

Lectures: T-Th 11:30 AM – 12:45 PM, WRI C235

Instructor: Dr. Ganqing Jiang
Office: SEB 3241
Contact info: Email: Ganqing.Jiang@unlv.edu
 Phone: 702-895-2708
Laboratories: LFG 105, Thursday, 2:30 PM–5:15 PM (section 1002); Friday, 2:30–5:15 PM (section 1003)
Office Hours: Thursdays 9:20 – 11:20 am and by appointment (walk in is fine)
Required Textbook: Gary Nichols, 2009, *Sedimentology and Stratigraphy*, Blackwell Publishing Company, 432pp. ISBN: 978-1-4051-3592-4 **OR**
 Boggs, S., Jr., 2012, *Principles of sedimentology and stratigraphy*, 5th edition, Pearson Prentice Hall, 720pp. ISBN: 978-0321592576 (a copy is reserved in Lied Library)
T. A.: Audrey Warren, Email: warrea2@unlv.nevada.edu
Office: SEB 3244
Office Hours: Thursdays and Fridays, 1:30 – 2:30 pm, LFG 105 [Audrey will provide a lab syllabus]

Course Description:

This course is designed for undergraduate students majoring in geology and geology-related disciplines and will integrate materials that students have learned from previous classes. It will provide students with (1) basic knowledge and tools to understand the production, transportation, and deposition of sediments, (2) formation of sedimentary textures and structures, (3) sedimentary facies and facies associations, (4) temporal and spatial facies variations, (5) diagenetic features associated with sediment burial and lithification, (6) sedimentary sequences and their forming mechanisms, and (7) techniques (e.g., stable and radiogenic isotopes) used for stratigraphic study (chemostratigraphy) and paleoenvironmental changes in Earth’s history. At the end of the class students are required to acquire the requisite skills related to sedimentary geology and appropriate writing skills by completing class assignments, field-based reports, and exams. **Concurrent enrollment in the lab section is required.**

Learning Objectives:

At the end of the class, every student should be able to:

- Understand the processes that control formation, transportation, and deposition of sediments;
- Quantitatively describe and classify sedimentary rocks in field and laboratory;
- Use facies and facies associations to reconstruct ancient depositional environments;
- Identify common sedimentary textures and structures formed in different depositional environments;
- Explain diagenetic processes and products associated with sediment burial and lithification after deposition;
- Interpret spatial and temporal facies variations in a sequence stratigraphic framework;
- Apply concepts of stable and radiogenic isotopes to interpret paleoenvironmental changes in Earth’s history

Grading:

- Class Attendance and Discussions.....10%
- Midterm Exam.....30%
- Final Exam.....30%
- Lab + Field projects.....30%

Final exam will be cumulative. No make-ups for exams except stated by the university rules (see below).

Final grades are assigned on a percentage basis: A = 100-90%, B = 89-80%, C = 79-70%, D = 69-60%, F: ≤ 59%

A plus/minus system may be employed at the instructor’s discretion. Grades will not be curved; therefore, you are not competing against each other. You are encouraged to study and work on projects together with your classmates, but you must turn in original work.

Lecture and Lab Schedule: The following schedule is tentative. We will need a Saturday and a weekend for field trips. Adjustments to the schedule may be made in accordance with the rate of progress in the classroom.

Date	Lecture Topic	Lab Topic	Reading Assignment
(T) Jan. 22	Class Intro, Intro to Sedimentary Processes and Sedimentary Rocks		(N)1-4 (B)xviii-xix
(Th) Jan. 24	Terrigenous Clastic Sediments and Sedimentary Rocks		(N)5-27 (B)101-134
(Th-F) Jan. 24-25	No Lab		
(T) Jan. 29	Biogenic, Chemical and Volcanogenic Sediments and Rocks		(N)28-43 (B)135-206
(Th) Jan. 31	Sediments: From Source to Destination		(N)44-68, 87-101 (B)3-42
(Th-F) Jan. 31-Feb. 1	Adobe illustrator: How to draw a stratal column	computer cluster, LFG105 first	
(T) Feb. 5	Sedimentary Structures		(N)44-68 (B)65-98
(Th) Feb. 7	Sedimentary Structures		(N)44-68 (B)65-98
(Th-F) Feb. 7-8	Alluvial-Fluvial Processes and Particle Transportation		
(T) Feb. 12	Environments and Facies		(N)69-86 (B)207-245
(Th) Feb. 14	Siliciclastic Depositional System: Alluvial and Glacial		(N)102-113, 129-149 (B)207-245
(Th-F) Feb. 14-15	Sedimentary structures		
(T) Feb. 19	Siliciclastic Depositional System: Fluvial and Lakes		(N)129-161 (B)207-245
(Th) Feb. 21	Siliciclastic Depositional System: Delta and Estuaries		(N)179-214 (B)247-269
(Th-F) Feb. 21-22	Sandstones/Conglomerates/Mudrocks		
(T) Feb. 26	Siliciclastic Depositional System: Coastal Environments		(N)199-214 (B)260-279
(Th) Feb. 28	Siliciclastic Depositional System: Shelf to Basinal Environments		(N)215-261 (B)280-307
(F) Mar. 1	Saturday Field Trip to Rainbow Garden		
(T) Mar. 5	Carbonate Depositional System: An Overview		(N)225-245 (B)308-334
(Th) Mar. 7	Midterm Review		
(Th-F) Mar. 7-8	Clastic Petrology in Thin Sections		
(T) Mar. 12	Carbonate Depositional System: Peritidal Carbonates and Cycles		Reading Assignment
(Th) Mar. 14	Midterm Exam: 11:30 – 12:45, WRI C235		
(Th-F) Mar. 14-15	Carbonate Rocks		
March 18 – 22, Spring Break, No class			
(T) Mar. 26	Carbonate Depositional System: Ramp and Rimmed Shelves		(N)225-245 (B)308-334
(Th) Mar. 28	Microbial Induced Sedimentary Structures (MISS)		Reading Assignment
(Th-F) Mar. 28-29	Carbonate Petrology in Thin Sections		
(T) Apr. 2	Stable Isotopes: Concepts and Analyses		Handouts
(Th) Apr. 4	Stables Isotopes: Revealing Ancient Climate Changes		Handouts
(Th-F) Apr. 4-5	Carbonate Petrology in Thin Sections		
(T) Apr. 9	Diagenesis: An Introduction		(N)274-296 (B)159-167
(Th) Apr. 11	Stratigraphic Concepts: An Overview		(N)297-310 (B)335-357
(Th-F) Apr. 11-12	Discussion: Carbonate cycles for project preparation		
(T) Apr. 16	Stratigraphic Techniques: Fossils and Other Dating Methods		(N)311-334 (B)335-357
(Th) Apr. 18	Sequence Stratigraphy and Sea-level Changes (I)		(N)335-368 (B)365-388
(F-S) Apr. 19-21	Weekend field trip to western Utah; Project for carbonate cycles		
(T) Apr. 23	No class, work on the project		No class
(Th) Apr. 25	Sequence Stratigraphy and Sea Level Changes (II)		(N)335-368 (B)365-388
(Th-F) Apr. 25-26	Geosymposium; No lab		
(T) Apr. 30	Summary: Cycles and Sequence Stratigraphy		
(Th) May 2	In-class discussion of the project progress		
(Th-F) May 2-3	Project work: stratigraphic columns in illustrator		
(T) May 7	Final Exam Review		
(Th) May 9	In-class presentation of the project		LFG 105
(Th-F) May 9-10	In-class presentation of the project		LFG 105
(Th) May 16	Final Exam: 10:10 am – 12: 10 pm, WRI C235 (this is the official exam time)		

Academic Misconduct—Academic integrity is a legitimate concern for every member of the campus community; all share in upholding the fundamental values of honesty, trust, respect, fairness, responsibility, and professionalism. By choosing to join the UNLV community, students accept the expectations of the Student Academic Misconduct Policy and are encouraged when faced with choices to always take the ethical path. Students enrolling at UNLV assume the obligation to conduct themselves in a manner compatible with UNLV's function as an educational institution. An example of academic misconduct is plagiarism. Plagiarism is using the words or ideas of another, from the Internet or any source, without proper citation of the sources. See the Student Academic Misconduct Policy (approved December 9, 2005) located at: <https://www.unlv.edu/studentconduct/student-conduct>.

Classroom Conduct—Students have a responsibility to conduct themselves in class and in the libraries in ways that do not interfere with the rights of other students to learn or of instructors to teach. Use of electronic devices such as pagers, cellular phones, or recording devices, or potentially disruptive devices or activities, are permitted only with the prior explicit consent of the instructor. The instructor may rescind permission at any time during the class. If a student does not comply with established requirements or obstructs the functioning of the class, the instructor may initiate an administrative drop.

Copyright—The University requires all members of the University Community to familiarize themselves with and to follow copyright and fair use requirements. You are individually and solely responsible for violations of copyright and fair use laws. The university will neither protect nor defend you, nor assume any responsibility for employee or student violations of fair use laws. Violations of copyright laws could subject you to federal and state civil penalties and criminal liability, as well as disciplinary action under University policies. Additional information can be found at: <http://www.unlv.edu/provost/copyright>.

Disability Resource Center (DRC)—The UNLV Disability Resource Center (SSC-A 143, <http://drc.unlv.edu/>; 702-895- 0866) provides resources for students with disabilities. If you feel that you have a disability, please make an appointment with a Disabilities Specialist at the DRC to discuss what options may be available to you. If you are registered with the UNLV Disability Resource Center, bring your Academic Accommodation Plan from the DRC to the instructor during office hours so that you may work together to develop strategies for implementing the accommodations to meet both your needs and the requirements of the course. Any information you provide is private and will be treated as such. To maintain the confidentiality of your request, please do not approach the instructor in front of others to discuss your accommodation needs.

Final Examinations—The University requires that final exams given at the end of a course occur at the time and on the day specified in the final exam schedule. The final exam date and location are listed in the Syllabus. See the schedule at: <http://www.unlv.edu/registrar/calendars>.

Incomplete Grades—The grade of “I”—Incomplete—can be granted when a student has satisfactorily completed three-fourths of course work for that semester/session but for reason(s) beyond the student's control, and acceptable to the instructor, cannot complete the last part of the course, and the instructor believes that the student can finish the course without repeating it. The incomplete work must be made up before the end of the following regular semester for undergraduate courses. Graduate students receiving “I” grades in 500-, 600-, or 700-level courses have up to one calendar year to complete the work, at the discretion of the instructor. If course requirements are not completed within the time indicated, a grade of “F” will be recorded and the GPA will be adjusted accordingly. Students who are fulfilling an Incomplete do not register for the course but make individual arrangements with the instructor who assigned the “I” grade.

Library Resources—Librarians are available to consult with students on research needs, including developing research topics, finding information, and evaluating sources. To make an appointment with a subject expert for this class, please visit the Libraries' Research Consultation website: <http://guides.library.unlv.edu/appointments/librarian>. You can also ask questions via chat and text message at <http://ask.library.unlv.edu/>.

Rebelmail—By policy, faculty and staff should email students' Rebelmail accounts only. Rebelmail is UNLV's official email system for students. As such, it is a primary way students receive official university communications such as information about deadlines, major campus events, and announcements. All UNLV students receive a Rebelmail account after they have been admitted to the university. **This class is not using WebCampus!**

Missed Classwork—Any student missing class quizzes, examinations, or any other class or lab work because of observance of religious holidays shall be given an opportunity during that semester to make up missed work. The makeup will apply to the religious holiday absence only. It shall be the responsibility of the student to notify the instructor within the first 14 calendar days of the course for fall and spring courses (excepting modular courses), or

within the first 7 calendar days of the course for summer and modular courses, of his or her intention to participate in religious holidays which do not fall on state holidays or periods of class recess. For additional information, please visit: <http://catalog.unlv.edu/content.php?catoid=6&navoid=531>.

In accordance with the UNLV Faculty Senate-approved policy regarding class time and assignments missed, students who represent UNLV in any official extracurricular activity shall also have the opportunity to make up assignments, provided that the student provides official written notification to the instructor no less than one week prior to the missed class(es).

The spirit and intent of the policy is to offer fair and equitable opportunities to all students, including those representing the university in extracurricular activities. Instructors should consider, for example, that in courses which offer a “drop one” option for the lowest assignment, quiz, or exam, assigning the student a grade of zero for an excused absence for extracurricular activity is both contrary to the intent of the Faculty Senate's policy, and an infringement on the student's right to complete all work and fairly earn her or his grade in the course.

This policy shall not apply in the event that completing the assignment or administering the examination at an alternate time would impose an undue hardship on the instructor or the university that could reasonably have been avoided. There should be a good faith effort by both faculty and student to come to a reasonable resolution. When disagreements regarding this policy do arise, they can be appealed to the department chair/unit director, college/school dean, and/or the Faculty Senate Academic Standards Committee.

For purposes of definition, extracurricular activities may include, but are not limited to: fine arts activities, competitive intercollegiate athletics, science and engineering competitions, liberal arts competitions, academic recruitment activities, and any other event or activity sanctioned by a college/school dean, and/or the Executive Vice President and Provost.

Transparency in Learning and Teaching—The University encourages students to use a transparency template to discuss with their instructors how assignments and course activities benefit student success: https://www.unlv.edu/sites/default/files/page_files/27/TILT-Framework-Students.pdf.

Tutoring and Coaching—The Academic Success Center (ASC) provides tutoring, academic success coaching and other academic assistance for all UNLV undergraduate students. For information regarding tutoring subjects, tutoring times, and other ASC programs and services, visit <http://www.unlv.edu/asc> or call 702-895-3177. The ASC building is located across from the Student Services Complex (SSC). Academic success coaching is located on the second floor of SSC A (ASC Coaching Spot). Drop-in tutoring is located on the second floor of the Lied Library and College of Engineering TBE second floor.

UNLV Writing Center—One-on-one or small group assistance with writing is available free of charge to UNLV students at the Writing Center, located in CDC-3-301. Although walk-in consultations are sometimes available, students with appointments will receive priority assistance. Appointments may be made in person or by calling 702-895-3908. The student's Rebel ID Card, a copy of the assignment (if possible), and two copies of any writing to be reviewed are requested for the consultation. More information can be found at: <http://writingcenter.unlv.edu/>