



## COURSE OUTLINE

### 1. **Course:** GLGY 463, Siliciclastic Sedimentology - Fall 2021

Lecture 01: MWF 13:00 - 13:50 in ST 061

<b>Instructor</b>	<b>Email</b>	<b>Phone</b>	<b>Office</b>	<b>Hours</b>
Dr Rodolfo Meyer	rmeyer@ucalgary.ca	403 210-7848	ES 110	Weekly office hours will be announced following consultation with the students.

#### **In Person Delivery Details:**

This course is planned to be delivered in-person. The only online components are pre-lecture quizzes completed in d2L and some Lab assignments submitted to d2L dropboxes.

#### **Re-Entry Protocol for Labs and Classrooms:**

To limit the spread of COVID-19 on campus, the University of Calgary has implemented safety measures to ensure the campus is a safe and welcoming space for students, faculty and staff. The most current safety information for campus can be found [here](#).

#### **Course Site:**

D2L: GLGY 463 L01-(Fall 2021)-Siliciclastic Sedimentology

**Note:** Students must use their U of C account for all course correspondence.

#### **Course Outcomes:**

- Work effectively by yourself and in teams to enhance learning
- Describe structures and textures of siliciclastic sediment and sedimentary rocks at multiple scales
- Integrate descriptive and analytical data to derive processes and conditions of formation
- Apply concepts of facies and facies successions/associations to characterize depositional settings
- Carry-out interpretations of sediment provenance, depositional setting, and diagenetic history
- Communicate clearly using discipline-specific terminology appropriate to your audience
- Value the beauty [and potential] of the details in sedimentology and petrology
- Evaluate selected properties relevant to fluid reservoir rocks

### 2. **Requisites:**

See section [3.5.C](#) in the Faculty of Science section of the online Calendar.

#### **Prerequisite(s):**

Geology 313, 323, 343 and 381.

#### **Antirequisite(s):**

Credit for Geology 463 and 461 will not be allowed.

### 3. **Grading:**

The University policy on grading and related matters is described in [F.1](#) and [F.2](#) of the online University Calendar.

In determining the overall grade in the course the following weights will be used:

Component(s)	Weighting %	Date
Pre-lecture class Quizzes	15	During the semester, before selected lecture classes, completed and submitted in d2L. Open-book quizzes will be due 5 hrs before given lectures but there are no time limits imposed on writing them.
Lecture class participation	5	During the semester, both individual participation as well as working in small, 2-3 student teams.
Midterm Exam 1 (1.5 hrs)	10	Tuesday October 12, 5 pm
Midterm Exam 2 (1.5 hrs)	10	Wednesday November 17, 5 pm
Lecture class TopHat questions	5	During the semester
Field Trip Report	10	Due at start of Lab on Thurs Oct. 7
Core Lithofacies Report	10	Due at end of Lab on Thurs Oct 14
Lab Assignments	5	Five (5): Sept 9, Oct 21, Oct 28, Nov 4 and Nov 18.
Thin-section Project Report	10	Due on Thurs Dec 9
Final Exam (3 hrs.)	20	TBD (scheduled by Registrar)

Each piece of work (reports, assignments, quizzes, midterm exam(s) or final examination) submitted by the student will be assigned a grade. The student's grade for each component listed above will be combined with the indicated weights to produce an overall percentage for the course, which will be used to determine the course letter grade.

The conversion between a percentage grade and letter grade is as follows.

	A+	A	A-	B+	B	B-	C+	C	C-	D+	D
<b>Minimum % Required</b>	95 %	90 %	85 %	80%	75%	70 %	65 %	60%	56%	53 %	50 %

This course will have a final exam that will be scheduled by the Registrar. [The Final Examination Schedule](#) will be published by the Registrar's Office approximately one month after the start of the term. The final exam for this course will be designed to be completed within 2 hours.

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% might correspond 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 of TopHat marks, students must inform the instructor via email by Friday Dec 3.***

The University of Calgary offers a [flexible grade option](#), Credit Granted (CG) to support student's breadth of learning and student wellness. Faculty units may have additional requirements or restrictions for the use of the CG grade at the faculty, degree or program level. To see the full list of Faculty of Science courses where CG is not eligible, please visit the following website: <https://science.ucalgary.ca/current-students/undergraduate/program-advising/flexible-grading-option-cg-grade>

#### 4. Missed Components Of Term Work:

The university has suspended the requirement for students to provide evidence for absences. Please do not attend medical clinics for medical notes or Commissioners for Oaths for statutory declarations.

In the event that a student legitimately fails to submit any online assessment on time (e.g. due to illness etc...), please contact the course coordinator, or the course instructor if this course does not have a coordinator to arrange for a re-adjustment of a submission date. Absences not reported within 48 hours will not be accommodated. If an excused absence is approved, one possible arrangement is that the percentage weight of the legitimately missed assignment could also be pro-rated among the components of the course. This option is at the discretion of the coordinator and may not be a viable option based on the design of this course.

## 5. Scheduled Out-of-Class Activities:

The following out of class activities are scheduled for this course.

Activity	Location	Date and Time	Duration
Midterm Exam #1	TBA	Tuesday, October 12, 2021 at 5:00 pm	1.5 Hours
Midterm Exam #2	TBA	Wednesday, November 17, 2021 at 5:00 pm	1.5 Hours

**REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME-ACTIVITY.** If you have a conflict with the out-of-class-time-activity, please contact your course coordinator/instructor no later than **14 days prior** to the date of the out-of-class activity so that alternative arrangements may be made.

Midterms are written out of regularly scheduled class times because the usual lecture time of 50 minutes provide very little time to thoughtfully answer relevant questions.

**NOTE** that we will undertake two(2) Field Trips to nearby sandstone outcrops within NE Calgary. These are scheduled for Sept 16 and 23 and will be carried-out during regularly scheduled Lab times. The Department of Geoscience will provide transportation to- and from the field site within the 3-hour time frame of the Lab periods.

## 6. Course Materials:

Required Textbook(s):

Noel P. James & Robert W Dalrymple, *Facies Models 4*: Geological Association of Canada.  
Sam Boggs, Jr., *Petrology of Sedimentary Rocks - Unlimited User ebook, freely available - Link provided in D2L*: Cambridge University Press.

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

The course D2L site will contain copies of lecture slides with extensive written notes and Lab handouts. 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 textbooks. The former provide an interactive environment that complements and provides further context to the topics treated in textbooks and Lab exercises.

In order to successfully engage in their learning experiences at the University of Calgary, students taking online, remote and blended courses are required to have reliable access to the following technology:

- A computer with a supported operating system, as well as the latest security, and malware updates;
- A current and updated web browser;
- Webcam/Camera (built-in or external);
- Microphone and speaker (built-in or external), or headset with microphone;
- Current antivirus and/or firewall software enabled;
- Stable internet connection.

For more information please refer to the UofC [ELearning](#) online website.

## 7. Examination Policy:

No aids are allowed on tests or examinations.

Students should also read the Calendar, [Section G](#), on Examinations.

## 8. Approved Mandatory And Optional Course Supplemental Fees:

There are no mandatory or optional course supplemental fees for this course.

## 9. Writing Across The Curriculum Statement:

For all components of the course, in any written work, the quality of the student's writing (language, spelling, grammar, presentation etc.) can be a factor in the evaluation of the work. See also Section [E.2](#) of the University Calendar.

## 10. Human Studies Statement:

Students will not participate as subjects or researchers in human studies.

See also [Section E.5](#) of the University Calendar.

## 11. Reappraisal Of Grades:

A student wishing a reappraisal, should first attempt to review the graded work with the Course coordinator/instructor or department offering the course. Students with sufficient academic grounds may request a reappraisal. Non-academic grounds are not relevant for grade reappraisals. Students should be aware that the grade being reappraised may be raised, lowered or remain the same. See [Section I.3](#) of the University Calendar.

- a. **Term Work:** The student should present their rationale as effectively and as fully as possible to the Course coordinator/instructor within **ten business days** of either being notified about the mark, or of the item's return to the class. If the student is not satisfied with the outcome, the student shall submit the Reappraisal of Graded Term work form to the department in which the course is offered within 2 business days of receiving the decision from the instructor. The Department will arrange for a reappraisal of the work within the next ten business days. The reappraisal will only be considered if the student provides a detailed rationale that outlines where and for what reason an error is suspected. See sections [I.1](#) and [I.2](#) of the University Calendar
- b. **Final Exam:** The student shall submit the request to Enrolment Services. See [Section I.3](#) of the University Calendar.

## 12. Other Important Information For Students:

- a. **Mental Health** The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed. We encourage you to explore the mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (Room 370, MacEwan Student Centre, [Mental Health Services Website](#)) and the Campus Mental Health Strategy website ([Mental Health](#)).
- b. **SU Wellness Services:** For more information, see [www.ucalgary.ca/wellnesscentre](http://www.ucalgary.ca/wellnesscentre) or call [403-210-9355](tel:403-210-9355).
- c. **Sexual Violence:** The Sexual Violence Support Advocate, Carla Bertsch, can provide confidential support and information regarding sexual violence to all members of the university community. Carla can be reached by email ([svasa@ucalgary.ca](mailto:svasa@ucalgary.ca)) or phone at [403-220-2208](tel:403-220-2208). The complete University of Calgary policy on sexual violence can be viewed at (<https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Sexual-and-Gender-Based-Violence-Policy.pdf>)
- d. **Misconduct:** Academic integrity is the foundation of the development and acquisition of knowledge and is based on values of honesty, trust, responsibility, and respect. We expect members of our community to act with integrity. Research integrity, ethics, and principles of conduct are key to academic integrity. Members of our campus community are required to abide by our institutional [Code of Conduct](#) and promote academic integrity in upholding the University of Calgary's reputation of excellence. Some examples of academic misconduct include but are not limited to: posting course material to online platforms or file sharing without the course instructor's consent; submitting or presenting work as if it were the student's own work; submitting or presenting work in one course which has also been submitted in another course without the instructor's permission; borrowing experimental values from others without the instructor's approval; falsification/fabrication of experimental values in a report. Please read the following to inform yourself more on academic integrity:

[Student Handbook on Academic Integrity](#)  
Student Academic Misconduct [Policy](#) and [Procedure](#)  
[Research Integrity Policy](#)

Additional information is available on the [Student Success Centre Academic Integrity page](#)

### e. Academic Accommodation Policy:

It is the student's responsibility to request academic accommodations according to the University policies and procedures listed below. The student accommodation policy can be found at: <https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Student-Accommodation-Policy.pdf>

Students needing an accommodation because of a disability or medical condition should communicate this need to Student Accessibility Services in accordance with the Procedure for Accommodations for Students with Disabilities: <https://www.ucalgary.ca/legal-services/sites/default/files/teams/1/Policies-Accommodation->

[for-Students-with-Disabilities-Procedure.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, by filling out the [Request for Academic Accommodation Form](#) and sending it to Jennifer Cuthbertson by email [cuthberj@ucalgary.ca](mailto:cuthberj@ucalgary.ca) preferably 10 business days before the due date of an assessment or scheduled absence.

- f. **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPP). 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 [Legal Services](#) website.
- g. **Student Union Information:** [VP Academic](#), Phone: [403-220-3911](tel:403-220-3911) Email: [suvpaca@ucalgary.ca](mailto:suvpaca@ucalgary.ca). SU Faculty Rep., Phone: [403-220-3913](tel:403-220-3913) Email: [sciencerep@su.ucalgary.ca](mailto:sciencerep@su.ucalgary.ca). [Student Ombudsman](#), Email: [ombuds@ucalgary.ca](mailto:ombuds@ucalgary.ca).
- h. **Surveys:** At the University of Calgary, feedback through the Universal Student Ratings of Instruction ([USRI](#)) survey and the Faculty of Science Teaching Feedback form provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses. Your responses make a difference - please participate in these surveys.
- i. **Copyright of Course Materials:** All course materials (including those posted on the course D2L site, a course website, or used in any teaching activity such as (but not limited to) examinations, quizzes, assignments, laboratory manuals, lecture slides or lecture materials and other course notes) are protected by law. These materials are for the sole use of students registered in this course and must not be redistributed. Sharing these materials with anyone else would be a breach of the terms and conditions governing student access to D2L, as well as a violation of the copyright in these materials, and may be pursued as a case of student academic or [non-academic misconduct](#), in addition to any other remedies available at law.

**TENTATIVE TOPICS SCHEDULE\* — GLGY 463 Siliciclastic Sedimentology — FALL 2021**

\* Subject to changes.

	<b>WEEK of:</b>	<b>LECTURES: MWF 13:00-13:50 ST061</b>	<b>LABS: Thursdays 11:00-13:50 ES147</b>
1	Sept 6	<b>1. Wed Sept 8:</b> Introduction; discussion on Intended Learning Outcomes <b>2. Fri Sept 10:</b> What physical sedimentary structures do you know? What do they indicate about processes?	Review : Physical sedimentary structures and trace fossils in siliciclastic rocks <b>LAB 1</b> <b>Assignment due at end of Lab</b>
2	Sept 13	<b>3. Mon Sept 13:</b> Conditions for erosion and deposition processes <b>4. Wed Sept 15:</b> Facies & facies successions/associations <b>5. Fri Sept 17:</b> Review of Lab 2. Fluvial facies <i>continued</i>	<b>LAB 2</b> 1st Field Trip to Paskapoo Fm. sandstone outcrops <i>(We are going golfing!)</i>
3	Sept 20	<b>6. Mon Sept 20:</b> Fluvial facies <i>continued</i> <b>7. Wed Sept 22:</b> Eolian depositional processes and facies <b>8. Fri Sept 24:</b> Shallow marine (SM) depositional processes and facies (Waves-Tides-Deltas)	<b>LAB 3</b> 2nd Field Trip to Paskapoo Fm. sandstone outcrops
4	Sept 27	<b>9. Mon Sept 27:</b> SM depositional processes and facies <i>cont'd</i> <b>10. Wed Sept 29:</b> SM depositional processes and facies <i>cont'd</i> <b>11. Fri Oct 1:</b> Review of Lab 4.	<b>HOLIDAY - NO LAB</b>
5	Oct 4	<b>12. Mon Oct 4:</b> SM depositional processes and facies <i>cont'd</i> <b>13. Wed Oct 6:</b> SM depositional processes and facies (deltas) <b>14. Fri Oct 8:</b> SM depositional processes and facies (deltas) <i>cont'd</i>	<b>LAB 4</b> <b>Paskapoo Formation Field Report due at start of Lab</b> Milk River Fm. Core Description
6	Oct 11	<b>15. Mon Oct 11: HOLIDAY - NO CLASS</b> <b>Out-of-class MIDTERM EXAM 1 on evening of Tuesday Oct 12</b> <b>16. Wed Oct 13:</b> Siliciclastic Rock Constituents: Framework grains	<b>LAB 5</b> Milk River Fm. Core Interpretation <b>Milk River Formation Description and Interpretation due at end of Lab</b>

		<b>17. Fri Oct 15:</b> Review of Midterm and reflection on class	
	<b>WEEK of:</b>	<b>LECTURES: MWF 13:00-13:50 ST061</b>	<b>LABS: Thursday ES147</b>
<b>7</b>	Oct 18	<b>18. Mon Oct 18:</b> Siliciclastic Rock Constituents: Chert <b>19. Wed Oct 20:</b> Siliciclastic Rock Constituents: Clays <b>20. Fri Oct 22:</b> Provenance of siliciclastic rocks 1	<b>Petrology</b> : Description (texture, mineral composition) and classification <i>Assignment due at end of Lab</i> <u>LAB 6</u>
<b>8</b>	Oct 25	<b>21. Mon Oct 25:</b> Provenance of siliciclastic rocks 2 <b>22. Wed Oct 27:</b> Diagenetic processes 1 <b>23. Fri Oct 29:</b> Diagenetic processes 2	<b>Petrology:</b> Provenance <i>Assignment due at end of Lab</i> <u>LAB 7</u>
<b>9</b>	Nov 1	<b>24. Mon Nov 1:</b> Paleosols: processes and structures <b>25. Wed Nov 3:</b> Early diagenesis 1 (Eogenesis) <b>26. Fri Nov 5:</b> Early diagenesis 2 (Eogenesis)	<b>Petrology:</b> Diagenetic History 1 <i>Assignment due at end of Lab</i> <u>LAB 8</u>
<b>10</b>	Nov 8	<b>TERM BREAK - NO CLASSES</b>	<b>NO LAB</b>
<b>11</b>	Nov 15	<b>27. Mon Nov 15:</b> Early diagenesis 3 (Eogenesis) <b>28. Wed Nov 17: NO CLASS</b> <b><i>Out-of-class MIDTERM EXAM 2 on evening of Wed Nov 17</i></b> <b>29. Fri Nov 19:</b> Burial diagenesis 1 (Mesogenesis)	<b>Petrology:</b> Diagenetic History 2 <i>Assignment due at end of Lab</i> <u>LAB 9</u>
<b>12</b>	Nov 22	<b>30. Mon Nov 22:</b> Review of Midterm and reflection on class <b>31. Wed Nov 24:</b> Burial diagenesis 2 (Mesogenesis) <b>32. Fri Nov 26:</b> Telogenesis (incl. Ivishak)	<b>Petrology:</b> Thin-Section PROJECT <u>LAB 10</u>
<b>13</b>	Nov 29	<b>33. Mon Nov 29:</b> Geochemical Methods 1 <b>34. Wed Dec 1:</b> Geochemical Methods 2 <b>35. Fri Dec 3:</b> Deep sea processes and facies	<b>Petrology:</b> Thin-Section PROJECT <u>LAB 11</u>
	<b>WEEK of:</b>	<b>LECTURES: MWF 13:00-13:50 ST061</b>	<b>LABS: Thursday ES147</b>
<b>14</b>	Dec 6	<b>36. Mon Dec 6:</b> ??? <b>37. Wed Dec 8:</b> NO CLASS ( <i>compensated by Midterm 1</i> )	<b>NO LAB</b> <b><i>Thin-section Report due on Thursday Dec 9</i></b>

**NOTES:** The Field Trips in Weeks 2 and 3 will take place during each of the scheduled Lab periods.

The Lecture Final Exam is cumulative; it is scheduled by the Registrar[*date/time to be announced*].

Electronically Approved - Sep 08 2021 11:46

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**Department Approval**

Electronically Approved - Sep 08 2021 16:03

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**Associate Dean's Approval**