



UNIVERSITY OF CALGARY

DEPARTMENT OF GEOSCIENCE COURSE OUTLINE FALL 2015

1. Course: GLGY 463, Siliciclastic Sedimentology

Lecture Sections:

L01: MoWeFr, 15:00-15:50, ES 162

For a listing of all lab sections corresponding with this course, please see the following link:

http://geoscience.ucalgary.ca/geoscience_info/courses/f15

Dr. Rudi Meyer, Office: ES 110, Ph. 403-210-7848, rmeyer@ucalgary.ca; Office Hours: TBA

D2L Course: GLGY 463 L01 – (Fall 2015) – Siliciclastic Sedimentology

Geoscience Department ES 118, 403-220-5841, geoscience.ucalgary.ca, geoscience@ucalgary.ca

2. Prerequisites: Geology 323; and Geology 343 or 341; and Geology 381. See also Geology [Course Descriptions](#) of the University Calendar. See section 3.5.C in the Faculty of Science section of the online Calendar (www.ucalgary.ca/pubs/calendar/current/sc-3-5.html)

Antirequisites: Credit for both Geology 463 and 461 will not be allowed.

3. Grading: The University policy on grading and related matters is described in sections F.1 and F.2 of the online University Calendar. In determining the overall grade in the course the following weights will be used:

Lecture Quizzes:

Friday Sept 25	5%	
Friday Oct 16	5%	
Friday Nov 6	6%	
Monday Dec 7	7%	
Field Trip Report – Due in Lab Sept 29/Oct 1	5%	
Poster Presentation – in Labs Dec 1/3	12%	
Lab Final Exam – in Labs Nov 24/26	30%	
Lecture Final Exam (3 hrs.) – Scheduled by Registrar	25%	
Top Hat classroom response system participation	5%	[See Note below]

- Both Final Exams are cumulative. The Lecture Quizzes, while focusing on topics covered since prior Quizzes, should otherwise also be considered as cumulative.
- NOTE that during Lab periods of Sept 22 and Sept 24 Field Trips will be carried-out to nearby sandstone outcrops within NE Calgary. The Department of Geoscience will provide transportation to- and from the field site within each of the 3-hour time frames of the different Lab Sections.
- The Top Hat® classroom response mark of 5% is based on participation only. Note that students don't have to be present for every question – a score of about 85% corresponds to a full mark. If you wish to opt-out of this mark the corresponding 5% will be added to the weight of the Final Exam.

► **To opt-out students must inform the instructor R. Meyer in writing (via email) by Friday December 4**

Each piece of work (e.g. Lab assignments, Midterm tests, Final exam, Poster project, and Top Hat® participation) submitted by the student will be assigned a percentage score. The student's average percentage score for the various components listed above will be combined with the indicated weights to produce an overall percentage for the course, which will then be used to determine the course letter grade. The conversion between course percentage and letter grade is as follows:

Letter Grade	Percent	Letter Grade	Percent
A+	95-100	C+	65-69
A	90-94	C	60-64
A-	85-89	C-	56-59
B+	80-84	D+	53-55
B	75-79	D	50-52
B-	70-74	F	0-49

4. **Missed Components of Term Work:** The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in [Section 3.6](#). It is the student's responsibility to familiarize himself/herself with these regulations. See also [Section E.6](#) of the University Calendar

5. **Scheduled out-of-class activities:** N/A

6. **Course Materials:** Textbook: James, N.P. and Dalrymple, R.W. (2010), *Facies Models* 4, *GEOText* 6, Geological Association of Canada, 586 pp.

A list of reference textbooks covering topics in sedimentary petrology are placed 'On Reserve' in the Gallagher Library.

The course D2L site will contain Lab handouts, Lab Quizzes w/answer key as well as copies of selected lecture slides. Additional useful text and graphic resource materials are also posted including links to appropriate ebooks. However, students are advised that staying current with materials posted on D2L is not a substitute for attendance at lectures and reading the textbook. The former provides an interactive environment that complements and provides tangible context to the subject matter treated in the textbook and in lab exercises.

7. **Examination Policy:** No electronic or written aids (e.g. cell phones, tablets, computers, PDAs, notes, textbooks, calculators) will be allowed during writing of any exams. Students should also read the Calendar, [Section G](#), on Examinations.

8. **Writing across the curriculum statement:** In this course, the quality of the student's writing in laboratory reports will be a factor in the evaluation of those reports. See also [Section E.2](#) of the University Calendar.

9. OTHER IMPORTANT INFORMATION FOR STUDENTS:

(a) **Academic Misconduct:** (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under [Section K](#). Student Misconduct to inform yourself of definitions, processes and penalties

(b) **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on [assembly points](#).

(c) **Student Accommodations:** Students needing an Accommodation because of a Disability or medical condition should contact Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities available at http://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities_0.pdf. Students needing an Accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to the Associate Head of Geoscience, Dr. E.S. Krebs by email krebs@ucalgary.ca or phone 403-220-5850.

(d) **Safewalk:** Campus Security will escort individuals day or night (<http://www.ucalgary.ca/security/safewalk/>). Call 220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.

(e) **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). As one consequence, students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information see also <http://www.ucalgary.ca/secretariat/privacy>.

(f) **Student Union Information:** VP Academic Phone: 403 220-3911 Email: suvpaca@ucalgary.ca SU Faculty Rep. Phone: 403 220-3913 Email: science1@su.ucalgary.ca, science2@su.ucalgary.ca and

science3@su.ucalgary.ca; Student Ombuds Office: 403-220-6420 Email: ombuds@ucalgary.ca;
<http://ucalgary.ca/provost/students/ombuds>

- (g) Internet and Electronic Device Information:** You can assume that in all classes that you attend, your cell phone should be turned off unless instructed otherwise. Also, communication with other individuals, via laptop computers, Blackberries or other devices connectable to the Internet is not allowed in class time unless specifically permitted by the instructor. If you violate this policy you may be asked to leave the classroom. Repeated abuse may result in a charge of misconduct.
- (h) U.S.R.I.:** At the University of Calgary, feedback provided by students through the Universal Student Ratings of Instruction (USRI) survey provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses (www.ucalgary.ca/usri). Your responses make a difference – please participate in USRI Surveys.

Department Approval ORIGINAL SIGNED

Date August 17, 2015

TOPICS SCHEDULE — GLGY 463 Siliciclastic Sedimentology — FALL 2015

	WEEK of:	LECTURES: MWF 15:00–15:50 MFH 160	LABS: Tu or Th ES147
1	Sept 7	First lecture (Wed Sept 9): Introduction (logistics, objectives, expectations) The Siliciclastic Rock Cycle; on Facies and Facies Models	<i>NO LAB</i>
2	Sept 14	Physical and biogenic sedimentary structures: application to the recognition of depositional settings Texture and classification of sandstones & conglomerates; mineral constituents	<u>LAB 1</u> Review of siliciclastic rocks, physical sedimentary structures, and ichnofossils
3	Sept 21	Mineral constituents <i>continued</i> Provenance: influence of tectonic setting and climate on texture and composition of siliciclastic rocks Friday, September 25: Quiz #1	<u>LAB 2</u> Field Trip – We are going golfing!
4	Sept 28	Review of Quiz #1. Provenance <i>continued</i> Diagenesis of coarse-grained siliciclastic rocks: influence of sediment composition, stratigraphic stacking, subsurface conditions, compaction, cementation, and dissolution	<u>LAB 3</u> <i>Quiz on Lab 1 at start of Lab</i> Petrology: Common framework constituents. (Qs, Fs, Rs,...). Lab 1 Report due by end of Lab
5	Oct 5	Diagenesis <i>continued</i> . Terrigenous mudstones: classification, clay minerals, depositional facies, authigenic clays, and diagenesis.	<u>LAB 4:</u> <i>Quiz on Lab 3 at start of Lab</i> Petrology: Terrigenous sandstones
6	Oct 12	NO LECTURE Monday October 12 Mudstones <i>continued</i> . Friday, October 16: Quiz #2	<u>LAB 5:</u> <i>Quiz on Lab 4 at start of Lab</i> Petrology: Rudites
7	Oct 19	Review of Quiz #2. Provenance <i>continued</i> Paleosols: horizons, structural units, textures, significance.	<u>LAB 6:</u> <i>Quiz on Lab 5 at start of Lab</i> Petrology: Mudstones, Wackes, Clays

	WEEK of:	LECTURES: MWF 15:00–15:50 MFH 160	LABS: Tu or Th ES147
8	Oct 26	Development of porosity and permeability from deposition to burial Alluvial deposits and facies	<u>LAB 7:</u> <i>Quiz on Lab 6 at start of Lab</i> Petrology: Paleosols
9	Nov 2	Alluvial <i>continued</i> . Eolian deposits. Wave-dominated coasts and shallow marine deposits Friday, November 6: Quiz #3	<u>LAB 8:</u> <i>Quiz on Lab 7 at start of Lab</i> Description/Interpretation of sandstone cores and corresponding thin sections (Week 1)
10	Nov 9	Review of Quiz #3. Wave-dominated coasts <i>continued</i> Reading Days: NO LECTURES Wed Nov 11, Fri Nov 13	<i>READING DAYS – NO LABS</i>
11	Nov 16	Wave-dominated coasts <i>continued</i> Tidal depositional settings	<u>LAB 9:</u> Description/Interpretation of sandstone cores and corresponding thin sections (Week 2)
12	Nov 23	Deltaic settings Deep marine settings, deposits, facies	<u>LAB 10:</u> Lab Final Exam
13	Nov 30	Deep marine <i>continued</i> . Volcaniclastic rocks. Techniques/Applications in sedimentology: electron microscopy, cathodoluminescence, X-ray diffraction, geochemistry, ...	<u>LAB 11:</u> Poster Presentations
14	Dec 7	Monday, December 7: Quiz #4 Review of Quiz #4. Wednesday December 9: last day of classes	<i>NO LAB</i>

NOTES: Schedule is subject to slight changes.

Lecture-period Quizzes #1 to #4 focus on topics covered since prior Quizzes but should otherwise be considered as cumulative.

Both Lab and Lecture Final Exams are cumulative; the latter is scheduled by the Registrar [to be announced].

The Field Trip on Week 3 will take place during each of the scheduled Lab periods.

Lab Schedule: Tuesday: 8:00, 11:00, 14:00, and 17:00; Thursday: 8:00, 11:00, and 14:00.