**COURSE OVERVIEW**

**COURSE DESCRIPTION**

Cities are “problems in organized complexity” (Jacobs, 1961). This course explores this theme and its implications for city engineering and management in terms of: introduction to complex systems theory; exploration of cities as systems of systems (physical, economic, social, etc.); holistic and reductionist approaches to “a science of cities”; approaches to city planning and design in the face of complexity; challenges to sustainable design; and decision-making under uncertainty.

**INSTRUCTOR**

Prof. E.J. Miller, Department of Civil Engineering

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**Teaching Assistant**

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**TIMETABLE:** Mondays, 10:00-12:00, GB117

# COURSE WEB SITE

# This course uses the Quercus system. Please log in and register as soon as possible. Note that you must use your utoronto.ca e-mail address to receive messages from this web site. Instructions concerning accessing the course web site are attached to this outline. Lecture notes are posted on the course web site (Modules/Lectures). A copy of this course outline is also available on the web site (Modules/Course Documents/Course-Outline.pdf).

**READINGS**

***Textbook:***

Donella H. Meadows, *Thinking in Systems: A Primer*, edited by Diana Wright

Chelsea Green Publishers, White River Junction, Vt. (paper copy)

Earthscan, London, 2008 (pdf)

Available for download from:

<http://www.ecf.utoronto.ca/~miller/Meadows_2008_Thinking-in-Systems.pdf>

The list of suggested readings is posted on the course web site. Many of these readings can be downloaded from: http://www.ecf.utoronto.ca/~miller/CEM1004\_Readings.zip

**LECTURE SCHEDULE**



**ASSIGNMENTS**

The course grade is based on five assignments, as described in the table below. Failure to submit one or more assignments will result in a grade of “Incomplete” for the course. Late assignment submissions will not be reviewed and will receive a grade of zero. Assignments may be downloaded from the course website (Modules/Assignments).

***Assignment Schedule***



**FROM THE CODE OF BEHAVIOUR ON ACADEMIC MATTERS**

“It shall be an offence for a student knowingly … to represent as one's own any idea or expression of an idea or work of another in any academic examination or term test or in connection with any other form of academic work, i.e. to commit plagiarism. Wherever in the Code an offence is described as depending on “knowing”, the offence shall likewise be deemed to have been committed if the person ought reasonably to have known.”

**WRITING AIDS**

Several documents providing guidance on technical report writing can be downloaded from the course web site (Modules/Course Documents/Writing Aids.zip).