



ORIGINAL COURSE IMPLEMENTATION DATE: January 2009
 REVISED COURSE IMPLEMENTATION DATE: September 2016
 COURSE TO BE REVIEWED: (six years after UEC approval) January 2022
 Course outline form version: 09/15/14

OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

Course Code and Number: GEOG 315	Number of Credits: 4 Course credit policy (105)																
Course Full Title: Soil Process and Function Course Short Title (if title exceeds 30 characters):																	
Faculty: Faculty of Science	Department (or program if no department): Geography and the Environment																
Calendar Description: Soils result from the interface of bedrock and biota regulated by climate. In this course you will learn how soils vary along environmental gradients across the landscape according to physical, chemical, and ecological processes that define key soil horizons. Field trips outside of class time are required. Field trips outside of class time are required.																	
Prerequisites (or NONE):	One of the following: AGRI 204, AGRI 220, BIO 201, BIO 202, BIO 203, BIO 210, BIO 220, CHEM 213, CHEM 214, CHEM 221, CHEM 241, GEOG 201, GEOG 202, GEOG 211, GEOG 219, GEOG 252, or GEOG 253.																
Corequisites (if applicable, or NONE):	None.																
Pre/corequisites (if applicable, or NONE):																	
Equivalent Courses (cannot be taken for additional credit) Former course code/number: N/A Cross-listed with: N/A Equivalent course(s): <i>Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.</i>	Transfer Credit Transfer credit already exists: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Transfer credit requested (OReg to submit to BCCAT): <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No (if yes, fill in transfer credit form) Resubmit revised outline for articulation: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No To find out how this course transfers, see bctransferguide.ca .																
Total Hours: 75 Typical structure of instructional hours: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 5px;"> <tr><td>Lecture hours</td><td style="text-align: center;">26</td></tr> <tr><td>Seminars/tutorials/workshops</td><td style="text-align: center;">15</td></tr> <tr><td>Laboratory hours</td><td style="text-align: center;">15</td></tr> <tr><td>Field experience hours</td><td style="text-align: center;">9</td></tr> <tr><td>Experiential (practicum, internship, etc.)</td><td></td></tr> <tr><td>Online learning activities</td><td style="text-align: center;">10</td></tr> <tr><td>Other contact hours:</td><td></td></tr> <tr><td style="text-align: right;">Total</td><td style="text-align: center;">75</td></tr> </table>	Lecture hours	26	Seminars/tutorials/workshops	15	Laboratory hours	15	Field experience hours	9	Experiential (practicum, internship, etc.)		Online learning activities	10	Other contact hours:		Total	75	Special Topics Will the course be offered with different topics? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, different lettered courses may be taken for credit: <input type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit <i>Note: The specific topic will be recorded when offered.</i> Maximum enrolment (for information only): 25 Expected frequency of course offerings (every semester, annually, every other year, etc.): Every other year
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Experiential (practicum, internship, etc.)																	
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Other contact hours:																	
Total	75																
Department / Program Head or Director: Steven Marsh	Date approved: October 2015																
Faculty Council approval	Date approved: October 2015																
Campus-Wide Consultation (CWC)	Date of posting: November 20, 2015																
Dean/Associate VP: Lucy Lee	Date approved: October 2015																
Undergraduate Education Committee (UEC) approval	Date of meeting: January 29, 2015																

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Show familiarity with soil classification at regional and global scales;
- Assess soil-mediated nutrient cycles and how they support primary productivity and biodiversity;
- Interpret and properly log soil profiles;
- Use relevant data analysis and presentation software;
- Write an advanced laboratory/field report;
- Appreciate the value of soil from different perspectives including indigenous cultures.

Prior Learning Assessment and Recognition (PLAR)

Yes No, PLAR cannot be awarded for this course because

Typical Instructional Methods (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)

Course format will include lectures, discussions, laboratory sessions, field trips, and the use of Blackboard Learn.

Grading system: Letter Grades: Credit/No Credit: Labs to be scheduled independent of lecture hours: Yes No

NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.

Typical Text(s) and Resource Materials (if more space is required, download Supplemental Texts and Resource Materials form)

Author (surname, initials)	Title (article, book, journal, etc.)	Current ed.	Publisher	Year
1. Brady, N.C. & Weil, R.	Elements of the Nature and Properties of Soils (3rd Edition)	<input checked="" type="checkbox"/>	Prentice Hall	2009
2. Carter, M.R. & Gregorich, E.G.	Soil sampling and methods of analysis, 2 nd edition	<input type="checkbox"/>	Taylor and Francis CRC Press	2007
3. Montgomery, D.R.	Dirt: The erosion of civilizations.	<input type="checkbox"/>	University of California Press	2007
4.		<input type="checkbox"/>		
5.		<input type="checkbox"/>		

Required Additional Supplies and Materials (software, hardware, tools, specialized clothing, etc.)

Laboratory and field notebook.

Typical Evaluation Methods and Weighting

Final exam:	20%	Assignments:	%	Midterm exam:	20%	Practicum:	%
Quizzes/tests:	%	Lab assignments:	15%	Field experience:	15 %	Shop work:	%
Lab Report:	25%	Other:	5%	Other:	%	Total:	100%

Details (if necessary):

Typical Course Content and Topics

Tentative lecture schedule

Week Topic

1	Introduction to soil
2	Soil formation
3	Soil classification
4	Physical properties of soil
5	Soil water and the hydrologic cycle
6	Soil air and temperature
7	Soil colloids, acidity, alkalinity, and salinity
8	Ecology of soil
9	Soil organic matter
10	Soil nutrient cycles and soil fertility
11	Practical nutrient management
12	Soil erosion
13	Soil quality and air pollution

Each course offering will include a minimum of eight field or laboratory activities. Examples of such activities include field trips to characterize and describe the diversity of soils around the Fraser Valley and surrounding mountains; use of published soil surveys; and laboratory analysis of the physical, chemical, and biological properties of field-collected samples.