**School of Engineering**
**University of Guelph**

# ENGG*2550 WATER MANAGEMENT

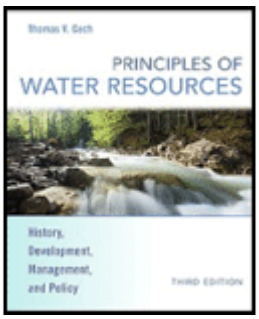
## Course Description & Outline - Winter 2010

### CALENDAR DESCRIPTION

The influence of fundamental engineering and hydrologic principles on the choices available for management of water on a watershed basis is demonstrated for representative techniques used in management for water supply, irrigation, flood control, drainage and water pollution control. Selected problems are studies to reveal the technical, environmental, legal, jurisdiction, political, economic and social aspects of water management decisions.

### TEXTBOOK

Title: Principles of Water Resources: History, Development, Management, and Policy. 3rd Edition
Publisher: John Wiley & Sons, Inc.
Author: Cech, Thomas V. 2009.
ISBN: 0-471-48475-X
Available at the University of Guelph Bookstore




### INSTRUCTOR

Dr. Zoe Zhu
Office: Room 307, Reynolds
Telephone: (519)824-4120 Ext. 52972
Office Hours: Wednesday 9:00- 12:00 am or by appointment
Email: jizhu@uoguelph.ca
www: http://www.uoguelph.ca/~jizhu/

### LECTURE TIMES & LOCATION

Tuesday 2:30-3:50pm MACK 313
Thursday 2:30-3:50pm MACK 313

## COURSE OBJECTIVES:

At the successful completion of this course, the student will have demonstrated:

- An appreciation of watershed management principles and techniques
- The ability to identify and discuss the multiple dimensions of global water management issues
- The ability to perform quantitative analyses of water resources – groundwater, lakes, rivers, wetlands – and the effects of human activities on these water resources
- Knowledge of the tools and techniques used in water management and the ability to apply this knowledge to develop solutions to water management challenges
- An understanding of Ontario's legislative framework for water management

## MARK DISTRIBUTION:

| | |
|---|---|
| Webpage | 10% |
| Research Report +In Class Presentation | 15% |
| Quizzes | 20% |
| Midterm | 15% |
| Final Examination: | 40% |
| | 100% |

## FINAL EXAMINATION:

Date, time and location to be announced.

## COURSE MATERIAL TO BE COVERED

| Week | Date | Lecture Topic |
|---|---|---|
| 1 | Jan 11 to Jan 15 | The Hydrologic Cycle |
| 2 | Jan18 to Jan22 | Surface Water Hydrology |
| 3 | Jan25 to Jan29 | Groundwater Hydrology |
| 4 | Feb 1 to Feb 5 | Water Quality |
| 5 | Feb 8 to Feb 12 | Municipal and Irrigation Water Development |
| ***** | Feb 15 to Feb 19 | Winter break: no classes scheduled this week |
| 6 | Feb22 to Feb 26 | Dams |
| 7 | Mar 1 to Mar 5 | Water Allocation Law |
| 8 | Mar 8 to Mar 12 | Water Management Agencies |
| 9 | Mar 15 to Mar 19 | Drinking Water and Wastewater Treatment |
| 10 | Mar 22 to Mar 26 | Water, Fish and Wild life |
| 11 | Mar 29 to Apr 2 | The Economic of Water |
| 12 | Apr 5 to Apr 9 | Water and Our Future |

## QUIZZES:

In total, four quizzes will be given according to the schedule shown in the following table. Each quiz is valued 5% of the total marks and the 4 quizzes combined are valued 20% of the total marks.

| Week | Date | Quizzes |
|---|---|---|
| Week 4 | TUE FEB. 2 | Quiz 1 |
| Week 6 | TUE FEB. 23 | Quiz 2 |
| Week 8 | TUE MAR. 9 | Quiz 3 |
| Week 10 | TUE MAR. 23 | Quiz 4 |

## TERM PROJECT

Each group will complete a term project valued at 15% of the total mark, including 10% for the report itself and 5% for presentation of the project in class. A range of topics, methodology, software and data will be provided and discussed. The due date for submission of the hard copy of the report is Thursday April 1st at midnight, email to: zoe@cis.uoguelph.ca. However, the presentations (15-min per group) are scheduled as indicated in the following table.

| Week | Date | In Class Presentation |
|---|---|---|
| Week 11 | THU Apr. 1 | Group 1 to 4 |
| Week 12 | TUE Apr. 6 | Rest of Group |

## UNIVERSITY POLICY ON ACADEMIC MISCONDUCT

Academic misconduct, such as plagiarism, is a serious offence at the University of Guelph. Please consult the Undergraduate Calendar and School of Engineering programs guide, for offences, penalties and procedures relating to academic misconduct.
http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-amisconduct.shtml

## DISCLAIMER

The instructor reserves the right to change any or all of the above in the event of appropriate circumstances, subject to University of Guelph Academic Regulations