Sedimentary Geology

GLY4552C

[4 Credits]

Fall 2019

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Office Hours: In-office: By apportionment
Virtual office hours: To be announced
Additionally, the student can contact the instructor by 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.

You can also contact your instructor/TA using your UFL.edu e-mail address (this would include questions about grades, late work, etc.). All email correspondence to course instructor or TAs must have your full name in the body of the email, and contain your course number in the subject line. 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).
- Sandstone Petrology: A tutorial petrographic image atlas. (CD-rom)

Note on Acquiring requiring materials

You will need to purchase the Sandstone Petrology tutorial. You can order your CD-rom here: http://store.aapg.org/detail.aspx?id=79

Make sure you order the Petrology CD-rom as soon as possible!

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:

- Critical Thinking
- Observational Geology
- Weathering and Global Climate
- Sediment Transport
- Sedimentary Petrography
- 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. R) 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%
Little Talbot Island 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 (except Module 2) 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 (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. Module 2 does not have a quiz.

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.

Little Talbot Island Project (10%). After the completion of Module 2, 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 in order to test a hypothesis related to the formation of coastal sedimentary features. The project starts with a virtual field trip to Little Talbot Island State Park (Florida, USA) in which students will be introduced to the topic of sand ridges and make observations and describe some features of a modern beach profile. Second, the students will be provided with a grain size distribution dataset that students need to analyze following statistical tests described in the scientific literature. Third, students 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 24 hours late. Additional 10% reduction will be applied for each 24-hour 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

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.

University Policy on Academic Misconduct: Academic honesty and integrity are fundamental values of the University community. Students should be sure that they understand the UF Student Honor Code at http://www.dso.ufl.edu/students.php.

Netiquette: Communication Courtesy: All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats. – See Sample Netiquette Document for more detail.

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.