**Course Outline Form: Winter 2018**

# General Information

## Course Code: ENVS 3150 Course Title: Aquatic Systems

**Course Description:** In this course students will be taught how to apply quantitative methods to the analysis of aquatic systems of the earth from many simultaneous perspectives. The material will include the physical, chemical and biological components of the various liquid surficial structures and processes and also how they interact with humans. The economic, social and policy implications of humans interacting with aquatic systems will also be emphasized. The history of the analysis of aquatic systems will be systematically included in the material.

## Credit Weight: 0.5

**Academic Department (or campus): School of Environmental Sciences Campus: Guelph**

**Semester Offering: Winter Class Schedule and Location:**

Lectures:

MINS Room 106

Tuesdays & Thursdays, 1:00-2:20 pm

Labs:

Wednesdays: 3:30-5:20

Fridays, 12:30-2:20

All labs will be held in Graham Hall, Room 3309

# Instructor Information

Instructor Name: Paul Sibley Instructor Ema[il: psibey@uoguelph.ca](mailto:psibey@uoguelph.ca)

Office location and office hours: Room 2103 (open door)

# GTA Information

GTA Name: Sarah Graetz

GTA Email: [sgraetz@uoguelph.ca](mailto:sgraetz@uoguelph.ca)

GTA office location and office hours: TBD

# Course Content

## Specific Learning Outcomes:

With respect to course material:

1. To gain foundational knowledge on which to understand the basic physiography, chemistry and biology/ecology of aquatic (freshwater and marine) systems
2. To understand the science of aquatic systems in the context of management and policy principles and the essential link that must be established between these two elements in order to develop innovative and effective policies
3. To understand 1 and 2 in the context of key global environmental issues presently facing humanity and how these issues have been or should be managed using sound science and policy

With respect to scientific evaluation and effective communication:

1. To evaluate scientific evidence through critical evaluation of the literature and defense of ideas through discussion and debate
2. To promote effective communication in an academic and professional environment through technical reports, discussions and debates
3. To promote numeracy through problem solving (calculations) in lectures and statistical analysis of laboratory-generated data sets presented in laboratory reports

## Lecture Content:

Date (Week of) Topic

January 8-19 (4 lectures) Introductory concepts and basic principles in water

chemistry, hydrology, and physiography

January 22-February 2 (4 lectures) Dead lakes and dead zones: The science and management of nutrient pollution

February 5-16 (3 lectures) When the switch goes off: Ocean acidification and the

state of the world’s oceans

February 26-March 9 (4 lectures) From Ocean vents to Great Lakes Invasive Species:

Concepts of Biodiversity

March 12-23 (4 lectures) Who killed the Grand Banks? The science and

management of marine & freshwater fisheries

March 26-April 6 (4 lectures) Aquatic Systems as the final repository for the by-products of human activities

**Labs**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Lab** | **Subject** | **Lab (week of)** | **Lab assignment due date1** | **Assignment Type** | **Value** |
| 1 | Data analysis and report writing | Jan 8 | N/A | N/A | N/A |
| 2 | Nutrient Pollution (week 1) | Jan 15 (start) |  |  |  |
| 2 | Nutrient Pollution (week 2) | Jan 22 (finish) | Friday, Feb 2 | Scientific Report1 | 20% |
| 3 | Ocean Acidification | Jan 29 | Week of Feb 12 (in your respective labs) | Critique | 10% |
| 4 | Biodiversity (week 1) | Feb 5 (start) |  |  |  |
| 4 | Biodiversity (week 2) | Feb 12 (finish) | Friday Mar 2 | Scientific Report1 | 20% |
| 5 | Fisheries | Feb 26 | Week of Mar 5 (in your respective labs) | Media Piece | 5% |
| 6 | Contaminants (week 1) | Mar 12 (start) |  |  |  |
| 6 | Contaminants (week 2) | Mar 19 (finish) | Week of Apr 3 | Data Report (optional) | 5% (bonus) |

1Students are to write up one of the two Lab Reports (Nutrient pollution **OR** Biodiversity).

**Seminars:** N/A

## Course Assignments and Tests:

|  |  |  |  |
| --- | --- | --- | --- |
| **Assignment or Test** | **Due Date** | **Contribution to Final Mark (%)** | **Learning Outcomes Assessed** |
| Lab Report | Friday, February 2 | 20% | 1, 5, 6 |
| Critique | Week of February 12 | 10% | 1, 4, 5 |
| Mid-term | Thursday February 15 | 25% | 1-6 |
| Biodiversity Lab1 | Week of Mar 27 | 20% | 1, 5, 6 |
| Fisheries Lab | Friday, Mar 5 | 5% | 2, 3, 5 |
|  |  |  |  |

1 Students will write one of the two lab reports (you can choose between the nutrient lab and the biodiversity lab)

|  |  |  |  |
| --- | --- | --- | --- |
| **Assignment or Test** | **Due Date** | **Contribution to Final Mark (%)** | **Learning Outcomes Assessed** |
| Toxicity Lab | Week of April 3 | 5% (optional) | 4-6 |
| Participation | End of semester | 10% | 1-6 |
| Final Exam | TBD | 25% | 1-6 |

## Final examination date and time:

TBD

## Final exam weighting: 25%

**Course Resources**

**Required Texts:**

N/A

## Recommended Texts:

Ecology of Aquatic Systems is recommended but not required. All other materials will be posted on Courselink as needed.

## Lab Manual:

N/A

## Other Resources:

N/A

## Field Trips:

N/A

## Additional Costs:

N/A

# Course Policies

## Grading Policies

Students are expected to meet all posted deadlines (provided in the table above). Assignments will be handed in to the course instructor/teaching assistant by 4:30 of the due date, either through Courselink (Dropbox) or directly as a hardcopy before/after class, during lab, or at the office of the course instructor/TA. Students will be assessed a late penalty of 5% per day unless appropriate arrangements with valid evidence have been made with the course instructor.

## Course Policy on Group Work:

Some laboratory exercises will require students to work in groups. Although you will generate the data collectively, all students are expected to complete the associated laboratory (or any other) assignments individually (not as groups). Students who submit documents indicating collective (rather than individual) efforts will be considered to have plagiarized and will be dealt with according the plagiarism statement (see below).

## Course Policy regarding use of electronic devices and recording of lectures:

Presentations which are made in relation to course work—including lectures—cannot be recorded or copied without the written permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

# University Policies

## Academic Consideration

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. See the undergraduate calendar for information on regulations and procedures for Academic Consideration:

[Academic Consideration, Appeals and Petitions](http://www.uoguelph.ca/registrar/calendars/undergraduate/current/c08/c08-ac.shtml)

## Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community, faculty, staff, and students to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring.

University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to

remain aware that instructors have access to and the right to use electronic and other means of detection. Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it. Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar:

[Academic Misconduct Policy](https://www.uoguelph.ca/registrar/calendars/undergraduate/2014-2015/c08/c08-amisconduct.shtml)

## Accessibility

The University of Guelph is committed to creating a barrier-free environment. Providing services for students is a shared responsibility among students, faculty and administrators. This relationship is based on respect of individual rights, the dignity of the individual and the University community's shared commitment to an open and supportive learning environment. Students requiring service or accommodation, whether due to an identified, ongoing disability or a short-term disability should contact the Centre for Students with Disabilities as soon as possible.

For more information, contact CSD at 519-824-4120 ext. 56208 or e[mail csd@uoguelph.ca](mailto:csd@uoguelph.ca) or see the website: [Student Accessibility Services Website](http://www.uoguelph.ca/csd/)

## Course Evaluation Information

Course evaluations will take place in class, near the end of the semester.

The School of Environmental Sciences takes student feedback seriously. The SES Director sees all student feedback and discusses this feedback with the faculty where appropriate. Numerical scores and *signed* student comments are reviewed by the School’s Tenure & Promotion Committee, and are considered in our evaluation of the faculty member for the granting of tenure, advancement in rank, and performance related salary increases. This committee will NOT see comments that are not signed by the student. *Faculty members are not able to access their own teaching evaluations until after their final grades are submitted to the registrar.*

Please refer to the **Course and Instructor Evaluation Website Drop date**

The last date to drop one-semester courses, without academic penalty, is March 8, 2013. For regulations and procedures for Dropping Courses, see the Academic Calendar:

[Current Undergraduate Calendar.](https://www.uoguelph.ca/registrar/calendars/undergraduate/current/)