Sedimentary Geology

GLY4552C

[4 Credits]

Fall 2022

Instructors: John Jaeger
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Office Hours:

Lindsey Monito 's Virtual office hours: See Canvas
Additionally, the student can contact Lindsey by CANVAS e-*mail to schedule a Zoom appointment outside of the regularly scheduled office hours.*

Course Website: *http://lss.at.ufl.edu*

Course Communications:

Students are encouraged to use the **General Discussion Forum** of this course. This will help all students that might have similar questions. The instructor and/or TA will 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/TA **through Canvas**. Use the **Conversations (Inbox)** tool within Canvas. For information on how to do this view the following Conversations section of the Student Guide. **Questions about personal grades need to be discussed individually and not on group Zoom calls**

All email correspondence to course instructor or TAs must have your full name in the body of the email. Emails not meeting these requirements may not be recognized by our email filters, and thus may not be answered.

Required Text: Principles of Sedimentology and Stratigraphy by Sam Boggs, Prentice Hall (4th or 5th edition).

Required materials:

- Computer with camera, speakers and microphone
- Hand Lens (at least 10x magnification).
- Grain size card (Here's an example from Forestry Suppliers:

- https://www.forestry-suppliers.com/product_pages/products.php?mi=30770&itemnum=77359&redir=Y
- Glass jar with a lid
- Ruler

Course Description: This course aims to develop the student's expertise in sedimentary geology by consideration of both theoretical and practical approaches. A broad range of techniques for the analysis of sediments will be introduced through a sequence of seven modules that contain lectures, quizzes, and exercises. Emphasis is placed on the study of physical sedimentology and its application to various topics in geology:

- Observational Geology
- Weathering and Global Climate
- Sediment Transport
- Sedimentary Petrography
- Critical Thinking
- Sedimentary Environments and Facies Analysis
- Lithostratigraphy and Subsurface Geology

Look at the course Calendar dates of each module.

Prerequisite Knowledge and Skills: Students must have completed courses in physical geology and mineralogy/earth materials. Basic knowledge of statistics and experience with spreadsheets and/or programming languages (e.g., Excel, R, python) is desired.

Course Goals and/or Objectives*:*
By the end of this course, students will be able to:

- Describe and analyze clastic sediments in the lab and the field according to set criteria.
- Identify the main processes and reactions involved in the formation of sediment.
- Evaluate the conditions necessary for sediment transport and its imprint in the sedimentary record.
- Collect, analyze, and synthesize field and laboratory data into a scientific report.
- Recognize and interpret the major genetic types of clastic deposits.
- Use sedimentological characteristics and facies as keys for reconstruction of sedimentary environments.

- Evaluate and interpret stratigraphic sections and geological maps to reconstruct the conditions for the formation of stratigraphy at the regional scale.
- Use sediment mineralogy and downhole logging records to reconstruct subsurface geology.

Assessment goals

The degree to which students have successfully attained these benchmarks will be evaluated:

- Directly through a series of quizzes that are used to evaluate the assimilation of key terminology and concepts.
- Directly through a series of exercises requiring the description, measurement of key characteristics of sediments, and their interpretation.
- Directly through a course projects in which students analyze, describe, interpret and prepare a scientific report discussing a hypothesis from the scientific literature.
- Directly through the comprehensive final exam, for which students have to utilize their experiences in this course to derive and interpret sedimentological data.

Grading Policies

This course consists of seven modules that cover a series of topics relevant for Sedimentology and Stratigraphy. Emphasis is put on the application of geologic concepts to make geological interpretations.

The course includes a personal project that consists in the evaluation and interpretation of a dataset, and the elaboration of a scientific report. This project will be done throughout the entire semester.

Each module comprises two weeks in which students will start by answering a quiz to evaluate the assimilation of basic concepts. You will have the opportunity to retake the quiz by the end of the module to check on your progress and improve the grade.

The module continues with a series of assignments that include the description and analysis of different characteristics of the sediment, specific to each module's topic. Some of the assignments include discussion boards to promote the exchange of ideas among students. At the end of each module students are encouraged to participate in the Module Summary discussion to wrap up important concepts for the module.

Please refer to the Syllabus and Calendar in Canvas for dates of Quizzes, Assignments and Exam.

The final grade of this course is calculated according to the following:

Module quizzes=30%
Assignments = 50%
Semester Outcrop Project = 10%
Final Exam = 10 %

Grading Scale

Point Range (%)	Letter Grade	GPA equivalent
≥ 93.00	A	4.0
90.0 – 92.99	A-	3.67
87.0 – 89.99	B+	3.33
83.0 – 86.99	B	3.0
80.0 – 82.99	B-	2.67
77.0 – 79.99	C+	2.33
73.0 – 76.99	C	2.0
70.0 – 72.99	C-	1.67
67.0 – 69.99	D+	1.33
63.0 –66.99	D	1.0
60.0 – 62.99	D-	0.67
< 60.0	E	0

Note that a "C-" will not be a qualifying grade for critical tracking courses. In order to graduate, students must have an overall GPA and an upper-division GPA of 2.0 or better (C or better). Note: a C- average is equivalent to a GPA of 1.67, and therefore, it does not satisfy this graduation requirement. For more information on grades and grading policies, please visit: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx#grades

Module Quizzes (30%). Each module starts with a quiz that evaluates the main concepts that will be covered in the module. The quizzes are comprised of multiple-choice questions and are open book. The student must complete the quiz by the **first Wednesday** of each module period (except for Week1; see Calendar). There will be another opportunity to complete the quiz, which will open after the deadline of the first take of the quiz and will close on the last day of the module. This second take of the quiz is optional. The higher score obtained in the two takes will be considered for the final grade.

Assignments (50%). Each module considers separate assignments in which the students apply the concepts evaluated in the quiz. The assignments include the description and interpretation of different aspects of the sedimentary record, according to the topic in discussion. Students need to download instructional material, work on the specified tasks, and submit the answers via Canvas by the deadline. Some assignments are completed as a group and others are individual work only. Some of the assignments include the participation in discussion boards in which students share information with their peers and evaluate each other's work.

Semester Outcrop Project (10%). Students will work on an individual scientific research project that will be developed in steps during the rest of the semester. The project is divided in three separate assignment that will lead the student into the analysis, description and interpretation of a dataset to answering the following question: How did the environment of deposition at a coastal outcrop in New Zealand change during the Pleistocene? Several lab assignments are completed to familiarize the student with the types of data and observations needed to interpret the depositional processes that created the outcrop. The project ends with a virtual field trip to One Tree Point in New Zealand in which students will virtually visit the outcrop via video and photos. Students will be provided with a grain size distribution dataset, paleocurrent observations, outcrop photos, and maps that students need to analyze. Students will create a scientific report that explains the main results and conclusion from the study. Students will submit a first version of the scientific report that will be graded by the instructor. The student will have the opportunity to use the instructor's feedback from the first version to improve the report and make a second submission.

Final exam (10%). This is an open book/open notes exam. It is not proctored but it has a time limit of two hours. It consists of eight questions in which students will provide short, written answers addressing specific applications of concepts covered during the semester. A study guide for the Final Exam will be provided to students in advance.

Course Policies

Attendance Policy: This is an online course comprised by seven modules. Students will be required to complete all quizzes, assignments and discussion for each of the modules. All assignments and due dates are listed in the Calendar and Syllabus in Canvas.

Students should plan to log into the Canvas course website regularly during the week to check on announcements from the instructor or course developments.

Quiz/Exam Policy: Students are required to complete all quizzes and exams by the specified deadline. None are proctored and are all open book/open notes.

Quizzes are comprised of multiple-choice questions. There will be two opportunities to complete each module's quiz and only the higher score will be considered for the final grade. Answers for each quiz will be available to students after the end of each module.

Make-up Policy: The instructor will consider the making-up of assignments, quizzes, and exams in each particular situation. Students are encouraged to communicate with the instructor via email as early as possible in case there is any conflict with deadlines.

Assignment Policy: Students are expected to complete all assignments in every module and submit them by the deadline specified in the Calendar of this course. Assignments submitted after the deadline will be penalized. A 10% reduction is considered for work submitted up to 3 days late. Additional 10% reduction will be applied for each 3-day period the submission is late.

Course Technology: Students are required to ensure access to a computer with an Internet connection. Students are expected to have basic knowledge on the use of a computer. In addition, students are required to have working speakers and microphone to complete some assignments.

UF Policies

UF Counseling Services

Resources are available on-campus for students having personal problems or lacking clear career and academic goals. The resources include:
o UF Counseling & Wellness Center, 3190 Radio Rd, 392-1575, psychological and psychiatric services. o Career Resource Center, Reitz Union, 392-1601, career and job search services.
Many students experience test anxiety and other stress related problems. "A Self Help Guide for Students" is available through the Counseling Center (301 Peabody Hall, 392-1575) and at their web site: http://www.counsel.ufl.edu/.

Honesty Policy

All students registered at the University of Florida have agreed to comply with the following statement: "I understand that the University of Florida expects its students to be honest in all their academic work. I agree to adhere to this commitment to academic honesty and understand that my failure to comply with this commitment may result in disciplinary action up to and including expulsion from the University."
In addition, on all work submitted for credit the following pledge is either required or implied: "*On my honor I have neither given nor received unauthorized aid in doing this assignment*."
If you witness any instances of academic dishonesty in this class, please notify the instructor or contact the Student Honor Court (392-1631) or Cheating Hotline (392-6999). For additional information on Academic Honesty, please refer to the University of

Florida Academic Honesty Guidelines at:
http://www.dso.ufl.edu/judicial/procedures/academicguide.html

Accommodation for Students with Disabilities

Students who will require a classroom accommodation for a disability must contact the Dean of Students Office of Disability Resources, in Peabody 202 (phone: 352-392-1261). Please see the University of Florida Disability Resources website for more information at: http://www.dso.ufl.edu/drp/services/.
It is the policy of the University of Florida that the student, not the instructor, is responsible for arranging accommodations when needed. Once notification is complete, the Dean of Students Office of Disability Resources will work with the instructor to accommodate the student.

Software Use

All faculty, staff and student of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate.

Getting Help

Technical Help

In the event that you have technical difficulties with your course, please contact the UF Computing Help Desk either by filling out an online request form or calling (352) 392-4357 - select option 1. The Help Desk is located on the ground floor of the Hub on the UF campus. If your technical difficulties will cause you to miss a due date, you MUST report the problem to the Help Desk and then email your instructor. Include the ticket number that you are given from the Help Desk in an e-mail to the instructor to explain the late assignment/quiz/test.

- Learning-support@ufl.edu
- (352) 392-HELP - select option 2
- https://lss.at.ufl.edu/help.shtml

Any requests for **make-ups** due to technical issues MUST be accompanied by the ticket number received from LSS 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

Please check http://www.distance.ufl.edu/getting-help for additional support:

- 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.