Instructor: Prof. Marney Isaac  
Office: EV462  
Email: marney.isaac@utoronto.ca  
TA’s: Serra Buchanan, Zachary Diloreto  
Office hours: Wednesday 10-11am

LECTURES: Fridays: 10am-12pm in room IC230
PRACTICALS: Tues: 12-3pm or 3-6pm in EV224 starting October 1st

COURSE DESCRIPTION

A study of the chemical, physical and biological properties of soils, soil formation and development, the classification of soils and the application of soil science to environmental issues and their response to environmental change.

PREREQUISITES

EESA01H - Introduction to Environmental Science or  
EESA06H - Introduction to Planet Earth

REQUIRED READING (available at the UTSC bookstore):

“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 on the internet. It is also on course reserve.

COURSE LAYOUT

<table>
<thead>
<tr>
<th>Lecture</th>
<th>Date</th>
<th>Lecture topic</th>
<th>Readings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sept. 6</td>
<td>Introduction</td>
<td>Chapter 1</td>
</tr>
<tr>
<td>2</td>
<td>Sept. 13</td>
<td>Origin of soils/taxonomy</td>
<td>Chapter 2 &amp; Chapter 3</td>
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<tr>
<td>3</td>
<td>Sept. 20</td>
<td>Soil physical properties</td>
<td>Chapter 4</td>
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<tr>
<td>4</td>
<td>Sept. 27</td>
<td>Soil water</td>
<td>Chapter 5</td>
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<tr>
<td>5</td>
<td>Oct. 4</td>
<td>Soil porosity</td>
<td>Chapter 7</td>
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<tr>
<td>6</td>
<td>Oct. 11</td>
<td>Midterm</td>
<td></td>
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<tr>
<td>Date</td>
<td>Topic</td>
<td>Chapter</td>
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<tr>
<td>Oct. 18</td>
<td>Reading week</td>
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<tr>
<td>7</td>
<td>Oct. 25 Soil chemical properties</td>
<td>Chapter 8</td>
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<tr>
<td>8</td>
<td>Nov. 1 Soil acidity</td>
<td>Chapter 9</td>
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<td>9</td>
<td>Nov. 8 Soil biology &amp; organic matter</td>
<td>Chapter 10 &amp; 11</td>
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<tr>
<td>10</td>
<td>Nov. 15 Soil-plant relationship</td>
<td>Chapter 12 &amp; 13</td>
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<tr>
<td>11</td>
<td>Nov. 22 Tropical soils &amp; soil management</td>
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<tr>
<td>12</td>
<td>Nov. 29 Review</td>
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**PRACTICALS**

<table>
<thead>
<tr>
<th>Practical</th>
<th>Date</th>
<th>Practical topic</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Oct 1st or Oct 8th</td>
<td>Soil physical properties – texture, porosity and bulk density</td>
</tr>
<tr>
<td>2</td>
<td>Oct 29th or Nov 5th</td>
<td>Soil chemical properties – CEC and pH</td>
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</tbody>
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**COURSE WORK AND EVALUATION**

The evaluation scheme is designed to meet the objectives of this course. Comprehension of the lecture material and readings, in both general and specific form, will be evaluated by the mid-term and final exam. Analytical skills will be evaluated with two practicals. Weights are as follows:

\[
\text{Practicals (15\% \times 2) = 30\%} \\
\text{Mid-term = 30\%} \\
\text{Final = 40\%}
\]

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.

**Mid-term test**

A mid-term test will be held in class. The test will consist of multiple-choice, short answer questions and some calculations and 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 (i.e. Doctor’s note), the weight of the mid-term will be added to the weight of your final exam with the permission of the instructor.

**Final Exam**

A comprehensive final exam will be given during UTSC examination period worth 40\% of your final grade.
Practicals

Please see the Practicals Instruction Sheet, which will be made available before the first practical, for a detailed description of topics and methods.

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 an assignment for grading and automatically will 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.

Office hours

I, the instructor, am available for one office hour per week. You are invited to attend office hours to discuss the lecture material, the nature of the final exam, the Environmental Science program at UTSC and/or the state of the world in general. This time is dedicated to your interests and questions, so please make use of it. The teaching assistants in this course also provide office hours for you, and your questions and your interests. I encourage you to make full use of this time.

Email contact

I will answer emails concerning this course on Tuesday and Friday afternoons. This is to encourage you to make use of both the instructors and the TA office hours. Tutorials will not be given over email. At times, I may decide to send out important course information by email. All UTSC students are required to have a valid UTSC email address. You are responsible for ensuring that your UTSC email address is set up. Emails originating from accounts other than UTSC or UT will not be answered.

Course website - Quercus

EESB05 uses Quercus for 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 using your UTOid and password, look for course modules, where you’ll find the link to the EESB05 course website.
RESOURCES

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 AccessAbility Services Office as soon as possible. I will work with you and AccessAbility Services to ensure you can achieve your learning goals in this course. Enquires are confidential. The UTSC AccessAbility 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]

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, counselling, 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.

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.