. Sneakers or sport sandals should be good for most of the trips. **For the Fossil Hunting trip in Hogtown Creek and the Bat Cave expedition, proper field shoes are necessary. Flip flops and shoes that you don't want to get wet/muddy are not recommended for most of our trips.** In most cases we will go rain or shine – always have an umbrella or rain jacket!

Lab Schedule:

Week of	**Lab #**	**Subjects (FT = Field Trip)**
August 25th	1	Geologic Time Scale Lab
September 1st	2	**Earth Materials Lab**
September 8th	3	**FT: Santa Fe Rock Cycle Garden**
September 15th	4	Sedimentary Geology Lab
September 22nd	5	**FT: Hogtown Creek Fossil Hunt**
September 29th	6	Climate Change Lab
October 6th	7	**FT: Fluvial Processes – Hogtown Creek**
October 14th	8	**FT: Boulware Springs & Paynes Prairie**
October 20th	9	**FT: Sweetwater Wetlands**
October 27th	10	Coastal Processes Lab
November 3rd	11	**FT: Bat cave**
November 10th	12	Ground Water Flow Models (online)
November 17th	NA	Final Presentations
December 1st	--	Make-Up/ **Bat cave** Flex Week

NOTE: This schedule is tentative and subject to change.

General Education Program Student Learning Outcomes

Category	Institutional Definition	Institutional SLO
Content	Content is knowledge of the terminology, concepts, methodologies, and theories used within the subject area.	Students demonstrate competence in the terminology, concepts, methodologies, and theories used within the subject area.
Critical Thinking	Critical thinking is characterized by the comprehensive analysis of issues, ideas, and evidence before accepting or formulating an opinion or conclusion.	Students carefully and logically analyze information from multiple perspectives and develop reasoned solutions to problems within the subject area.
Communication	Communication is the development and expression of ideas in written and oral forms.	Students clearly and effectively communicate knowledge, ideas, and reasoning in written or oral forms appropriate to the subject area.

Physical and Sciences Subject Area Student Learning Outcomes

Content	Critical Thinking	Communication
Identify, describe, and explain the basic concepts, theories and terminology of natural science and the scientific method within the subject area. Identify, describe, and explain the major scientific developments within the subject area and the impacts on society and the environment. Identify, describe, and explain relevant processes that govern biological and physical systems within the subject area.	Formulate empirically testable hypotheses derived from the study of physical processes or living things within the subject area. Apply logical reasoning skills effectively through scientific criticism and argument within the subject area. Apply techniques of discovery and critical thinking effectively to solve experiments and to evaluate outcomes	Communicate scientific knowledge, thoughts, and reasoning clearly and effectively.

This course challenges students to investigate physical, historical, economic, and societal aspects of geology. Successful completion of all aspects of this course requires students to demonstrate ability in each of the *Student Learning Outcomes* listed above.

Each of these three SLO areas is addressed at the module-level. Module-level quizzes assess basic content standards regarding terminology and concepts and lab assignments further reinforce this and methodologies in geology. Classroom and lab activities and discussions focus on critical thinking and communication in the geosciences. The nature of science and the scientific method are specifically addressed in Modules 1and reinforced throughout the remaining modules.

A minimum grade of C is required for general education credit.

Module	Key Topics	Assignments
2	**Basic Geologic Principles and Earth Materials** • Basic scientific methodology • Age of the Earth, in context with the age of the universe. • Understanding of divisions of geologic time and how the Geologic Time Scale was derived over time. • Relative Dating vs. Absolute Dating and development of techniques through the scientific method • 5 Basic Geologic Principles, their relevance to relative dating, and use in the context of hypothesis development and testing. • Composition of the Earth, its basic structure/ layers, and thermal features unique to each layer. • Features specific to Earth's crust and chemical composition/ differences of different types of crust. • Contributions of Alfred Wegener, Harry Hess, Frederick Vine & Drummond Matthews to the evolution of the theory of plate tectonics • Evidence on which plate tectonic theory is based. • Basic principles of plate tectonics: major plate configuration, types of plate boundaries and the major processes associated with them. • Basic rock cycle and processes associated with formation of each rock type, specific classification of igneous rocks as it relates to chemical composition, physical features, and setting of formation	**Lab: Lab:** Students are provided a series of rock samples representing each major rock type (sedimentary, igneous, metamorphic) and the types of rocks found in each layer of Earth's structure. Students will apply observational and discovery skills to describe physical features of rocks that identify them as specific rock types. Students will use physical observations to make inferences on chemical composition and test hypotheses
3	**Field Trip to Santa Fe College Rock Cycle Garden** • Tour of Rock Cycle Garden at Santa Fe College to supplement lecture and lab in Module 3. Provides further observation and	**Lab:** Students are given tour of rock garden by TA and use information provided by TA along with observations to

	experiential practice seeing larger diversity of examples from each rock type. Students use observational skills learned in previous lab to identify rock types	answer questions related to each rock and rock type. Questions range from what kind of environment would this rock form in based on physical properties they observe to application of knowledge to make inferences about rock chemical composition and depositional environment
4	**Evolution of Florida/Sedimentation** • Focus on sedimentary rocks and processes. • Classification of different kinds of sedimentary rocks based on chemical composition, transport processes, and depositional environment with emphasis on Florida sedimentary rocks and depositional environment. • Context provided for Florida's geological history and development over time resulting in modern day features and environment. • Changes to global climate that relate to changes in Florida's environment and geological processes resulting in Florida's geology. • Geologic techniques used to classify sedimentary rocks using objective observations and descriptions (i.e., Facies Analysis) and specific classifications for carbonate rocks (Folk's Classification) using scientific method	**Lab:** Students are provided with numerous rock and sediment samples and required to use observational skills, critical thinking, and logical reasoning/ deduction skills to describe rocks and perform a Folk's classification for each rock. Students use these same skills to evaluate sediment samples and determine depositional environment and energy as it relates to sorting, composition, and weathering/erosion.
5	**Coastal Margins, Marine Processes and Climate Lab** • Focuses on marine and coastal processes that have shaped the development of Florida's environment through time, such as sea level rise and fall as it relates to glacial and interglacial periods and larger scale global climate change and cyclical changes to Earth's orbit, procession, and obliquity. • Defines terminology related to continental margins and submarine geological features that are remnant of past high and low sea level stands. • Relates these changes in sea level to sedimentary deposits and lithology of Florida.	**Lab:** Students look at past sea-level and what the rocks deposited during those times. They further have to connect how local topography is related to local lithology and sediment type. **Lab**: Students critically explore the non-uniform mechanics of sea level rise, long term climate drivers (Milankovitch cycles), and present-day anthropogenic climate change. They analyze ice and tree ring climate proxies and

	• Provides information on climate change drivers and interconnected systems responsible for global change. • Provides context for cosmic cycles (Milankovitch Cycles) responsible for natural variations in climate. • Makes connections between natural climate feedback cycles and anthropogenic activity (greenhouse gas input, land use change, etc.). • Empirical data provided for reconstructing global climate proxies (temperature, greenhouse gases) and proxies used to reconstruct paleoclimate	make various graphs where critical thinking is used to make appropriate scales and interpret the plotted graphs.
6	**Ground and Surface Water Flow Lab** • Florida karst geology: Sinkhole formation and distribution, Florida's aquifer system, porosity, surface and groundwater hydrology, human caused sinkholes, Florida's lakes. Emphasizes the importance of understanding hydrogeology and preservation of Florida aquifer as it relates to security of water resources in the state and potential geohazards, describes qualities of materials that make good aquifers/ confining units	**Lab**: Students critically investigate Florida's karst environment and its hydrology mapping ground water and surface water flow and stating their implications.
7	**FT: Fluvial Processes – Hogtown Creek** • Provides terminology related to fluvial processes and fluvial morphology. • Describes different components of river channels and emphasizes how river channels change over time, especially in the context of urban streams where surface water runoff flow has been disrupted due to urbanization and emphasizes both ecological and economic effects of such changes such as increased erosion and mitigation techniques like sediment traps.	**Lab**: Students visit the sand traps on 34th street, the remnants of the old Gainesville mall, and Alfred A. Ring Park, all to investigate urbanization and how it connects fluvial processes. They will answer various questions on the effects of excess erosion and what it means for Gainesville and what projects and current building codes are in place to reduce it. They will also refresh their sedimentary geology knowledge and describe the sediment types at various parts of the creek and what physical processes control them.
8	**Fossils + Fossilization Processes** • Types of fossilization processes (Taphonomy). • Index fossils and biostratigraphy.	**Lab**: Students will use what they learn about paleontology to identify the biological and

	• What can be learned from fossils?	geological processes that led to the formation of different fossils both on the supplied worksheet and in person fossil specimens.
9	**FT: Fossil Hunting Hogtown Creek**	**Lab:** Students will partake in a fossil hunting expedition in Hogtown Creek, where they will learn how to locate fossils relative to geologic context, and how those fossils are deposited as a result of the erosional force of water. Students will then learn to identify fossil remains, as well as the age they come from to make conclusions about the age of the creek sediment.
10	**FT: Sweetwater Wetland Park** Field trip to Sweetwater Wetland Park, guided tour with park ranger describing history of park, reason for construction, and features within park that make it efficient and economically beneficial to the city and ecologically beneficial to the surrounding ecosystem	**Lab**: Students are asked to answer a set of questions regarding the Park Ranger's presentation emphasizing Sweetwater Wetland Park's importance in regard to local watershed and its final destination in Alachua sink, where that water enters our karst aquifer. They are asked to connect previous labs (Ground and Surface Water Flow) when answering this.
11	**FT: Bat Cave** • Provides students unique opportunity see firsthand, large-scale karst feature. • Field trip integrates most modules throughout the semester in a final culminating experience where multiple processes, terms, and features of Florida's environment and integrated into one setting.	**Lab**: Students will explore Santa Fe's Bat cave which allows us to get a first-hand understanding of karst landscapes and groundwater processes.
12 (Final)	**Final Presentation Submission** • Students give a short (5-7 minute) presentation on a topic related to modules discussed during the semester. Students can choose from a pre-made list of topics, or present a topic of their own interest, upon approval from instructor.	**Lab:** Students will integrate knowledge from the entire semester and present a topic for the class related to Florida geology. The presentation requires students to use at

	Example topics consists of coastal harmful algal blooms, Florida water quality issues, spring degradation, EPA Superfund sites in Florida, environment of Florida during a specific geological epoch, fossil hunting sites in Florida and history of that environment	least three scientific, peer reviewed sources and requires students to apply critical thinking and reading comprehension to understand scientific literature. Students will also apply synthesis of scientific literature and employ skills with scientific communication to a broader audience. Students will then critique the presentations of other students, writing a paragraph summarizing each presentation and their critical thoughts on the presentation.
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UF Policies:

University Policy on Accommodating Students with Disabilities: Students requesting accommodation for disabilities must first register with the Dean of Students Office (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.

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

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

All students are expected to behave professionally and responsibly. If there are conflicts with the course material or instructor, it is important to communicate this to the proper authorities as soon as possible.
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
Should you have any complaints with your experience in this course please visit http://www.distance.ufl.edu/student-complaints to submit a complaint.

Student Evaluation of Instruction: 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/ .

Campus Resources

Health and Wellness

U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit U Matter, We Care website to refer or report aconcern and a team member will reach out to the student in distress.

Counseling and Wellness Center: Visit the Counseling and Wellness Center website or call 352-392-1575 for information on crisis services as well as non-crisis services.

Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the Student Health Care Center website.

University Police Department: Visit UF Police Department website or call 352-392-1111 (or 9-1-1 for emergencies).

UF Health Shands Emergency Room / Trauma Center: For immediate medical care call352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; Visit the UF Health Emergency Room and Trauma Center website.

Academic Resources

E-learning technical support: Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at helpdesk@ufl.edu.

Career Connections Center: Reitz Union Suite 1300, 352-392-1601. Career assistanceand counseling services.

Library Support: Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center: Broward Hall, 352-392-2010 or to make an appointment 352-392-6420. General study skills and tutoring.

Writing Studio: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.

Student Complaints On-Campus: Visit the Student Honor Code and Student Conduct Code webpage for more information.

On-Line Students Complaints: View the Distance Learning Student Complaint Process.

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.