

**Microbial Biogeochemistry: EESC30 - 2013 Winter Term**  
**University of Toronto at Scarborough**  
**COURSE OUTLINE**

Location: Lectures, HW214, Fridays 1-3 pm  
Instructor: Prof. R. Fulthorpe, Rm. SY348  
TA: Nicole Ricker  
E-mail: [fulthorpe@utsc.utoronto.ca](mailto:fulthorpe@utsc.utoronto.ca)  
E-mail for Nicole: eesc30@gmail.com

**Description**

This course examines the diversity of microorganisms, their adaptations to special habitats, and their role in the ecosystem and geochemical cycling. Other topics include microbial phylogeny, physiological diversity, species interactions and state of the art methods of detection and enumeration.

Exclusion: ([BGYC55H](#))

Prerequisite: [CHMA10H](#) & [CHMA11H](#) & [BGYB50H](#) & [BGYB51H](#)

**Textbook:** None. Readings provided via intranet.

DATE	LECTURE
January 11	Microbial diversity
January 18	Finding Energy and Carbon
January 25	Adaptations to Extremes
February 1	Biotic Interactions I
February 18	Biotic Interactions II
February 15	MIDTERM
<b>February 23</b>	<b>READING WEEK</b>
March 1	Biodegradation and Bioremediation
March 8	Microbes in Soil
March 15	Microbes in Freshwater
March 22	Marine Microbes
April 5	Metagenomics
April 8	Overview and Review

**Evaluation**

Assignment	10%
Midterm	25%
Participation	5%
Group seminar	25%
Final Exam	35%

**Assignment:**

Each student will be assigned the name of a particular microorganism. Your task will be to 1) Determine the phylogenetic position of the organism, i.e. which domain, phylum, class, order and family it belongs in; 2) To find out its ecological niche and 3) To find a recent primary literature article on some aspect of the organism. Microbe names will be given out on January 15<sup>th</sup>, and the assignment will be due on February 5<sup>th</sup>. Nicole will give more direction for this assignment in the first tutorial on January 15<sup>th</sup>.

**Seminar:**

There are many applied microbiology topics of interest that we will not have time to cover in class. Students are required to research and present one of these topics in the form of a presentation, to the class, during one of the tutorial sessions of the second half of term. Students should organise into groups of three and choose one of the topics, or another of their interest with my approval, below.

Topics will be posted January 18<sup>th</sup>. Groups must submit their top three topic choices to Nicole by January 29<sup>th</sup>. Your TA will organise the seminar presentation schedule and instruct you on format and content guidelines. You will be expected to attend the seminar sessions and hand in point form summaries of each presentation (for your participation marks).