EEB 1452 Special Topics in Ecology: Applied Aquatic Ecology

Department of Ecology and Evolutionary Biology
University of Toronto

Course Syllabus – Winter 2020

This is a quarter course (6 week module) running from January through to Reading Week.

Time/Location Thursday, 1:00 – 4:00pm, see weekly schedule for room

Instructor Dr. Chelsea Rochman
Ecology and Evolutionary Biology
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Email: chelsea.rochman@utoronto.ca
Office Hours: by appointment

Calendar description This is a seminar-style course with student-led discussions. During the course, we will take a deeper dive into applied aquatic ecology, with an introductory focus on basic aquatic ecology first and then deep dives into how scientific studies have challenged and/or enhanced our understanding of how climate change, fisheries, and pollutants have impacted aquatic ecosystems. This is a course for graduate students with a focus in Ecology.

Required Textbook There is no required textbook. Required weekly readings will be posted on Quercus.

Course objectives In this course you will learn about:

1. The field of aquatic ecology.
2. Different careers in applied aquatic ecology.
3. Seminal papers that have challenged and enhanced our understanding of aquatic ecology and how anthropogenic stressors affect aquatic ecosystems.
4. How to write an opinion piece for an international peer-reviewed journal.
5. How to give a presentation, and facilitate and engage in discussions with your peers about the issues we are learning about in this course.
## Course Schedule

<table>
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<tr>
<th>Week</th>
<th>Date</th>
<th>Lecture</th>
<th>Lecture/Activity</th>
<th>Meeting Room</th>
<th>Required Reading</th>
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| 1    | Jan 9<sup>th</sup> | 1       | **Introduction**  
Go over syllabus and course structure/rubrics, sign people up for each topic/lecture, early discussion about writing assignment, discuss first set of papers. Time to look at example opinion pieces (solo brainstorming). | ESC 3043 (3<sup>rd</sup> floor lounge) | Forbes, 1887 & Dudgeon et al., 2006 *Biol Rev* |
| 2    | Jan 16<sup>th</sup> | 2       | **Climate Change**  
Two presentations on climate change. Time to work in groups, decide on topic of opinion piece, make outline, and assign writing chunks.                                                                 | ESC 3056                     | TBD                                                                               |
| 3    | Jan 23<sup>rd</sup> | 3       | **Climate Change/Fisheries**  
Two presentations, one on climate change and one on fisheries. Time to work in groups, go over draft text, figures, etc… and prep what you need to do to complete a draft paper. | ESC 3043 (3<sup>rd</sup> floor lounge) | TBD                                                                               |
| 4    | Jan 30<sup>th</sup> | 4       | **Fisheries**  
Two presentations on fisheries. Career panel. Draft papers due for peer critiques.  
*Peer critiques due Feb 5<sup>th</sup>*  
| ESC 3043 (3<sup>rd</sup> floor lounge) | TBD |
| 5    | Feb 6<sup>th</sup>  | 5       | **Fisheries OR Pollution**  
Two presentations, one on fisheries and one on pollution. Time to work in groups, go over critiques with your group and discuss what you need to do to finalize your draft. | ESC 3043 (3<sup>rd</sup> floor lounge) | TBD                                                                               |
| 6    | Feb 13<sup>th</sup> | 6       | **Pollution**  
Two presentations on pollution. Final draft of opinion piece due. | ESC 3043 (3<sup>rd</sup> floor lounge) | TBD                                                                               |

### Reading Week

**Structure:** This course can have an enrollment of 12 people maximum. This allows each person to lead a paper and a topic discussion. Each week there will there will be two assigned readings, each led by a student. The students will be in charge of choosing the papers with guidance from their instructor and each paper must be approved by the Instructor. One reading for each week will be a seminal paper in aquatic ecology that is relevant to the applied topic and another will be a newer paper that challenged what we know about the applied topic in relation to aquatic ecology or that led to significant progress in the field. All students in the class will read both papers before coming to class. The students leading the papers will give a presentation about the study, how it’s relevant to or could inform their own work, and lead the class in a discussion. The last part of class will be designated group work time to work on an opinion piece for publication with a topic to advance the field of aquatic ecology relevant to their applied topic.
**Course Website** You can access the course website through Quercus. The course website will contain a copy of this syllabus. All readings will be posted the week prior (at the latest). If I email the entire class, I will do so using Quercus, and these emails will be sent to your U of T email account.

**Course Evaluation (Marking Scheme)**

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<th>Participation points</th>
<th>25%</th>
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<tr>
<td>You are expected to be an active participant in discussions. Attendance alone is not enough. You will lose points if you are not engaging in discussions about the readings.</td>
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<tr>
<th>Presentation to the Group</th>
<th>20%</th>
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<td>You will be expected to make a 20 minute presentation to the group that describes the paper you are leading in the context of the literature, how it is relevant to or can inform your own work, and some key points relevant to the paper that you think warrants discussion.</td>
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<tr>
<th>Discussion Lead</th>
<th>10%</th>
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<td>When we are discussing the paper you brought to the class, you are expected to start a discussion, keep it going and see that all are engaged.</td>
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<tr>
<th>Group Writing Assignment Draft</th>
<th>5%</th>
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<td>Your group will be responsible for handing in a draft of your opinion piece on time so that it can be sent around for peer-critique.</td>
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<th>Peer Critiques</th>
<th>15%</th>
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<td>All students in the class are expected to provide feedback on the other two pieces in the course that they are not a co-author on.</td>
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<th>Group Writing Assignment Final</th>
<th>25%</th>
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<tr>
<td>Papers will be graded for punctuality, originality, writing style, and professionalism. The purpose of this assignment is to write something that can be submitted to a journal for peer-review.</td>
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**Expectations for Student Attendance** All students are expected to attend all sessions and will be responsible for their content. I will not accommodate missed material without a formal medical letter.

**Accessibility** Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please let Prof. Rochman know, and register with Accessibility Services (416-978-8060; accessibility.utoronto.ca) as soon as possible (registration is a University requirement for receiving accommodations). Prof. Rochman will work with the Service on any needed accommodation.
**Academic Integrity** There will be no tolerance of violations of academic integrity in this course. If you are caught violating any of the University’s policies on academic integrity, you will be given a mark of zero for the relevant work and the matter will be reported to, and handled by, the Office of Student Academic Integrity. All students are responsible for the content of UofT’s Code of Behavior on Academic Matters, so if you are not familiar with this material, please read it carefully ([http://www.artsci.utoronto.ca/osai/The-rules/code/the-code-of-behaviour-on-academic-matters](http://www.artsci.utoronto.ca/osai/The-rules/code/the-code-of-behaviour-on-academic-matters)). Potential offences include, but are not limited to:

- **In papers and assignments:**
  - Using someone else’s ideas or words without appropriate acknowledgement.
  - Submitting your own work in more than one course without permission of the instructor.
  - Making up sources or facts.
  - Obtaining or providing unauthorized assistance on any assignment (including working in groups in individual projects, such as the blog).

- **Misrepresentation:**
  - Falsifying or altering any documentation required by the University, including (but not limited to) doctor’s notes.

**Missed course work** If you miss any assignment due to an illness, you must contact Prof. Rochman within 2 days of the due date to request a make-up. To be considered for a make-up assignment you will need valid documentation in the form of one of the following documents: UofT Medical Certificate, UofT Health Service Form, or a letter from your College Registrar. If you miss only one test, this can only be made up by completing the optional writing assignment. If you miss two or more tests, and there is valid documentation, we can schedule a make-up test.

**Re-marking course work** Students wishing to request a re-mark must submit their request to Prof. Rochman within one week of receiving the original mark. Note that we cannot re-mark work that has been altered in any way since the original marking, and that submitting altered work for remarking is an academic integrity violation. Students seeking a re-mark of their Final Exam or a re-check of their final course mark must do so formally though the Office of the Faculty Registrar ([http://www.artsci.utoronto.ca/current/exams/rr](http://www.artsci.utoronto.ca/current/exams/rr)).
Expectations

Participation (25% of grade)
Expectation:
Come to class
Read the papers & engage in discussion

Presentation (20% of grade)
Choose one reading that is relevant to what you chose to lead:
  - i.e., either a seminal paper about topic or something that highlights what we know about that topic now.
Make a 20-min presentation that includes:
  - who the authors are
  - the background of the work, pulling in other relevant literature
  - discussion about what the paper is about, including their hypotheses and results
  - a description of how this may be relevant to your own work
  - a works cited slide at the back showing other lit you read for background
Turn your presentation in via email.

Facilitation Discussion (10%)
Facilitate a discussion that has everyone engaged:
  - Prepare questions
  - Think of a way to engage everyone if needed

Group Writing Assignment Draft (5%)
Turn it in on time:
  - w/full draft of text and figure(s)
  - Include line numbers to assist with review

Peer Critique (15%)
Read the draft you are assigned
Review the paper as you would a manuscript you are asked to review from a journal
Provide advice/suggestions about:
  - The content/thesis of the paper
  - The flow of the writing
  - Grammar
  - The figure(s)

When I review a paper, I generally start with a paragraph about the content related to its novelty, scientific merit, flow and quality. Then I give line by line comments that are relevant to any of the above things. Then I comment on the figure(s).

Group Writing Assignment Final (25%)
Turn in a full draft of your manuscript for my review. Please include:
  - Full text
  - Figure(s)
Paper in format for target journal
Authors in the order you chose (alphabetical?, based on who did the most work?)

- It may be a good idea to choose a lead author early on to herd cats (although there should be mostly equal contribution).

If you’d like feedback on a cover letter, please prep one.

I do expect that you’ll submit this paper for publication 😊 - but of course it’s up to you!