EESB05H – PRINCIPLES OF SOIL SCIENCE DEPARTMENT OF PHYSICAL AND ENVIRONMENTAL SCIENCES UNIVERSITY OF TORONTO SCARBOROUGH Fall 2024

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Office hours: Wednesdays 10-11 am

LECTURES: Fridays 10 am-12 pm

PRACTICALS: Tuesday 9 am-12 pm or 12-3 pm or 3-6 pm starting Sept. 24th

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.

LEARNING OUTCOMES

Know how soils are formed and what causes them to be so different from one another.

Describe the physical, chemical, and biological properties of soils and their importance.

Know why and how to manage soils.

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 on the internet. It is also on course reserve.

COURSE LAYOUT

Lecture	Date	Lecture topic	Readings
1	Sept. 6	Introduction	Chapter 1
2	Sept. 13	Origin of soils/taxonomy	Chapter 2 & Chapter 3
3	Sept. 20	Soil physical properties	Chapter 4
4	Sept. 27	Soil water	Chapter 5
5	Oct. 4	Soil porosity	Chapter 7
6	Oct. 11	In-class activity	
	Oct. 18	Mid-term	
7	Oct. 25	Soil chemistry & acidity	Chapters 8 & 9
	Nov. 1	Reading week	
8	Nov. 8	Soil biology & organic matter	Chapters 10 & 11
9	Nov. 15	Soil-plant relationship	Chapters 12 & 13
10	Nov. 22	Tropical soils & soil management	
11	Nov. 29	Review	

PRACTICALS

Practical	Date	Practical topic
1	Sept. 24 th & Oct. 1 st	Soil physical properties – texture, porosity and bulk density
2	Nov. 5 th & Nov. 12 th	Soil chemical properties – cation exchange capacity and pH

Section	Time	Practical 1 date	Practical 2 date
P0001	12-3 pm	Sep 24	Nov 5
P0002	3-6 pm	Sep 24	Nov 5
P0005	9 am-12 pm	Sep 24	Nov 5
P0003	12-3 pm	Oct 1	Nov 12
P0004	3-6 pm	Oct 1	Nov 12

Email contact

I will answer emails concerning this course in a timely manner. I encourage you to make use of both the instructor's and the TAs' office