

## **WRM 400 Water Resource Management**

### **Course Description**

WRM 400 is one of the required foundation courses of the Certificate in Water Resource Management. It provides a critical overview of water issues with particular reference to the connections between water and broad economic activities and social goals such as food production, energy, transboundary water conflicts and co-operation, and human health. This approach reflects the need for a more holistic environmental management paradigm and governance structures. The impacts of climate change, population growth and economic and social development on water resources will be a key theme raised throughout the term as will the varying challenges facing developed and developing countries.

### **Readings**

There is no required text. All readings will be accessed through the University of Toronto's library or other online sites. The course will make use of online audiovisual material, such as YouTube videos, when available as well.

### **Course Assignments and Evaluation**

The grade you obtain from this course will depend on your writing ability, critical thinking ability and participation in the discussion forums, live chats, and assignments.

### **Overall assessment**

This course requires that you maintain 70% or greater in the course work for continuation in the course. There is an expectation for a high level of quality in the work produced by the student. For evaluation purposes, work will be graded under the following criteria:

### **Distance Education Certificate Program Grade Scale**

Letter Grade Scale	Numerical Scale of Marks
A +	90-100%
A	85-89%
A -	80-84%
B+	77-79%
B	73-76%
B-	70-72%
FZ	0-69%

### Student Obligations

a) Students are expected to participate "in class" every week. Participation counts for your overall mark and will be based on regular contributions to all discussions, so do participate. Rubrics on the measure of quantity and quality of your participation in the discussion forum will be used for evaluation.

Promptness and Initiative	Does not respond to most postings; rarely participates freely	Responds to most postings several days after initial discussion; limited initiative	Responds to most postings within a 24 hour period; requires occasional prompting to post	Consistently responds to postings in less than 24 hours; demonstrates good self-initiative
Delivery of Post	Utilizes poor spelling and grammar in most posts; posts appear "hasty"	Errors in spelling and grammar evidenced in several posts	Few grammatical or spelling errors are noted in posts	Consistently uses grammatically correct posts with rare misspellings
Relevance of Post	Posts topics which do not relate to the discussion content; makes short or irrelevant remarks	Occasionally posts off topic; most posts are short in length and offer no further insight into the topic	Frequently posts topics that are related to discussion content; prompts further discussion of topic	Consistently posts topics related to discussion topic; cites additional references related to topic
Expression Within the Post	Does not express opinions or ideas clearly; no connection to topic	Unclear connection to topic evidenced in minimal expression of opinions or ideas	Opinions and ideas are stated clearly with occasional lack of connection to topic	Expresses opinions and ideas in a clear and concise manner with obvious connection to topic
Contribution to the Learning Community	Does not make effort to participate in learning community as it develops; seems indifferent	Occasionally makes meaningful reflection on group's efforts; marginal effort to become involved with group	Frequently attempts to direct the discussion and to present relevant viewpoints for consideration by group; interacts freely	Aware of needs of community; frequently attempts to motivate the group discussion; presents creative approaches to topic

### Forum Etiquette

In discussion forums, remember to *think, discuss, and debate* from a multitude of perspectives. Both the instructor and the student will use language that is scholarly and professional. Express yourself *clearly, accurately, and in an intellectual* rather than in a personal fashion. Discussion forums are designed for you to ask questions and gain further knowledge. Remember to reason intelligently with the instructor and other students. Please feel free to give your view or interpretation based on your own experiences.

Develop *awareness* of your own ethnocentrism and make conscious efforts to ameliorate it. Keep in mind that the

course materials will come from a wide cross-section of fields of study and may use jargon that is not familiar to you. Seek to understand the subtleties of these new terms to gain a deeper understanding of the material being presented. Please ask about concepts or terms that you do not understand.

Remember, if you have a question, it is likely someone else has the same question. Also, be conscious of the language you use when you speak about race, ethnicity, and gender. And be careful to avoid any bigoted or exclusive language.

Students who express themselves *inappropriately* or attack others personally in the discussion forums will lose their points for participation, and possibly their privilege to continue. Most students are considerate and respectful of others, but every now and then, someone is abusive and it ruins the experience for everyone.

### **Synchronous Discussions (Chats)**

The synchronous live chats will involve scheduled times for the class to meet on-line together to review questions related to the readings, and to provide a more informal basis to discuss concerns and questions over material as it relates to current world situations. You may also find the live chat area useful when working with other students on assignments - please feel free to do so.

### **Module Breakdown**

Module 1 – Introduction to water resource management.

This module will examine the need for water resource management, as well as its scope and purpose. The broad challenges facing water resources management, i.e. reasons increasing demands, will be introduced.

Module 2 – Water and global climate change

In this module, we will examine the impacts climate change is expected to have on water resources and the implications of this for water resource management from both an ecological and human well-being perspective.

Module 3 – Water and food

This module will examine issues related to food production and water use. There will be a focus on irrigation.

Module 4 – Water and health

Using examples from Canada, for example Aboriginal communities, and further afield, this module examples topics such as community water supplies and sanitation.

Module 5 – Water and energy

In this module the concept of a water-energy nexus will be explored. We will discuss the ways in which our development of renewable energy may place new demands on water resources as well as issues related to traditional energy resources, such as oil.

Module 6 – Water quality management

This module will cover alternative policies, demand management, privatisation, financial issues related to water management and so forth.

Module 7 – Conflict and cooperation

Water allocation and transboundary management of water resources will be discussed. We will draw on examples of international rivers and the Great Lakes, looking at successes and failures. Water exports, in the context of international trade agreements, will also be introduced.

Module 8 – Water as a hazard

Floods, droughts, water-borne diseases and toxic spills will be discussed in this module.

Module 9 – Groundwater

The special management issues related to groundwater resources will be introduced.

Module 10 – Review and emerging global and Canadian water issues

In this final module, we will reflect on the course material and introduce some final thoughts related to worldviews and water, for example environmental justice, politics and the development of new water ethics.