UNIVERSITY of TORONTO at SCARBOROUGH *January 2014*
Department of Physical & Environmental Sciences

Course Syllabus

EESA11H3S – ENVIRONMENTAL POLLUTION

This course provides students an introduction to issues related to environmental pollution, with emphasis on causes, pathways, risks, mitigation and prevention. By the end of this course, students will have a good understanding of the dynamic nature of human-environment relationships, and the multidimensional characteristics of environmental pollution, through the use of Canadian and international examples. Special emphasis will be placed on issues related to eutrophication phenomena, exotic species invasions, and water quality/fisheries management.

Instructor: **Maria Dittrich** **Office:** SY346 **Tel:** (416) 208-2786

Lectures: Thursday 5 pm - 7 pm **Room:** AA 112

Office hours: Thursday 12:00-15:00 h SY 346

I will NOT respond to e-mails, please use BLACKBOARD FORUM

A weekly handout will be given and the lectures will be posted on the web.

Course Grade:

Final Examination	**60 %**
Mid-Term Test	**40 %**

Prerequisites: No prior knowledge of environmental science is required.

N.B. ***Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the Access*Ability** ***Services Office as soon as possible. The UTSC Access*Ability** ***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 sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.***

TENTATIVE COURSE OUTLINE

Jan 9	**ORIENTATION**
Lecture 1	Course Outline
	UNDERSTANDING POLLUTION
	Global pollution and global environmental health
Jan 16	**GLOBAL CLIMATE CHANGE**
Lecture 2	A warming Earth; Greenhouse gases and their sources
Jan 23	**ACIDIC DEPOSITION**
Lecture 3	Acid pollutants
	Sources of acid precursors
Jan 30	**AIR POLLUTION**
Lecture 4	Criteria air pollutants; Hazardous air pollutants
	Pollution from space
	Air pollution in less-developed countries
Feb 6	**STRATOSPHERIC-OZONE DEPLETION**
Lecture 5	The stratosphere and ozone Antarctica
	Consequences of ozone depletion
	Ozone-depleting pollutants
	Reducing atmospheric levels of ozone-depleting substances
Feb 13	**STRATOSPHERIC-OZONE DEPLETION**
Lecture 6	The stratosphere and ozone Antarctica
	Consequences of ozone depletion
Feb 20	**READING WEEK: NO CLASSES**
Feb 27	**MIDTERM EXAM**
Mar 6	**WATER POLLUTION-EUTROPHICATION**
Lecture 7	Basic Concepts of Eutrophication
	Food Web Structure
	Natural and Cultural Processes of Eutrophication
	Relationships among Nutrients, Water Clarity, and Phytoplankton
Mar 13	**WATER POLLUTION-EUTROPHICATION**
Lecture 8	Examples of eutrophication
	Gulf of Mexico
	Chesapeake Bay and Neuse River Estuary
	Baltic Sea, Black Sea, Lake Nyos
Mar 20	**GREAT LAKES ECOLOGY-FOOD WEB DYNAMICS**
Lecture 9	Great Lakes Water Quality Agreement
	Eutrophication problems
	Invasive Species/Quiz 2
Mar 27	**POLLUTANTS IN GREAT LAKES**
Lecture 10	Toxic Substances, Sources of Contaminants
	The Fate of Contaminants
	Toxicity and Its Prediction, Bioaccumulation and Biomagnification,
Apr 3	**DRINKING-WATER POLLUTION**
Lecture 11	Primary drinking water standards
	Pathogens, Arsenic
	Secondary-drinking water standards: human waste

READINGS

The required textbook for this course is:

Hill, Marquita K. (2010). *Understanding Environmental Pollution (2nd Ed. resp. 3rd Edition).* New York: Cambridge University Press.

Specific readings will also be given out for some lectures.

UTSC Portal

Many announcements (such as the weekly readings or any changes to the lecture schedule) will be made on the course "blackboard page". To access this, you need to sign up for a UTSC account. The page is located at https://portal.utoronto.ca. Please check this site at least once per week, as it will be updated frequently.