



UNIVERSITY OF CALGARY
FACULTY OF SCIENCE
DEPARTMENT OF GEOSCIENCE
COURSE OUTLINE
WINTER 2015

1. **Course:** Geology 353, Surficial Systems

*How many years can a mountain exist,
Before it is washed to the sea?
--Bob Dylan*

Lecture Sections: L01: MoWeFr 15:00-15:50, ENE 241

D2L Course name: GLGY 353 L01 Winter 2014 – Surficial Systems

Potentates:

Grand Illustrious Potentate I:

Dr. Jerry Osborn, Office ES 510, Tel. No. 403-220-6448, osborn@ucalgary.ca, office hrs MW 13:00-14:00

Grand Illustrious Potentate II:

Dr. Masaki Hayashi, Office ES 278, Tel. No. 403-220-2794, hayashi@ucalgary.ca, office hrs Th 16:00-18:00

Lesser, but still potent, potentates:

Eowyn Campbell
Craig Christensen
Dan Hill
Mary Kruk
Igor Pavlovskii
Alison Schincariol

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

2. **Prerequisites:** Geology 201, and 202 or 203; Chemistry 201 or 211, and 203 or 213; Physics 211 or 221, and 223; Mathematics 253 or 267 or 277 or 283 or Applied Mathematics 219. 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)

Antirequisite: Credit for both Geology 353 and 373 will not be allowed.

3. **Grading:** The University policy on grading and related matters is described 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:

| | |
|--------------------------------|--|
| Reading quizzes | 10% |
| Laboratory and project reports | 30% |
| Midterm exam #1 | 15 |
| Midterm exam #2 | 15% |
| Final Examination | 30% (To be scheduled by the Registrar) |

A passing grade in the lab/projects component of the course is required for a passing grade in the course.

Letter Grade/ Percentage conversions

| | |
|------------|------------|
| A+ 95- 100 | C+ 65- <70 |
| A 90- <95 | C 60- <65 |
| A- 85- <90 | C- 56- <60 |
| B+ 80- <85 | D+ 53- <56 |
| B 75- <80 | D 50- <53 |
| B- 70- <75 | F 0- <50 |

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:** There will be no formal activities outside of class time, but informal project work may go on outside of class time. It is possible that midterm exams may be held during class times but in venues other than the regular classroom, so pay attention.
6. **Course Materials:** The package of required reading materials is sold in the University Bookstore.
7. **Examination Policy:** Exams will be closed-book. Calculators and rulers may be required. 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 and/or project 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) **Misconduct:** 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> [B.1](#) 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 (FOIPPA). 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: 220-3911 Email: suvpaca@ucalgary.ca.
SU Faculty Rep. Phone: 220-3913 Email: sciencerep@su.ucalgary.ca; [Student Ombudsman](#)
 - (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 19, 2014

GEOLOGY 353 Winter 2015 Lecture/Lab Schedule

| | | LECTURES | LABS |
|--------|----|--|--------------------------------------|
| Jan 12 | JO | Surficial Intro: Earthscaping at global scale | |
| 14 | MH | Hydrology Intro: Energy balance, atm, oceans | Orientation lab, field-trip prep |
| 16 | MH | Properties of water, phase changes, vapor pressure, humidity, etc. | |
| | | | |
| 19 | MH | Precipitation, including snow | |
| 21 | MH | " | Field trip: Spyhill, West Nose Crk |
| 23 | MH | Micrometeorology and evaporation | |
| | | | |
| 26 | MH | " | |
| 28 | MH | " | G.P.: Analysis of precipitation data |
| 30 | MH | Soil moisture, interaction w/ plants, animals | Computer is required. |
| | | | |
| Feb 2 | MH | Darcy's law, hydraulic properties of soils and rocks | |
| 4 | MH | " | G.P.: Evaporation using Spyhill data |
| 6 | MH | Aquifers, aquitards, gw flow system | Computer is required. |
| | | | |
| 9 | MH | " | |
| 11 | MH | Hillslope hydrology | Lab: Groundwater |
| 13 | MH | Watershed hydrology | Computer is required. |
| | | | |
| 16 | | READING WEEK | |
| 18 | | READING WEEK | |
| 20 | | READING WEEK | |
| | | | |
| 23 | MH | Water quality issues (Guest lecturer) | |
| 25 | JO | Weathering | G.P.: Watershed water balance |
| 27 | JO | Soils | Computer is required. |
| | | | |
| Mar 2 | JO | " | |
| 4 | JO | Regolith | |
| 6 | JO | " | |
| | | | |
| 9 | JO | " | G.P.: Dichotomous key |
| 11 | JO | Engineering behavior of soils | |
| 13 | JO | " | |
| | | | |

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|-------|-----|------------------------------|---------------------------------|
| 16 | JO | “ | |
| 18 | JO | Mass movement | G.P.: Interpreting eng. soil |
| 20 | JO | “ | |
| | | | |
| 23 | JO | River hydrology and behavior | |
| 25 | JO | “ | G.P.: Analysis of mass movement |
| 27 | JO | “ | |
| | | | |
| 30 | JO | “ | |
| Apr 1 | JO | Glaciers, glaciation | Lab: Calgary flood mapping |
| 3 | | GOOD FRIDAY | |
| | | | |
| 6 | JO | “ | |
| 8 | JO | “ | Field trip: Confluence Park |
| 10 | J,M | Capstone | |
| | | | |
| 13 | J,M | Capstone | |
| 15 | | | |

G.P.: group projects