ORIGINAL COURSE IMPLEMENTATION DATE:	January 2013
REVISED COURSE IMPLEMENTATION DATE:	January 2015
COURSE TO BE REVIEWED: (six years after UEC approval)	June 2020

Course outline form version: 11/22/13

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**.

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:	
Total	**60**

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)**

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