

## COURSE INFORMATION

Course Title	Course Code Number	Credit Value
Global Issues in Land and Water Systems	LWS 525	3 credits

## PREREQUISITES

There are no course prerequisites. This course is restricted to students in one of these faculties: GRAD

## CONTACTS

Course Instructor(s)	Contact Details	Office Location	Office Hours
Les M. Lavkulich	Email: lml@mail.ubc.ca	MCML 127	By appointment (in-person or virtual)

## ACKNOWLEDGEMENT

UBC's Point Grey Campus is located on the traditional, ancestral, and unceded territory of the xwməθkwəyəm (Musqueam) people. The land it is situated on has always been a place of learning for the Musqueam people, who for millennia have passed on their culture, history, and traditions from one generation to the next on this site.

## COURSE DESCRIPTION

The course provides a comprehensive overview of water resource systems management, integrating concepts and approaches from environmental sciences, resource management, and policy. As climate change and population growth have had significant and diverse impacts on major river drainage basins around the world, students will explore how management of fresh water (the vital, and often “fugitive” resource), is evolving through an era of increased uncertainty.

Principles of systems thinking and analysis and integrated watershed science and management are applied in LWS 525 in the context of the transboundary drainage basin, where cumulative effects and water management and governance become more complex and significant. Several case studies will be discussed and students will prepare a term paper on a transboundary basin case study of the student's interest.

## COURSE STRUCTURE

Each class will consist of a lecture or class discussion/activity. Course participants are expected to attend in-person. See the *Learning Activities* below for more details.

This course uses the Canvas Learning Management System ([canvas.ubc.ca](https://canvas.ubc.ca)) to support in-class activities. Students will find lecture slides, readings and assignment instructions here. Classroom lectures may be recorded (once required consent obtained), and recordings will be available to



students via Canvas. Students can also participate in online discussions and submit assignments via Canvas.

## SCHEDULE OF TOPICS

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<b>Period</b>	<b>Content</b>
Module 1	Water Basins and Water Properties
Module 2	Historic Water Basins
Module 3	Integrated Watershed Management
Module 4	Land Use Impacts
Module 5	Global Issues
Module 6	Governance & Transboundary Issues

Dates for discussions and assignments will be posted on the course Canvas site. Please note that this schedule is subject to change.

## LEARNING ACTIVITIES

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Students are expected to come prepared to lectures and complete any assigned readings prior to class (see readings on Canvas). Students are invited to discuss the topic of the session by asking questions and/or sharing commentary based on their background and expertise. There will be three scheduled small group discussions throughout the course, with a follow-up critical review essay to be submitted online in Canvas (see *Assessments of Learning* below). Additional readings have been provided as references to support further research for the Case Study Term Paper and Take Home Final Exam.

## LEARNING OUTCOMES

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On completion of this course, students should be able to:

1. Demonstrate an understanding of the hydrological, socioeconomic, environmental and policy facets of water resource management.
2. Identify priority water resource management issues and strategies for major development sectors, such as agriculture, forestry and large industry.
3. Characterize a drainage basin, and demonstrate an understanding of the water management challenges facing large, transboundary drainage basins in a changing climate.
4. Discuss theory and practice of water resource management at international, national and local scale jurisdictions, and their intersections in a transboundary context.
5. Analyze water rights, equity, and potential water conflicts under different management regimes.
6. Identify and discuss the interconnections between water resource management, ecosystem goods and services, and human and ecosystem health.
7. Develop a comprehensive analysis and review of fresh water resources development and management and its challenges on a transboundary river basin case study.

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**ASSESSMENTS OF LEARNING**

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To complete the course, the following assessment components will be graded:

- 1. Discussions and Critical Review (3 x 10% = 30%) – 30%**
- 2. Case Study Term Paper – 30%**
- 3. Final Examination (Take Home) – 40%**

1. Student participation in class is encouraged and can take on several forms. Question periods during lectures are opportunities to ask questions and share commentary on the topic at hand in a more informal way. In addition, there will be three designated discussion periods scheduled, where the class will break into small groups to discuss an assigned topic/question. Following these class discussions, a short critical review essay (500 words) will be assigned and students will submit these to Canvas.

*Detailed instructions will be provided during class time and posted in Canvas.*

The Canvas Discussion board will also be an available forum for students to continue discussions outside of class time. The instructor will intermittently join in to facilitate.

2. In the term paper, students will present a comprehensive report (~2000 words) on a selected drainage basin case study, that includes the following:

- a geographical characterization of the climate and basin,
- review of the water resource management history and issues,
- explanation of the key policies that inform/guide WRM in the basin,
- an evaluation of what has been successful (provide criteria) and what are the priorities for WRM to continue into the future in a changing climate.

*Detailed instructions will be provided during class time and posted in Canvas.*

Criteria for evaluation of term paper:

- Read and follow instructions carefully
- Provide clearly stated objectives
- Provide comprehensive subject matter coverage (breadth and depth)
- Cite relevant literature documentation
- Discuss strengths and weaknesses of alternative findings
- Present clear conclusions
- Document is clear, organized and absent of spelling and grammatical errors

3. A take-home Final Examination will be shared with students in the last week of classes. The exam will be open-book, and students will have ~2 weeks to complete their submission. Students will present long-form written responses to given question(s) that integrate concepts presented throughout the course lectures, discussions and in the global drainage basin case studies.

*Detailed instructions will be provided during class time and posted in Canvas.*

If a student has a concern with an assignment and/or deadline, they should contact an instructor immediately to discuss possible alternatives. If an assignment is submitted late and the student did not contact the instructor prior to the due date, late marks will be deducted at the instructor's discretion.

## UNIVERSITY POLICIES

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UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious observances.

**UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions.**

Details of the policies and how to access support are available on [the UBC Senate website](#).

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## COPYRIGHT

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