



1. Course Information and Prerequisites

Lectures:

See schedule posted on OWL.

Prerequisites

Biology 2483A/B.

Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

Antirequisites

Biology 3222F/G - Introduction to Freshwater and Marine Environments

2. Instructor Information

Dr. Vera Tai

e-mail: vtai4@uwo.ca

office: BGS 2028

office hours: Thursdays 2:30 - 4:30 pm, BGS 2028, drop-in
or e-mail to schedule another time if needed

Teaching Assistant:

Kevin Adeli

e-mail: kadeli2@uwo.ca

3. Course Description and Schedule

This course examines water as a habitat for life and the ecology of freshwater and marine environments. In particular, we will examine the role of aquatic ecosystems in global and local biogeochemical cycles, including climate change, ocean acidification, and eutrophication. Emphasis will be placed on the protists, bacteria, viruses that make up the bulk of the biomass in aquatic environments.

Course Schedule

This schedule may change to accommodate lecture progress or adjust course content over the term.

Week of	Topic(s)
January 8/10	Introduction, why water? Water on Earth, water physics and chemistry Searching for research - Participation #1
January 15/17	Nutrients in water, water usage, sustainability case study - Hudson Bay ecosystem - Participation #2
January 22/24	Living in water Reynold's number - Participation #3
January 29/31	Primary production, phytoplankton Secondary production, zooplankton, microbial loop Plankton ID - Participation #4
February 5/7	Near shore marine ecosystems Biological carbon pump Bloom dynamics - Participation #5
February 12/14	Ocean acidification Species interactions, ecosystem effects - Participation #6 Research Communication #1 DUE February 16, 5 pm
February 17-25	Reading Week - no classes
February 26	Deep sea ecosystems Deep sea biodiversity - Participation #7
February 28	Mid-term - in class - Wednesday February 28 (make-up on Monday March 4, 4:00 pm)
March 4/6	Freshwater ecosystems Eutrophication, case study - Lake Erie - Participation #8
March 11/13	Invasive species case study - effects of invasive species - Participation #9
March 18/20	Fisheries Research Communication #2 DUE March 22, 5 pm

Week of	Topic(s)
March 25/27	Conservation ecology How many fish in the sea? - Participation #10 Guest Speaker - Dr. Paul Mensink
April 1/3	Marine Protected Areas Design an MPA - Participation #11
April 8	Review
April 11-30	April Exam Period, Final Exam scheduled by the registrar

4. Course Materials

All course material will be posted to OWL: <https://owl.uwo.ca/>
There is no textbook. Readings and other resources will be posted on OWL.

Students are responsible for checking OWL on a regular basis for news and updates. This is the primary method by which information will be disseminated to all students in the class.

If students need assistance, they can seek support on the OWL Help page. Alternatively, they can contact the Western Technology Services Helpdesk. They can be contacted by phone at 519-661-3800 or ext. 83800.

5. Methods of Evaluation

Course Component	Weight	Description
Participation	10%	participation in class activities
Research Communication #1	10%	writing to explain and communicate scientific research due Feb 16
Midterm	25%	short and long answer, Wednesday February 28, in class make-up - Monday March 4, 4:00 pm
Research Communication #2	15%	writing to explain and communicate scientific research due March 22
Final Exam	40%	short and long answer including interpretation and communication questions about a pre-assigned research article scheduled by the registrar

Participation

Students will be assessed based on participation and engagement in class activities (in groups or individually), and submission of written answers to short, in-class assignments. There will be approximately 9 to 12 participation activities that will be graded on a scale of 0 to 3 (0 = not submitted, 1 = incomplete, 2 = complete but poor contribution or answers, 3 = complete and sufficient contribution or answers). You can miss submitting up to 3 participation activities without penalty and without academic consideration. Beyond that, please see the Student Absences section below if you have a valid reason to be excused from a participation submission without penalty. If any participation activities are missed, you are still responsible for the material covered in the activity.

Research Communications

Students are to write 2 communications (~ 1000 words each) explaining a research article and defining concepts in aquatic ecology. These writing assignments will assess the communication of ideas, evaluation of evidence, and understanding of concepts in aquatic ecology. The communications will be submitted to Turnitin (see Scholastic Offences statement in Academic Policies below). Details for each Research Communication will be provided in class and via OWL. Research communication #2 must be completed to pass the course.

Midterm and Final Exam

The Midterm and Final exam will consist of short- and long-answer questions. The Final Exam will also include communicating the results of a research article assigned at the end of term.

Late Course Components

Assignments, presentations, and reports must be handed in on the appropriate due date unless a valid excuse is provided through your academic counsellor, and an alternate due date will be arranged with your instructor.

If you are a Science student, the Academic Counselling Office of the Faculty of Science is open for in-person and virtual appointments. Their website is https://www.uwo.ca/sci/counselling/advising_services/index.html

Information about late or missed evaluations:

- Late assessments without academic consideration will be subject to a late penalty of 10% per day.
- If you miss the mid-term (February 28th, 9:30 am), you are eligible to write the make-up (scheduled for March 4th at 4:00 pm) only if you have academic consideration (see Student Absences below).
- If you miss the Final Exam, please contact your faculty's Academic Counselling Office as soon as you are able to do so. They will assess your eligibility to write the Special Exam (the name given by the university to a makeup Final Exam) (see Student Absences below).

Required Conditions to Pass the Course

- i) completion of Research Communication #2
- ii) completion of the Final Exam

Students not meeting these conditions will receive a maximum grade of 45.

Click [here](#) for a detailed and comprehensive set of policies and regulations concerning examinations and grading. The table below outlines the University-wide grade descriptors.

A+	90-100	One could scarcely expect better from a student at this level
A	80-89	Superior work which is clearly above average
B	70-79	Good work, meeting all requirements, and eminently satisfactory
C	60-69	Competent work, meeting requirements
D	50-59	Fair work, minimally acceptable
F	below 50	Fail

6. Student Absences

If you are unable to meet a course requirement due to illness or other serious circumstances, please follow the procedures below.

You must provide valid medical or supporting documentation to the Academic Counselling Office of your Faculty of Registration as soon as possible. For further information, please consult the University's medical illness policy at:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_medical.pdf

The Student Medical Certificate is available at:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf

Absences from Midterm

If you miss the midterm, please contact the Academic Counselling office of your Faculty of Registration as soon as you are able to do so. If you are granted academic consideration, then you are eligible to write the make-up midterm. If you also miss the make-up midterm, then you must contact the Academic Counselling office again. If you are again granted academic consideration, the weight of the midterm will be shifted to the final exam (i.e. the final exam will be worth 65%).

Absences from Final Examinations

If you miss the Final Exam, please contact the Academic Counselling office of your Faculty of Registration as soon as you are able to do so. They will assess your eligibility to write the Special Examination (the name given by the University to a makeup Final Exam).

You may also be eligible to write the Special Exam if you are in a “Multiple Exam Situation” (e.g., more than 2 exams in 23-hour period, more than 3 exams in a 47-hour period).

7. Accommodation and Accessibility

Religious Accommodation

When a course requirement conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request accommodation for their absence in writing at least two weeks prior to the holiday to the course instructor and/or the Academic Counselling office of their Faculty of Registration. Please consult University's list of recognized religious holidays (updated annually) at:

<https://multiculturalcalendar.com/ecal/index.php?s=c-univwo>.

Accommodation Policies

Students with disabilities work with Accessible Education (formerly SSD) which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The Academic Accommodation for Students with Disabilities policy can be found at:

[https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic Accommodation_disabilities.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic_Accommodation_disabilities.pdf)

8. Academic Policies

The website for Registrarial Services is <http://www.registrar.uwo.ca>.

In accordance with policy, <http://www.uwo.ca/its/identity/activatenonstudent.html>, the centrally administered e-mail account provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at his/her official university address is attended to in a timely manner.

Electronic devices will not be permitted on tests and exams.

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following web site:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf.

Review Biology 2290 learning outcomes. You are expected to know what plagiarism is at this stage of your programme.

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).

Remote Proctoring, in the event of a health lock-down:

Tests and examinations in this course will be conducted using a remote proctoring service. By taking this course, you are consenting to the use of this software and acknowledge that you will be required to provide **personal information** (including some biometric data) and the session will be **recorded**. Completion of this course will require you to have a reliable internet connection and a device that meets the technical requirements for this service.

More information about this remote proctoring service, including technical requirements, is available on Western's Remote Proctoring website at: <https://remoteproctoring.uwo.ca>.

Professionalism & Privacy:

Western students are expected to follow the [Student Code of Conduct](#). Additionally, the following expectations and professional conduct apply to this course:

- Students are expected to follow online etiquette expectations provided on OWL
- All course materials created by the instructor(s) are copyrighted and cannot be sold/shared
- Recordings are not permitted (audio or video) without explicit permission
- Permitted recordings are not to be distributed
- Students will be expected to take an academic integrity pledge before some assessments
- All recorded sessions will remain within the course site or unlisted if streamed

9. Support Services

Please visit the Science & Basic Medical Sciences Academic Counselling webpage for information on add/drop courses, academic considerations for absences, appeals, exam conflicts, and many other academic related matters: <https://www.uwo.ca/sci/counselling/>

Students who are in emotional/mental distress should refer to Mental Health@Western (<https://uwo.ca/health/>) for a complete list of options about how to obtain help.

Western is committed to reducing incidents of gender-based and sexual violence and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced sexual or gender-based violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts at:

https://www.uwo.ca/health/student_support/survivor_support/get-help.html

To connect with a case manager or set up an appointment, please contact support@uwo.ca.

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Accessible Education at:

http://academicsupport.uwo.ca/accessible_education/index.html

if you have any questions regarding accommodations.

Learning-skills counsellors at the Student Development Centre (<https://learning.uwo.ca>) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling.

Western University is committed to a thriving campus as we deliver our courses in the mixed model of both virtual and face-to-face formats. We encourage you to check out the Digital Student Experience website to manage your academics and well-being: <https://www.uwo.ca/se/digital/>

Additional student-run support services are offered by the USC, <http://westernusc.ca/services>.

10. Equity, Diversity, Inclusion and Decolonization (EDID)

Land Acknowledgement: We acknowledge that Western University is located on the traditional lands of the Anishinaabek, Haudenosaunee, Lūnaapéewak, and Chonnonton Nations, on lands connected with the London Township and Sombra Treaties of 1796 and the Dish with One Spoon Covenant Wampum. This land continues to be home to diverse Indigenous peoples (First Nations, Métis and Inuit) whom we recognize as contemporary stewards of the land and vital contributors of our society. Throughout Canada, North America, and the world, Indigenous Peoples are vital contributors to their communities, and we greatly value their presence, knowledge, and wisdom.