

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

Course Code and Number: GEOG 318

Number of Credits: 4 [Course credit policy \(105\)](#)

Course Full Title: Water Resources Management  
 Course Short Title:

Faculty: Faculty of Science

Department (or program if no department): Geography and the Environment

### Calendar Description:

This course examines the issues surrounding water as a global resource and the scientific principles involved in water resources management. Emphasis is placed on the understanding of the role that water as a resource has within our societies, including our perception of water as a resource, contamination of water, treatment of water, and possible impacts on water supply resulting from climate change. Field trips outside of class time may be required. Please refer to department website for field trip scheduling information.

**Prerequisites (or NONE):** One of the following: GEOG 201, GEOG 202, GEOG 211, GEOG 219/BIO 219, GEOG 257/CMNS 257, or GEOG 311.

**Corequisites (if applicable, or NONE):** None.

**Pre/corequisites (if applicable, or NONE):** None.

### Equivalent Courses (cannot be taken for additional credit)

Former course code/number:

Cross-listed with:

Equivalent course(s):

*Note: Equivalent course(s) should be included in the calendar description by way of a note that students with credit for the equivalent course(s) cannot take this course for further credit.*

### Transfer Credit

Transfer credit already exists:  Yes  No

Transfer credit requested (OREg to submit to BCCAT):

Yes  No (Note: If yes, fill in transfer credit form)

Resubmit revised outline for articulation:  Yes  No

To find out how this course transfers, see [bctransferguide.ca](http://bctransferguide.ca).

**Total Hours: 60**

### Typical structure of instructional hours:

Lecture hours	40
Seminars/tutorials/workshops	
Laboratory hours	
Field experience hours	20
Experiential (practicum, internship, etc.)	
Online learning activities	
Other contact hours:	
<b>Total</b>	<b>60</b>

### Special Topics

Will the course be offered with different topics?

Yes  No

If yes,

Different lettered courses may be taken for credit:

No  Yes, repeat(s)  Yes, no limit

*Note: The specific topic will be recorded when offered.*

**Maximum enrolment (for information only): 28**

**Expected frequency of course offerings**  
(every semester, annually, etc.): Annually

Department / Program Head or Director: Michelle Rhodes

Date approved: October 3, 2013

Campus-Wide Consultation (CWC)

Date of posting: March 28, 2014

Faculty Council approval

Date approved: May 2, 2014

Dean/Associate VP: Lucy Lee & Jaqueline Nolte

Date approved: April 11, 2014

Undergraduate Education Committee (UEC) approval

Date of meeting: June 20, 2014

**Learning Outcomes**

Upon successful completion of this course, students will be able to:

1. Critically discuss the nature of water as a global resource.
2. Collect, analyze, and present watershed and water quality data in written and graphical form.
3. Provide detailed written and verbal analysis of the threats to water resources.
4. Explain the characteristics of surface and groundwater resources.
5. Identify and critically discuss sustainable water management practices for different socio-spatial contexts.

**Prior Learning Assessment and Recognition (PLAR)**

Yes     No, PLAR cannot be awarded for this course because

**Typical Instructional Methods** (guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion)

**NOTE: The following sections may vary by instructor. Please see course syllabus available from the instructor.**

**Typical Text(s) and Resource Materials (if more space is required, download supplemental Texts and Resource Materials form)**

<u>Author Surname, Initials</u>	<u>Title (article, book, journal, etc.)</u>	<u>Current Edition</u>	<u>Place of Publication</u>	<u>Year Published</u>
1. Artiola, J. F., Pepper I. L., and Brusseau M.	Environmental Monitoring and Characterization	<input type="checkbox"/>	Elsevier, London	2004
2. De Villiers, M.	Water	<input type="checkbox"/>	Stoddart, Toronto	1999
3. Fagan, B.	Elixir. A history of Water and Humankind	<input type="checkbox"/>	New York	2011
4. Gordon, N.D., et al.	Stream Hydrology. An Introduction for Ecologists	<input type="checkbox"/>		2004
5. Pennington, K.L. and Cech, T.V.	Introduction to Water Resources and Environmental Issues.	<input type="checkbox"/>	Cambridge	2010

**Required Additional Supplies and Materials (Eg. Software, hardware, tools, specialized clothing)**

Field trip fee may be required.

**Typical Evaluation Methods and Weighting**

Final exam:	%	Assignments:	%	Midterm exam:	%	Practicum:	%
Quizzes/tests:	%	Lab work:	%	Field experience:	%	Shop work:	%
Exams (2):	30%	Field work reports:	30%	Research presentations:	40%	Total:	100%

**Grading system:** Letter Grades:  Credit/No Credit:  Labs to be scheduled independent of lecture hours: Yes  No

**Typical Course Content and Topics**

1. Historical Overview of water as a resource.
2. Perception of water
3. Field Techniques of Watershed Assessment
4. Water Quality Monitoring
5. Water Contamination
6. Waste Water Treatment
7. Drinking Water Treatment
8. Conflict over Water Resources
9. Water Diversion
10. Impact of Climate Change on Water Resources
11. Sustainability of Water Usage