

ESS331 Sedimentology and Stratigraphy

Autumn 2016

Course Description: Formal principles of stratigraphy, types of stratigraphic unit, methods of dating and correlation (biostratigraphic methods, magnetostratigraphy, radiometric dating). Methods of study in surface and subsurface (outcrop measurement, elementary introduction to wireline logs, seismic methods). The principles of facies analysis; sediment transport - sedimentary structures, the flow regime, and sediment gravity flows. The carbonate factory and carbonate rock classification. Trace fossils. Laboratory exercises in understanding facies mapping, isopachs and isolith maps.

Course Objectives:

1. To provide a comprehensive overview of the major sedimentary systems and processes
2. To provide field based training of observational skills

Prerequisite: ESS221H1

Exclusion: GLG360H1, ERS313H5

Recommended Preparation: ESS222H1, ESS330H1

Distribution Requirement: Science

Breadth Requirement: The Physical and Mathematical Universes (5)

Lecturer: Ms Lisa TUTTY (My family name rhymes with putty, not with fruity) BSc(hon) MSc

Office hours: ES4141 (shared office) Wednesdays 10-noon (Se 14 – Dec 7 2016)

Contact: Blackboard discussion board <http://portal.utoronto.ca> or Email lisa.tutty@utoronto.ca (please put ESS331 in the subject line and use your utoronto email, you can generally expect a reply within 48 hours)

Lectures: Mondays noon – 1pm ES1067 AND Tuesdays noon – 1pm ES1067

Midterm test: Tuesday Oc 25 2016 during class time, location TBA

Field trip: Saturday Oc 1 2016 8am – 8pm

Lab instructor: Mr Jesse MANNA jesse.manna@mail.utoronto.ca

Labs: Tuesdays 3-6pm ES1067

Required textbook: Boggs, S (2012). Principles of Sedimentology and Stratigraphy, 5th Edition. Prentice Hall. Please note: There is a “course reserve/short term loan” copy at the Earth Sciences library and at the University of Toronto Mississauga library that you can borrow for 2 hours at a time if you can’t afford to buy or rent the textbook.

Accessibility Services: Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or Accessibility Services at (416) 978 8060; accessibility.utoronto.ca

Marking scheme:

Component	Weight %	Due Date
Midterm	20%	Oc 25th
Lab reports	20%	ongoing
Field report	20%	Dec 6th
Final exam	40%	Scheduled by faculty of Arts and Science, date and time of exam should be posted on Fri Oc 21

The course **late penalty** is 10% per day, including weekends. Assignments are to be submitted online on the Blackboard dropbox or in person at the main Earth Sciences office (9-5 weekdays) ES1066. No assignments will be accepted after the marked assignments have been returned to your classmates. To receive medical consideration use the UofT Medical Form available on Blackboard.

The **course re-marking policy** is: you may submit your ORIGINAL work for re-marking, within five (5) business days of the day the assignment/test is returned to the class, along with a note of explanation as to why you think a particular question deserves a higher grade, in the main Earth Sciences office (9-5pm weekdays). Note: your mark may increase, decrease or remain the same upon re-marking. You must put the TA and instructor name as well as the course code on your letter of explanation, and staple this to the top of the assignment.

Students are responsible for regularly checking their utoronto email accounts and the course Blackboard site (<http://portal.utoronto.ca>).

Academic Integrity:

Academic integrity is fundamental to learning and scholarship at the University of Toronto. Participating honestly, respectfully, responsibly, and fairly in this academic community ensures that the U of T degree that you earn will be valued as a true indication of your individual academic achievement, and will continue to receive the respect and recognition it deserves.

Familiarize yourself with the University of Toronto's Code of Behaviour on Academic Matters (<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>). It is the rule book for academic behaviour at the U of T, and you are expected to know the rules. Potential offences include, but are not limited to:

In papers and assignments:

- Using someone else's ideas or words without appropriate acknowledgement.
- Copying material word-for-word from a source (including lecture and study group notes) and not placing the words within quotation marks.
- Submitting your own work in more than one course without the permission of the instructor.
- Making up sources or facts.
- Including references to sources that you did not use.
- Obtaining or providing unauthorized assistance on any assignment including:
 - working in groups on assignments that are supposed to be individual work;
 - having someone rewrite or add material to your work while "editing".
- Lending your work to a classmate who submits it as his/her own without your permission.

On tests and exams:

- Using or possessing any unauthorized aid, including a cell phone.
- Looking at someone else's answers
- Letting someone else look at your answers.
- Misrepresenting your identity.
- Submitting an altered test for re-grading.

Misrepresentation:

- Falsifying or altering any documentation required by the University, including doctor's notes.
- Falsifying institutional documents or grades.

To remind you of these expectations, and help you avoid accidental offences, I will ask you to include a signed Academic Integrity Checklist with every assignment. If you do not include the statement, your work will not be graded.

The University of Toronto treats cases of academic misconduct very seriously. All suspected cases of academic dishonesty will be investigated following the procedures outlined in the Code. The consequences for academic misconduct can be severe, including a failure in the course and a notation on your transcript. If you have any questions about what is or is not permitted in this course, please do not hesitate to contact me. If you have questions about appropriate research and citation methods, seek out additional information from me, or from other available campus resources like the U of T Writing Website. If you are experiencing personal challenges that are having an impact on your academic work, please speak to me or seek the advice of your college registrar.

Academic Integrity Checklist

ESS331 Sedimentology and Stratigraphy

Lecturer: Lisa TUTTY

Assignment _____

I, _____, affirm that this assignment represents entirely my own efforts.

I confirm that:

- ☐ I have acknowledged the use of another's ideas with accurate citations.
- ☐ If I used the words of another (e.g., author, instructor, information source), I have acknowledged this with quotation marks (or appropriate indentation) and proper citation. **NOTE: WE DON'T USE QUOTATION IN SCIENCE WE PARAPHRASE (Lisa TUTTY)**
- ☐ When paraphrasing the work of others, I put the idea into my own words and did not just change a few words or rearrange the sentence structure
- ☐ I have checked my work against my notes to be sure I have correctly referenced all direct quotes or borrowed ideas.
- ☐ My bibliography includes only the sources used to complete this assignment.
- ☐ This is the first time I have submitted this assignment (in whole or in part) for credit.
- ☐ Any proofreading by another was limited to indicating areas of concern which I then corrected myself.
- ☐ This is the final version of my assignment and not a draft.
- ☐ I have kept my work to myself and did not share answers/content with others, unless otherwise directed by my instructor.
- ☐ I understand the consequences of violating the University's academic integrity policies as outlined in the Code of Behaviour on Academic Matters.

By signing this form I agree that the statements above are true.

If I do not agree with the statements above, I will not submit my assignment and will consult the course instructor immediately.

Student name: _____ Signature: _____ Date: _____

YOU MUST ACTUALLY SIGN THIS, you can't just type your name with a font

Schedule subject to change:

Mon Sep 12	Tues Sep 13	Wed Sep 14	Thurs Sep 15	Fri Sep 16	Sat Sep 17	Sun Sep 18
12-1 ESS331 Sed&Strat ES1067 Lec1 Weathering reactions & global climate Ch1	12-1 ESS331 Sed&Strat ES1067 Lec2 Fluid Flow Ch2	Lisa's office hours 10-noon				
	No lab week 1					
Mon Sep 19	Tues Sep 20	Wed Sep 21	Thurs Sep 22	Fri Sep 23	Sat Sep 24	Sun Sep 25
12-1 ESS331 Sed&Strat ES1067 Lec3 Sedimentary Bedforms Ch4	12-1 ESS331 Sed&Strat ES1067 Lec4 Silicate Rocks Ch3,5	Lisa's office hours 10-noon				Final date to add courses (UofT)
	3-6 ESS331 Sed&Strat ES1067 LAB1 Flume Lab					
Mon Sep 26	Tues Sep 27	Wed Sep 28	Thurs Sep 29	Fri Sep 30	Sat Oc 1	Sun Oc 2
12-1 ESS331 Sed&Strat ES1067 Lec5 Carbonate Rocks Ch6	12-1 ESS331 Sed&Strat ES1067 Lec6 Other chemical, biochemical and carbonaceous rocks Ch7	Lisa's office hours 10-noon			ESS331 NIAGARA FIELD TRIP 8am-8pm	
	3-6 ESS331 Sed&Strat ES1067 LAB2 Sedimentary Textures					
Mon Oc 3	Tues Oc 4	Wed Oc 5	Thurs Oc 6	Fri Oc 7	Sat Oc 8	Sun Oc 9
12-1 ESS331 Sed&Strat ES1067 Lec7 Aeolian Systems Ch8	12-1 ESS331 Sed&Strat ES1067 Lec8 Fluvial Systems I Ch8	Lisa's office hours 10-noon				
	3-6 ESS331 Sed&Strat ES1067 LAB3 Sedimentary Structures					

Mon Oc 10	Tues Oc 11	Wed Oc 12	Thurs Oc 13	Fri Oc 14	Sat Oc 15	Sun Oc 16
Thanksgiving (University closed)	12-1 ESS331 Sed&Strat ES1067 Lec9 Fluvial Systems II Ch8	Lisa's office hours 10-noon				
	3-6 ESS331 Sed&Strat ES1067 LAB4 Siliciclastic Microscope					
Mon Oc 17	Tues Oc 18	Wed Oc 19	Thurs Oc 20	Fri Oc 21	Sat Oc 22	Sun Oc 23
12-1 ESS331 Sed&Strat ES1067 GUEST LECTURE Lec10	12-1 ESS331 Sed&Strat ES1067 GUEST LECTURE Lec11	Lisa's office hours 10-noon		UofT exam schedule posted www.artsci.utoronto.ca		
	3-6 ESS331 Sed&Strat ES1067 LAB5 Carbonate Rocks					
Mon Oc 24	Tues Oc 25	Wed Oc 26	Thurs Oc 27	Fri Oc 28	Sat Oc 29	Sun Oc 30
12-1 ESS331 Sed&Strat ES1067 Lec12 Beach and Deltas Ch9	12-1 ESS331 Sed&Strat ES1067 MIDTERM TEST	Lisa's office hours 10-noon				
	3-6 ESS331 Sed&Strat ES1067 LAB6 Basin Provenance					
Mon Oc 31	Tues Nov 1	Wed Nov 2	Thurs Nov 3	Fri Nov 4	Sat Nov 5	Sun Nov 6
12-1 ESS331 Sed&Strat ES1067 Lec13 Estuarine Systems Ch9	12-1 ESS331 Sed&Strat ES1067 Lec14 Shelves Ch10	Lisa's office hours 10-noon				
	3-6 ESS331 Sed&Strat ES1067 LAB7 Vertical Profile					

Mon Nov 7	Tues Nov 8	Wed Nov 9	Thurs Nov 10	Fri Nov 11	Sat Nov 12	Sun Nov 13
Final date to drop courses		Lisa's office hours 10-noon				
November Break (UofT)	November Break (UofT)					
Mon Nov 14	Tues Nov 15	Wed Nov 16	Thurs Nov 17	Fri Nov 18	Sat Nov 19	Sun Nov 20
12-1 ESS331 Sed&Strat ES1067 Lec15 Continental Slope Ch10	12-1 ESS331 Sed&Strat ES1067 Lec16 Abyssal Plain Ch10	Lisa's office hours 10-noon				
	3-6 ESS331 Sed&Strat ES1067 LAB8 Petrophysical Well Logging					
Mon Nov 21	Tues Nov 22	Wed Nov 23	Thurs Nov 24	Fri Nov 25	Sat Nov 26	Sun Nov 27
12-1 ESS331 Sed&Strat ES1067 Lec17 Carbonate and Evaporite Environments Ch11	12-1 ESS331 Sed&Strat ES1067 Lec18 Stratigraphy I Ch12,13	Lisa's office hours 10-noon				
	3-6 ESS331 Sed&Strat ES1067 LAB9 SedLog logging exercise					
Mon Nov 28	Tues Nov 29	Wed Nov 30	Thurs Dec 1	Fri Dec 2	Sat Dec 3	Sun Dec 4
12-1 ESS331 Sed&Strat ES1067 Lec19 Stratigraphy II Ch14,15	12-1 ESS331 Sed&Strat ES1067 Lec20 Glacial Environments I Ch8 + Eyles	Lisa's office hours 10-noon				
	3-6 ESS331 Sed&Strat ES1067 LAB10 Help with trip reports					

Mon Dec 5	Tues Dec 6	Wed Dec 7	Thurs Dec 8	Fri Dec 9	Sat Dec 10	Sun Dec 11
12-1 ESS331 Sed&Strat ES1067 Lec21 Glacial Environments II Ch8 + Eyles	12-1 ESS331 Sed&Strat ES1067 Lec22 Basin analysis, tectonics, and sedimentation Ch16	Lisa's office hours 10- noon				
	3-6 ESS331 Sed&Strat ES1067 LAB11 Help with trip reports			Start of exams (UofT)		
	Niagara Field Trip report due before 11:59pm					
Mon Dec 12	Tues Dec 13	Wed Dec 14	Thurs Dec 15	Fri Dec 16	Sat Dec 17	Sun Dec 18
Mon Dec 19	Tues Dec 20	Wed Dec 21	Thurs Dec 22	Fri Dec 23	Sat Dec 24	Sun Dec 25
	End of exams (UofT)					