CAMOSUN COLLEGE
School of Arts & Science
Department of Chemistry and Geoscience

GEOS-100-001
Physical Geology
Fall 2020

COURSE OUTLINE

The course description is online @ http://camosun.ca/learn/calendar/current/web/geos.html

Ω *Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for their records, especially to assist in transfer credit to post-secondary institutions.*

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1. Instructor Information

(a) Instructor	Dr. Leanne Pyle		
(b) Office hours	Monday & Thursday 11:30-12:20 in our Collaborate room, or e-mail to make an appointment		
(c) Location	online		
(d) Phone	please email	**Alternative:**	
(e) E-mail	PyleL@camosun.bc.ca		
(f) Website	D2L		

2. Intended Learning Outcomes

Upon completion of this course the student will be able to:

1. Analyze minerals for common physical properties.
2. Identify common rock-forming minerals on the basis of their properties.
3. Infer how samples of some rocks have formed.
4. Infer the relationship of rock-forming processes to plate tectonics.
5. Describe and interpret textural features of rocks.
6. Describe compositional features of rocks.
7. Classify common rocks based on texture and composition.
8. Apply techniques to determine the chronological order of events in Earth's history.
9. Calculate absolute ages of Earth materials and events.
10. Identify common geologic structures and use symbols to represent such structures on maps.
11. Identify, describe and interpret geological structures in three dimensions.
12. Determine the relationship of geological structures and plate tectonic boundaries.
13. Determine the location of an earthquake from seismic data.
14. Use seismograms to infer relative earth movements on faults.
15. Relate the nature and distribution of major earth features such as mountains, volcanoes and earthquakes to plate tectonics.

3. Required Materials

(a) Free Online Physical Geology Textbook 2nd Edition by Dr. Steven Earle, Thompson Rivers University: **https://opentextbc.ca/physicalgeology2ed/**

(b) Laboratory Manual in Physical Geology, **12th edition** (e-version is available) from Pearson Canada Inc. **If you buy a used copy of the lab manual, make sure that it contains all mineral charts and rock tables in chapters 5, 6 & 7. Also ensure that all templates at the back and figures are still attached such as geo-tools pages. Note that earlier editions of this manual have different exercises, figures and page calls. They are not suitable for doing the labs as too much has changed to be able to answer the intended questions.
(c) Recommended: 4th Canadian Edition Earth: **An Introduction to Physical Geology**, E.J. Tarbuck, F.K. Lutgens, C.J. Tsujita & S.R. Hickock, 2015, 4th ed. Pearson Canada Inc.

4. Course Content and Schedule

(a) Lectures: Monday & Thursday at 8:30-10:00 AM. Review Lecture material on Monday (asynchronously) and meet in online classroom for synchronous lecture on Thursday.
(b) Lab: Wednesday, 8:30AM-11:20PM. Synchronous in online classroom.
(c) Lab attendance is mandatory, and you must pass the lab to pass the course.
(d) Labs are due at the end of each lab or field trip, or by Friday each week if you need more time. Labs require pre-lab preparatory reading as listed in this Syllabus.
(e) Two labs will be based on field trips. These integrate your course learning with field observations and give you practice relating the theory and terminology to real world observations and processes. Signed waivers are required to participate. An assignment done on-site during the field trip will be worth equal credit of one lab.
(f) The schedule on the following page represents the intended sequence of topics.

5. Basis of Student Assessment (Weighting)

(a) Lab and field trip exercises = 25% of the course mark (10 assignments worth 2.5% each).
(b) Quiz #1 & #2 = 10% each = 20%
(c) Discussion Forum Posts = 10% (5 of these worth 2% each)
(d) Term Project and Discussion Presentation = 20%
(e) Final exam, cumulative, as scheduled during final exam period = 25%. Final exam schedules are set by the College and posted on Camlink. You must have a passing grade in the lab portion of the course to be able to write the Final Exam.

6. Grading System

[X] Standard Grading System (GPA)

[ ] Competency Based Grading System

7. Recommended Materials to Assist Students to Succeed Throughout the Course

(Use texts, lab manual and course website links weekly)

8. College Supports, Services and Policies

Immediate, Urgent, or Emergency Support
If you or someone you know requires immediate, urgent, or emergency support (e.g. illness, injury, thoughts of suicide, sexual assault, etc.), **SEEK HELP**. Resource contacts @ http://camosun.ca/about/mental-health/emergency.html or http://camosun.ca/services/sexual-violence/get-support.html#urgent

College Services
Camosun offers a variety of health and academic support services, including counselling, dental, disability resource centre, help centre, learning skills, sexual violence support & education, library, and writing centre. For more information on each of these services, visit the **STUDENT SERVICES** link on the College website at http://camosun.ca/

College Policies
Camosun strives to provide clear, transparent, and easily accessible policies that exemplify the college's commitment to life-changing learning. It is the student's responsibility to become familiar with the content of College policies. Policies are available on the College website at http://camosun.ca/about/policies/. Education and academic policies include, but are not limited to, Academic Progress, Admission, Course Withdrawals, Standards for Awarding Credentials, Involuntary Health and Safety Leave of Absence, Prior Learning Assessment, Medical/Compassionate Withdrawal, Sexual Violence and Misconduct, Student Ancillary Fees, Student Appeals, Student Conduct, and Student Penalties and Fines.

A. GRADING SYSTEMS *http://camosun.ca/about/policies/index.html*

The following two grading systems are used at Camosun College:

1. Standard Grading System (GPA)

Percentage	Grade	Description	Grade Point Equivalency
90-100	A+		9
85-89	A		8
80-84	A-		7
77-79	B+		6
73-76	B		5
70-72	B-		4
65-69	C+		3
60-64	C		2
50-59	D		1
0-49	F	Minimum level has not been achieved.	0

2. Competency Based Grading System (Non GPA)

This grading system is based on satisfactory acquisition of defined skills or successful completion of the course learning outcomes

Grade	Description
COM	The student has met the goals, criteria, or competencies established for this course, practicum or field placement.
DST	The student has met and exceeded, above and beyond expectation, the goals, criteria, or competencies established for this course, practicum or field placement.
NC	The student has not met the goals, criteria or competencies established for this course, practicum or field placement.

B. Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy at

http://camosun.ca/about/policies/index.html for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	*Incomplete*: A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family.
IP	*In progress*: A temporary grade assigned for courses that are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course.
CW	*Compulsory Withdrawal*: A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement.

GEOS 100 Physical Geology Schedule

Week	Lecture Topics	Readings, Activities, Assignments
Sept. 7	Introduction to Earth Science	Open Text Chapter 1; Tarbuck Text Chapter 1 No Lab this week Post in Discussions, Introductions
Sept. 14	Origin of Earth and Earth's Structure Earth Systems Science	Open Text Chapters 1 & 9; Tarbuck Text Chapter 1 Field Trip 1 on Wednesday, September 16th Hand in Field Trip Assignment by Friday
Sept. 21	Minerals: Groups and Identification Igneous Processes and Rocks Geohazards 1: Volcanoes	Open Text Chapters 2,3 4; Tarbuck Text Chapters 2,3 4 Lab 3 in Manual, Minerals Part 1 Hand in Lab 3 Mineral Assignment by Friday
Sept. 28	Weathering Processes and Soils Sedimentary Processes and Rocks	Open Text Chapters 5&6; Tarbuck Text Chapters 5&6 Lab 3 in Manual, Minerals Part 2 Hand in Part 2 Assignment by Friday Post in Activity 1: Everyday Minerals by Friday
Oct. 5	Metamorphic Processes and Rocks Plate Tectonics: How the World Works Geology of BC	Open Text Chapters 7, 10, 21; Tarbuck Text Chapters 7&12 Field Trip 2 on Wednesday, October 7th Hand in Field Trip Assignment by Friday
Oct. 12	Geohazards 2: Earthquakes and Tsunamis	Open Text Chapter 11; Tarbuck Text Chapter 10 Lab 5 in Manual, Igneous Rocks Hand in Lab 5 Assignment by Friday Post in Activity 2: The Great Quake and the Great Drowning
Oct. 19	Geology of the Oceans Building of Continents; Rock Deformation	Open Text Chapter 18&12; Tarbuck Text Chapter 11&13 Lab 6 in Manual, Sedimentary Rocks Hand in Lab 6 Assignment by Friday Term Project Topic due (email idea to Dr. Pyle) Quiz #1
Oct. 26	Geological Time and the Rock Record Earth Science Research	Open Text Chapter 8; Tarbuck Text Chapter 8 Lab 7 in Manual, Metamorphic Rocks Hand in Lab 7 Assignment by Friday Post in Activity 3: Earth Science Information Sources
Nov. 2	Earth History – Precambrian Earth History – Paleozoic Era Earth History – Mesozoic Era Earth History – Cenozoic Era	Open Text Chapter 8; Tarbuck Text Chapter 8 Lab 4 in Manual, Rock Cycle Hand in Lab 4 Assignment by Friday
Nov. 9	Mass Wasting & Landforms Hydrosphere 1: Fluvial Processes Hydrosphere 2: Fluvial Landforms	Open Text Chapter 15&13; Tarbuck Text Chapter 14&15 Lab 8 Fossils & Dating in Manual, Rock Cycle Hand in Lab 8 Assignment by Friday
Nov. 16	Hydrosphere 3: Groundwater Processes Hydrosphere 4: Groundwater Issues	Open Text Chapter 14; Tarbuck Text Chapter 16 Lab 10 in Manual, Geological Maps Hand in Lab 10 Assignment by Friday Post in Activity 4: Floods
Nov. 23	Cryosphere 1: Glacial Processes Cryosphere 2: Glacial Landforms	Open Text Chapter 16; Tarbuck Text Chapter 17 Term Project Written Report & Presentations due in separate Assignment Dropboxes Quiz #2
Nov. 30	Coasts and Sea Level Change Earth's Resources	Open Text Chapter 17&20; Tarbuck Text Chapter 19&20 Post in Activity 5: Global Cities at Risk from Sea Level Rise During Lab Period, Round 1 of Student Presentations
Dec. 7	Geosphere & Climate Change Course wrap-up/summary	Open Text Chapter 19 During Lab Period, Round 2 of Student Presentations