

## EESB05 – Principles of Soil Science Fall 2017

**Instructor:** Prof. Adam Martin (adam.martin@utoronto.ca), Room EV 464, office hours Wednesdays 10am-12pm throughout the semester.

**Teaching assistants:** Serra Buchanan (serrawillow.buchanan@mail.utoronto.ca), Zachary Diloreto (zach.diloreto@mail.utoronto.ca)

**Course meetings:**

**Lectures:** Friday 10am-12pm, Room SW309

**Practicals:** Tuesdays 12-3pm **or** 3-6pm in EV 224 (see schedule below)

**Course synopsis:** A study of the chemical, physical, and biological properties of soils; soil formation and development; the classification of soils; the application of soil science to environmental issues; soil responses to environmental change.

**Prerequisites:** EESA01H - Introduction to Environmental Science, **or** EESA06H - Introduction to Planet Earth

**Required reading:** “Elements of the Nature and Properties of Soils” by N.C. Brady and R.R. Weil, 2002, Pearson Publishers. This text is available from the UT Scarborough bookstore and from various sources online; it is also on course reserve.

**Course evaluation:**

Course Item	Date	Percent
Midterm test	Oct. 20 (in class)	30%
Practical #1	see below	15%
Practical #2	see below	15%
Final exam	TBA	40%

**Course content and schedule:**

<b>Week</b>	<b>Lecture</b>	<b>Lecture topic</b>	<b>Readings</b>	<b>During this week</b>
1	Sept. 8	Course introduction	Chapter 1	
2	Sept. 15	Origin of soils & taxonomy	Chapters 2 & 3	½ Guest lecture
3	Sept. 22	Soil physical properties	Chapter 4	½ Guest lecture
4	Sept. 29	Soil water	Chapter 5	Practical 1 (Groups 1 & 2)
5	Oct. 6	Soil porosity	Chapter 7	Practical 1 (Groups 3 & 4)
	<b>Oct. 13</b>	<b>Reading week</b>	<b>NA</b>	
6	Oct. 20	Midterm test	NA	Midterm (in class)
7	Oct. 27	Soil chemical properties	Chapter 8	
8	Nov. 3	Soil acidity	Chapter 9	
9	Nov. 10	Soil biology & organic matter	Chapters 10 & 11	Practical 2 (Groups 1 & 2)
10	Nov. 17	Soil-plant relationships	Chapters 12 & 13	Practical 2 (Groups 3 & 4)
11	Nov. 24	Soil and plant nutrients; Course review part 1	NA	
12	Dec. 1	Course review part 2	NA	

**Practical content and schedule:**

<b>Practical</b>	<b>Practical topic</b>	<b>Lab date</b>	<b>Due Date</b>
1	Physical properties: particle size, soil water, bulk density	Sept. 26 <b>or</b> Oct. 3	Oct. 3 <b>or</b> Oct. 16
2	Chemical properties: cation exchange capacity, pH	Nov. 7 <b>or</b> Nov. 14	Nov. 14 <b>or</b> Nov. 21

**Notes on exams:** Both the midterm and final exam will draw from lecture and practical materials and includes lecture notes, and any material presented in the classroom that may or may not be posted on Blackboard. Information from the textbook and other resources not directly covered in class or in the practicals will not be tested on exams.

**Midterm test:** A mid-term test will be held in class on Friday October 20th. The test will consist of multiple-choice, short answer questions, and some calculations. It will be worth 30% of your final grade. **Make-ups will not be given for the mid-term test.** If you miss the test for a verifiable reason (as indicated by a doctor's note), the weight of the midterm will be added to the weight of your final exam, with the permission of the instructor.

**Final exam:** A comprehensive final exam covering the entire course material will be given during UTSC examination period worth 40% of your final grade.

### **Course policies**

**Attendance and penalties for late work:** Practical attendance is mandatory. Students who do not collect their own data during the practical session will *not* be allowed to submit the associated practical assignment for grading, and will automatically receive a grade of zero. TAs will be making note of absent students. Late assignments will not be accepted and assigned a grade of zero.

**Plagiarism:** Plagiarism is a serious academic offence. Please read the faculty's guidelines on plagiarism. Do not hesitate to consult with your instructor or TA about strategies that you can use to avoid being accused of plagiarism.

**Email contact, office hours, and communication:** The course instructor will send out important course information by email. Therefore all students are required to have a valid UTSC email address. You are also responsible for ensuring that your UTSC email address is set up and properly entered in the ROSI system.

That said my preference is to meet with you in person. My designated office hours are a block of time in which I am available to discuss with you lecture material, the nature of the exams, the Environmental Science program at UTSC, graduate school, career interests, and/ or the state of the world in general. It is time set aside for you – please take advantage of it. My door is open.

You may also email me questions about course material. I will make an effort to respond to you within 24 hours during weekdays. My responses will take longer during weekends because I deliberately remain offline. **Email should not be a substitute to office hours.** Again, I encourage you to make use of the instructor's office hours.  
**Course website – Blackboard:** EESB05 uses Blackboard as its course website. To access the EESB05 website go to the U of T portal login page at (<http://portal.utoronto.ca>) and log in using your UTORid and password. Once you have logged in to the portal, look for your course modules where you'll find the link to the EESB05 course website.

As a courtesy, I will be posting class notes on the course Blackboard site. Please note that I am under no obligation to do so, and that such notes are intended to assist you in, and not replace, your personal notes.

**Class conduct:** This is a large class. I remind you that cell phones and other communication devices must be turned off or in silent mode. A 10-minute break after 50 minutes of lecture will be provided each lecture period. Taking photos, audio and/or video recordings are not allowed unless permission from the instructor is granted.

**Accessibility statement:** Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodation, please feel free to approach me and/or Accessibility Services Office as soon as possible. I will work with you and Accessibility Services to ensure you can achieve your learning goals in this course. Enquires are confidential. The UTSC Accessibility Services staff (located in S302) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations [416-287-7560 or [ability@utsc.utoronto.ca](mailto:ability@utsc.utoronto.ca)]

**The Writing Centre:** The Writing Centre is a free service that provides support for teaching and learning through writing for all UTSC students. The Writing Centre provides service such as one-on-one consultation, drop-in hours, English language development and writing clinics. They are located in AC 210, in the Academic Resource Centre.

**Health and Wellness Clinic:** The Health & Wellness Centre has trained health professionals to provide medical, nursing, counseling, health promotion, and education services to University of Toronto Scarborough students. Any student with a current student card and a valid health card can use our services. They are located in the Student Centre, UTSC, SL 270.