

## *Course Syllabus*

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### **Course Information**

GEOS 5441 Stratigraphy and Sedimentology, Section 001,

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### **Professor Contact Information**

Dr John M. Holbrook, Geosciences Department UT Arlington

Office is 201 Geosciences on the UTA campus  
Office hours are 12:00-12:30 and 4:30-5:30 on Tuesday and Thursday.  
Important conferences can be arranged at other times by appointment.  
Phone is 272-1202  
e-mail is holbrook@uta.edu

Dr. John M. Holbrook has a B.S. degree from University of Kentucky, an M.S. degree from University of New Mexico, and a Ph.D. from Indiana University, all in geology. His specialties include sedimentology, sequence stratigraphy, sedimentation and tectonics, Quaternary geology and geomorphology.

### **Teaching Assistant Contact Information at UTD**

Amanda Jones, Geosciences Department UT Dallas

Office is FO 2.214  
Office hours are:  
e-mail:

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### **Course Resitricitions**

Permission of instructor

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### **Course Description**

**GEOS 5441 Stratigraphy and Sedimentology** (4 semester hours) Origin and classification of sedimentary rocks, reconstruction of ancient environments, and basic principles of modern stratigraphic nomenclature. Concepts of space and time in the rock record and methods of stratigraphic correlation. Integrated stratigraphic techniques. Study of sedimentary rocks in hand specimen and outcrop. Laboratory course. Field trips. Course is directed to graduate students not majoring in geology and is meant to provide a practical overview of sedimentary geology. Permission of instructor is required to take this course. (3-3) Y

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### **Student Learning Objectives/Outcomes**

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Students will learn the basic principles of deposition and stratigraphy of sedimentary rocks.

Students will demonstrate technical expertise in the methods of analysis utilized in sedimentology and stratigraphy.

Students will become familiar with the scientific literature in sedimentology and stratigraphy.

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### Required Textbooks and Materials

Text is *Principles of Sedimentology and Stratigraphy*, 4<sup>th</sup> edition, by Sam Boggs, Jr.

Students will need field clothing for the field exercises, including rugged boots and possibly rain wear, sample bags, day pack, small notebook, some of the lab gear, a rock hammer, and safety glasses.

### Suggested Course Materials

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### Assignments & Academic Calendar

Lectures will be via web cast in FN 2.104 at UTD between 12:30 and 1:50 PM on Tuesdays and Thursdays (**Note the 30 minute shift from the normal UTD schedule!**). The TA will be present during lectures. They are held live in room 154 of the COBA Building on the UTA Campus.

Laboratories will be held in FO 2.604 between 2:30 and 5:30 PM on Thursday

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## GEOS 5441 COURSE OUTLINE

### LECTURE TOPICS

Introduction; course policies; role of sedimentation and stratigraphy in geology

#### **Section I: Petrology of Siliciclastic Rocks**

- 1) Weathering and the origin of sediment (Chapter 1)
- 2) Sedimentary textures and properties (Chapter 3)
- 3) Petrography, and diagenesis of siliciclastic rocks (Chapter 5)

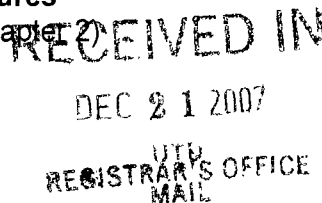
#### **Section II: Petrology of Non-siliciclastic Rocks**

- 1) Introduction to transport and precipitation of non-siliciclastic sediments
- 2) Deposition, diagenesis, and petrology of major non-siliciclastic rock groups (Limestone and Dolomite [Chapter 6]; Evaporites, chert, phosphates, and organic rocks [Chapter 7])

#### **Section III: Fluid Mechanics and Sedimentary Structures**

- 1) Basics of fluid mechanics and sediment transport (Chapter 2)
- 2) Sedimentary Structures (Chapter 4)

#### **Section IV: Depositional Environments**



- 1) Introduction to environmental interpretation
- 2) Continental environments (Chapter 8)
- 3) Marginal-marine environments (Chapter 9)
- 4) Marine environments (Chapter 10 and 11)

**Section V: Facies and Stratigraphy.**

- 1) Facies concepts (Chapter 12)
- 2) Computer modeling of sedimentary facies
- 3) Lithostratigraphy (Chapter 12)
- 4) Seismic, sequence, and magnetic stratigraphy (Chapter 13)
- 5) Biostratigraphy (Chapter 14)
- 6) Chronostratigraphy (Chapter 15)

**Note: A lecture exam will be given at the end of each section of the course over the material within that section. There will be no final; however, bear in mind that the material is cumulative, and material covered in prior sections may be required in subsequent sections. The lecture schedule is not rigid, and certain subjects may take more or less time (depending on the interests and needs of the class).**

**LABORATORIES**

- 1) Sedimentary textures (Week 2)
- 2) Petrology of siliciclastic rocks (Week 3 & 4)
- 3) Petrology of carbonate rocks (Week 5 & 6)
- 4) Sedimentary structures (Week 8 & 9)
- 5) Modern depositional environments (Field Exercise) (Week 10 & 11)
- 6) Ancient depositional environments and Stratigraphy (Field Exercise) (Week 12 & 13)

**Grading Policy**

Determination of grades will include both objective (in sports, examples would include fastest time, highest jump, or best score) and subjective (in sports, gymnastic performance evaluation, strike zone calls, penalty assessments) elements. Possible scores are as follows:

Lecture exams (5)	500 pts	
Laboratory assignments (7)	240 pts	
Research project/paper (1)	160 pts	✓

**Course & Instructor Policies**

Make ups - Scores missed because of University-sanctioned events may be rescheduled. All other make ups are at the option of the instructor. The general policy is to assign a paper. Other options are at the discretion of the instructor.

Examinations - Lecture examinations will be open book, and will comprise essay questions. Lecture exams and labs will both require knowledge of skills and an understanding of process, rather than memorization of facts.

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Field Exercises - At least one lab will require a Saturday field trip. Other field labs will be handled locally, during lab meetings. Field trips will be scheduled soon, and should occur late in the semester over weekend(s). More information will be given prior to the trip.

Note taking - Recording of lectures in lieu of attendance is permitted only with prior approval, which is only granted for extreme hardship cases. The instructor does not loan notes. Absent students must obtain notes from other students. It is a good idea to make arrangements for missed notes before an absence occurs. If a point is missed during a lecture, query the instructor; do not interfere with other students' note taking. It is not a good idea to attempt taking notes by highlighting in the textbook.

Studying - Students are urged to keep up with the reading assignments and appropriate study to avoid being snowed under trying to cram for exams. Being unprepared for class fosters a poor opinion of a student's ability by all concerned. For average students, most experts recommend at least two hours of study for each hour of class time. Exceptional students should do more. Also, in studying the text, pay particular attention to the illustrations. It is a good idea to practice sketching illustrations of key concepts until they can be accurately reproduced quickly and completely. This is an essential skill for all geology students. The provided example questions will prove extremely valuable. It is highly advised that these be treated as homework assignments in preparation for the tests.

Research Project/Paper – Students taking the course for graduate credit will be expected to do a project or a paper in addition to other materials. Whether this amounts to a paper or a project depends on the interests of the student and professor, and opportunities that may arise. Other appropriate and equivalent substitutions for a paper or project may be substituted at the discretion of the instructor. The paper or project or any substitution should be appropriate to the elevation of this course to graduate stature.

Questions - PLEASE ASK APPROPRIATE QUESTIONS AT ANY TIME.

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### **Field Trip Policies**

#### **Off-campus Instruction and Course Activities**

*Off-campus, out-of-state, and foreign instruction and activities are subject to state law and University policies and procedures regarding travel and risk-related activities. Information regarding these rules and regulations may be found at the website address [http://www.utdallas.edu/BusinessAffairs/Travel\\_Risk\\_Activities.htm](http://www.utdallas.edu/BusinessAffairs/Travel_Risk_Activities.htm). Additional information is available from the office of the school dean. Below is a description of any travel and/or risk-related activity associated with this course.*

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### **Student Conduct & Discipline**

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The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, *A to Z Guide*, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and Regulations, Board of Regents, The University of Texas System, Part 1, Chapter VI, Section 3*, and in Title V, Rules on Student Services and Activities of the university's *Handbook of Operating Procedures*. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391).

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

### **Academic Integrity**

The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.

### **Email Use**

The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

### **Withdrawal from Class**

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The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.

### **Student Grievance Procedures**

Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*.

In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

### **Incomplete Grade Policy**

As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the course work has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of F.

### **Disability Services**

The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m.

The contact information for the Office of Disability Services is:  
The University of Texas at Dallas, SU 22  
PO Box 830688  
Richardson, Texas 75083-0688  
(972) 883-2098 (voice or TTY)

Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired).

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enrolled students with mobility impairments may have to be rescheduled in accessible facilities. The college or university may need to provide special services such as registration, note-taking, or mobility assistance.

It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

### **Religious Holy Days**

The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, Texas Code Annotated.

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.

***These descriptions and timelines are subject to change at the discretion of the Professor.***

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