

SOILS 210 Introduction to Soil Science and Soil Resources

3 credits. 14 weeks, 3 hours lecture and 3 hours lab per week

An examination of the elementary aspects of soil formation, soil occurrence in natural landscapes, soil classification, soil resource inventory, basic morphological, biological, chemical and physical characteristics employed in the identification of soils and predictions of their performance in both managed and natural landscapes

Must have completed a university-level course in life or natural sciences. A university-level chemistry course is strongly recommended.

Instructor

Dr. David Smith
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Office Hours

Monday, Tuesday and Thursday 12:00 PM – 12:50 PM
Wednesday and Friday 1:00 PM – 1:50 PM

Hours of Instruction

Lecture: Tuesday 1:00 PM – 2:50 PM
 Thursday 3:00 PM – 3:50 PM
Laboratory: Friday 9:00 AM – 11:50 AM

Required Resources

Brady and Weil. 2010. Elements of the Nature and Properties of Soils, 3rd Edition, Pearson.
13:9780135014332

Thien and Graveel. Laboratory manual for Soil Science. Kendall/Hunt. 9780757550102

Full outdoor apparel for Fall and Winter weather including suitable footwear**Course Outcomes**

The student will be able to:

- Recognize physical properties and functions of soils in relation to other components of the environment.
- Analyze the factors of soil formation and processes of soil development that lead to differences in soils in our environment.
- Use techniques of soil sampling, identification and measurement of soil properties
- Classify soils using the Canadian System of Soil Classification.
- Apply the knowledge gained in sustainable soil management.

Evaluation

Assignments -	25% due one week after each lab
Written report and oral presentation -	15% due week of November 23
Midterm Exam -	25% week of October 12
Final Exam -	35%
Total	100%

A grade of C- is required for progression or transfer.

Grading System

Descriptor	Alpha Grade	4.0 Scale	Percent	Rubric for Letter Grades
Excellent	A+	4.0	> 92.9	Work shows in-depth and critical analysis, well developed ideas, creativity, excellent writing, clarity and proper format.
	A	4.0	85 – 92.9	
	A-	3.7	80 – 84.9	
Good	B+	3.3	77 – 79.9	Work is generally of high quality, well developed, well written, has clarity, and uses proper format.
	B	3.0	74 – 76.9	
	B-	2.7	70 – 73.9	
Satisfactory Progression	C+	2.3	67 – 69.9	Work has some developed ideas but needs more attention to clarity, style and formatting.
	C	2.0	64 – 66.9	
	C-	1.7	60 – 63.9	
Poor	D+	1.3	55 – 59.9	Work is completed in a general way with minimal support, or is poorly written or did not use proper format.
Minimum Pass	D	1.0	50 – 54.9	
Failure	F	0.0	< 50	Responses fail to demonstrate appropriate understanding or are fundamentally incomplete.

Proposed Schedule of Topics**LECTURES AND LABORATORIES, SOILS 210, FALL 2015****All lab assignments will be due 1 week after the lab**

Week of Aug. 31	Introduction, Chapter 1	NO LAB
Week of Sep 7	Soil formation, Chapter 2	Introduction – LAB 1 Soil as a natural resource
Week of Sep 14	Soil classification, Chapter 3	Field Lab – Regosolic Soil Order
Week of Sep 21	Soil classification, Chapter 3	Field Lab – Luvisolic Soil Order
Week of Sep 28	Soil architecture, Chapter 4	Field Lab – Brunisolic Soil Order
Week of Oct 5	Soil architecture, Chapter 4	Field Lab – Organic Soil Order
Week of Oct 12	Soil water, Chapter 5	LAB 2 – Soil texture
Week of Oct 19	Soil aeration and temperature, Chapter 7	LAB 3 Particle size distribution
Week of Oct 26	Soil colloids, Chapter 8	LAB 4 Bulk density and soil porosity
Week of Nov 2	Soil chemistry, Chapter 9	LAB 5 Soil water content
Week of Nov 9	Soil ecology, Chapter 10	NO LAB, Holiday
Week of Nov 16	Organic matter and fertility, Chapters 11 and 12	LAB review session
Week of Nov 23	Erosion, Chapter 14	Oral presentations, written reports due
Week of Nov. 30	Soil quality and pollution, Chapter 15	NO LAB

Please Note:

Date and time allotted to each topic is subject to change. It is your responsibility as a student to contact the Office of the Registrar to complete the forms for Withdrawal or Change of Registration, and any other forms. Please refer to the list of important dates as noted in the Academic Schedule in the Keyano College Credit Calendar.

Performance Requirements**Laboratory Safety**

In the science laboratories, safety is important.

Students must complete the *WHMIS for Students* online training course on Moodle before entering the science laboratories.

Students must comply with the mandatory laboratory safety rules for this course as provided in the laboratory manual. Failure to do so will result in progressive discipline such as a verbal warning, refused entry into the laboratory, or suspension from the College.

Student Attendance

Class attendance is useful for two reasons. First, class attendance maximizes a student's learning experience. Second, attending class is a good way to keep informed of matters relating to the administration of the course (e.g., the timing of assignments and exams). Ultimately, you are responsible for your own learning and performance in this course.

It is the responsibility of each student to be prepared for all classes. Students who miss classes are responsible for the material covered in those classes and for ensuring that they are prepared for the next class, including the completion of any assignments and / or notes that may be due.

Attendance of lectures and laboratories is mandatory and will be monitored and reported to the Chair. Missing two or more labs will result in failure.

Academic Misconduct

Students are considered to be responsible adults and should adhere to principles of intellectual integrity. Intellectual dishonesty may take many forms, such as:

- Plagiarism or the submission of another person's work as one's own
- The use of unauthorized aids in assignments or examinations (cheating)
- Collusion or the unauthorized collaboration with others in preparing work
- The deliberate misrepresentation of qualifications
- The willful distortion of results or data
- Substitution in an examination by another person
- Handing in the same unchanged work as submitted for another assignment
- Breach of confidentiality.

The consequences for academic misconduct range from a verbal reprimand to expulsion from the College. More specific descriptions and details are found in the Student Rights and Student Code of Conduct section of the Keyano College 2015-2016 credit calendar. It is the responsibility of each student to be aware of the guidelines outlined in the Student Rights and Student Code of Conduct Policies.

In order to ensure your understanding of the concept of plagiarism, you must successfully complete the online tutorial found at <https://www.indiana.edu/~istd/>. Then print the certificate, sign it, and show it to each of your instructors. Your course work will not be graded until you show this signed certificate.

Specialized Supports

Counselling and Disability Services

Counselling Services provides a wide range of specialized counselling services to prospective and registered students, including personal, career and academic counselling.

SKILL Centre

The SKILL Centre is a learning space in the Clearwater Campus at Keyano College where students can gather to share ideas, collaborate on projects and get new perspectives on learning from our tutorial staff.

The SKILL Centre, through a variety of delivery methods, provides assistance in skill development to Keyano students. Assistance is provided by instructors, staff and student tutors. Individuals wishing to improve their mathematics, writing, grammar, study, or other skills, can take advantage of this unique service.

Authorization

This course outline has been reviewed and approved by the Program Chair.

Dr. David Smith, Instructor

Louis Dingley, Chair

Date Authorized

Guy Harmer, Dean

Date Authorized

Signed copies to be delivered to:

Instructor

Registrar's Office