



UNIVERSITY OF CALGARY
FACULTY OF SCIENCE
DEPARTMENT OF GEOSCIENCE
COURSE OUTLINE
WINTER 2017

1. **Course:** Geology 581, Advanced Petroleum Geology

Lecture Sections:

L01: TuTh, 11:00-12:15, ST 139

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

http://geoscience.ucalgary.ca/geoscience_info/courses/w17

Instructor, Dr. Steve Larter, Office ES 110, Tel. No. 403-210-7848, e-mail address, slarter@ucalgary.ca,
Office Hours: Monday By appointment only

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

2. **Prerequisites:** Geology 577. 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 no more than one of Geology 575, 581, 589.01, 589.02, 589.07, 589.08, 591, 595.01, 596, 689.01, 689.02, 689.07, 689.08, 694.01, 694.03, 696, will not be allowed.

ADVANCED PETROLEUM GEOLOGY-581 Course Content

Principles and applications of the characterization of petroleum systems, reservoirs and their fluids with a focus on unconventional resources. Methods of reservoir characterization, log analysis, subsurface mapping and the evaluation of reservoir and fluid heterogeneity with respect to geological characteristics and fundamental fluid flow related reservoir and fluid properties (e.g. viscosity, porosity, permeability). The course also examines subsurface CO₂ storage and other routes to eliminating CO₂ emissions from fossil fuel use as well as looking at the role of geoscience in energy recovery innovation and technology development during our energy transition. This course may not be repeated for credit.

Instructors and workshop participants: Larter; Oldenburg; Hubbard; Clarkson; Meyer; Huang; Fustic; Fowler; External speakers

This is an advanced class with extensive student participation and group work. There is no course text or notes and supporting material will be based on the scientific and engineering literature and student discovered material. It is assumed that students have a basic understanding of rock types and properties, chemical kinetics and the physics of fluid flow in porous media.

Sections

LEC 1	TR (T – Tuesday and R - Thursday)	11:00 - 12:15 ST 139
LAB OR WORKSHOP 1	Monday	11:00 - 13:50 ES 149
LAB 2 OR WORKSHOP 2	Monday	14:00 - 16:50 ES 149
LAB 3 OR WORKSHOP 3	Monday	17:00 - 19:50 ES 149

GRADING AND ASSESSMENT

70% individual written 4 page CSPG style conference abstract on a selected topic. 1 per student. Due Friday March 24.

30% group innovation project (6 students/group) Assessed as presentation plus annotated PowerPoint report. Due Wednesday April 12.

There may be some occasional informal quizzes throughout course but these will not be formally graded.

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:

70% written 4 page CSPG style conference abstract on a selected topic.

30% group innovation project (6 students/ group). Groups assigned randomly, each student receives group grade.

Letter grade conversions are listed below. The Instructor may shift the numerical cut-off levels down as appropriate, but they will not be shifted up.

Letter Grade	Percent	Letter Grade	Percent
A+	90-100	C+	66-68.9
A	82-89.9	C	62-65.9
A-	79-81.9	C-	59-61.9
B+	76-78.9	D+	56-58.9
B	72-75.9	D	50-55.9
B-	69-71.9	F	0-49.9

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. **Course Materials: Textbooks:** There is no required textbook for this course. Useful literature will be indicated in class and students are expected to find their own relevant research material.
6. Examination Policy: No Examinations. Grades based on paper and project report.
7. Writing across the curriculum statement: In this course, the quality of the student's writing in papers and reports will be a factor in the evaluation of those reports.
8. **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) **Academic Accommodation Policy:** Students with documentable disabilities are referred to the following links: Students with Disabilities: <http://www.ucalgary.ca/pubs/calendar/current/b-1.html> and Student Accessibility Services: <http://www.ucalgary.ca/access/>
 - (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: December 12, 2016

Assistant Dean's Approval for
alternate final examination arrangements: ORIGINAL SIGNED

Date: December 19, 2016