

Fall 2015

EES 6640

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Syllabus

EES 6640: Sequence Stratigraphy: Fall 2015

Pre-requisites: Sedimentology/Stratigraphy (EES 4750/5750 or equivalent).

Class times: Tuesday 4:00 – 6:45 pm in Geology/Psychology Bldng, Room #1056

Instructor: Dr. Royhan Gani

Office: Geology/Psychology Bldng, Room# 1013

Office hours: By appointment. Best way to contact is via email.

Email: mgani@uno.edu; **Phone:** 504-280-1392

Textbooks:

Required: Catuneanu, O., 2006, Principles of Sequence Stratigraphy, 1st ed., Elsevier, Amsterdam. ISBN: 978-0-444-51568-1

Other useful texts: Coe, A.L., ed., 2005, 1st ed. (reprint with corrections) The Sedimentary Record of Sea-Level Change; Cambridge University Press, Cambridge.

Emery, D., and Myers, K.J., eds., 1996, Sequence Stratigraphy; Blackwell Science, Oxford.

Also, you should read a lot of other outside materials on a topic, including journal papers and special volumes. Periodically, I will be giving out web pages and such for you to view.

Course Objectives:

Sequence stratigraphy deals with genetically-linked, hiatus-bounded strata in a chronostratigraphic framework. Broadly, in this course you will learn how to think and communicate like a sequence stratigrapher within the wider context of sedimentary geology. Specifically, this course will introduce you with various concepts and tools of sequence stratigraphy (see page 3) that will help you in your graduate research, and in your professional career to carry out your job successfully.

Student learning objectives: After successfully completing this course, students will appraise the dynamic nature of physical stratigraphy and their base-level controls that will help them to better exploit earth's natural resources. Students will also gain deeper understanding of global challenges like past and future changes of sea-level.

Course Evaluation

Grading:

Grades based on straight percentages. Example:

90% - 100% of total points possible = A

80% - 89% of total points possible = B

70% - 79% of total points possible = C

60% - 69% of total points possible = D

Lab + assignments	60%
<u>Final paper (20%) and presentation (20%)</u>	<u>40%</u>

Extra Credit: None. Also, don't ask to make up missed assignments, or labs due to unexcused absences.

Reading assignments: Throughout the semester you will be asked to read a variety of papers on different topics related to sequence stratigraphy. For these, we will then have seminar-style discussion and/or presentation in the class.

Lab assignments: There will be a number of labs (given during class periods) in this course that will include outcrop, core, well log, seismic, and model data. Any assignment turned in after the specified due date will be considered late. Assignments turned in late, will be graded **with a 20% penalty**. An assignment not handed in by the end of the week it is due will not be accepted without a valid University excuse. Make-ups will only be given for verifiable written excuses specifically recognized by the University (illness of the student, or of an immediate family member, death of an immediate family member, participation on trips related to certain University functions, major religious holidays). If you miss any classes, you must **promptly** notify me if you have any hope of making up material.

Final project (paper 20% and oral presentation 20% of the total grade): The final project will focus on an interesting subject of sequence stratigraphy (thematic, modeled, or ancient/modern case studies). A paper will be submitted as part of the final project in addition to an oral presentation in front of the class.

You need to discuss and **approve your topic by me and submit a one-page outline by October 06.**

Length of paper: Maximum 10 double-spaced, type-written pages for main body (i.e. text excluding figures and references) of the paper. In addition to 10 pages, it should have an abstract (~250 words), references (minimum 20), and figures/tables (< 7).

Length of presentation (Power Point): 25 minutes (15 minutes talk, 10 minutes question and answer).

Due dates: Paper on **November 24**, at the beginning of the class. **Presentation** on **Nov 24 and Dec 1**, during class hours and according to the alphabetical order of student's last name.

Use your own words. You need to fully reference your sources and information. Plan on reading at least 15 papers on the topic. For paper writing, you may follow the style and format (you do not need to include 'data repository') of *Geology*. Instruction for *Geology* manuscript preparation can be found at <http://www.geosociety.org/pubs/geoguid.htm>.

For oral presentation, see guidelines at <http://www.aapg.org/meetings/instructions/tips.html> and at http://www.agu.org/meetings/fm06/?content=program&show=guidelines_oralSession#prep. For preparing PowerPoint slides, see tips at <http://www.projectionnet.com/styleguide/PresentationStyleGuide.aspx> and at <http://www.aapg.org/meetings/instructions/electronicallyspeaking.pdf>.

Class Attendance: is essential, and will be considered a small % of your grade, along with class participation and attitude. Each week contains important material which we build upon throughout the class. Learning these fundamentals is essential for other classes, thus it is imperative that you understand the concepts. **Please ask questions if there are things you don't understand.** You will enjoy the course more (and likely get a much better grade) if you attend regularly. The University Policy regarding class attendance can be found at: http://www.uno.edu/registrar/catalog/1213catalog/university_regulations.aspx

Class Conduct; Your enrollment in the class binds you to the university student code: Free exercise of knowledge including discussion, expression of enthusiasm, and inquiry are encouraged in academic environments inside and outside of the classroom. Such actions should be conducted in a professional manner. Any form of behavior that interferes with the normal operation of an academic activity or violates the rule of academic responsibility shall be dealt with in accordance with the regulations written in the UNO Student Handbook. It is the responsibility of all students to familiarize themselves with the rules and regulations governing student conduct as published whether in print or on the web, in the UNO Student Handbook and other official publications. An on-line version is available at Student Handbook, <http://www.uno.edu/student-affairs-enrollment-management/student-handbook-policies.aspx>

Cheating and Plagiarism: Academic integrity is fundamental to the process of learning and evaluating academic performance. Academic dishonesty will not be tolerated and violators will be prosecuted. Minimum penalty for such acts is failure of the class. Academic dishonesty includes, but is not limited to, the following: cheating, plagiarism, tampering with academic records and examinations, falsifying identity, and being an accessory to acts of academic dishonesty. Refer to the Student Code of Conduct for further information. The Code is available online at <http://www.uno.edu/student-affairs-enrollment-management/documents/academic-dishonesty-policy-rev2014.pdf>

Students with disability: It is University policy to provide, on a flexible and individual basis, reasonable accommodations to students who have disabilities that may affect their ability to participate in course activities or to meet course requirement. Students with disabilities should contact the Office of Disability Services (LIB 120) as well as their instructors to discuss their individual needs for accommodations. See the UNO Policy for Students with Disabilities at <http://www.ods.uno.edu/>

All Cell Phones MUST be Turned Off before class begins.

Topics (tentative)

	Date	Lecture Topics
August	25	Introduction, History, Facies
September	1	Methods: outcrops, cores, well logs, seismic
	8	Methods: outcrops, cores, well logs, seismic (continued)
	15	Accommodation, Base level, Shoreline trajectory
	22	Sequence stratigraphic surfaces
	29	Systems tracts-I; and Lab1
October	6	Systems tracts-II; Final paper topic due
	13	Fluvial sequence stratigraphy
	20	Incised valley; Students' presentation on Incised valley (choose one published article to present)
	27	Paralic sequence stratigraphy; examination of shallow-marine cores
November	3	Lab2: Well log and Lab3: Seismic section
	10	Deepwater and Carbonate sequence stratigraphy
	17	Lab4: accommodation, cross section, and wheeler diagram
	24	Synthesis: Standardizing sequence stratigraphy; Final paper due Final oral presentation (starts)
December	1	Final oral presentation (continued)