**Course Outline Form: Fall 2017**

# General Information

**Course Code:** ENVS\*3010

**Course Title:** Climate Change Biology

## Course Description:

This course examines the impacts of climate change on living organisms, biological communities and ecosystems. The course focuses on what is known, and what is not known, about the ways in which the suite of changing climate variables influence biological systems.

**Credit Weight:** 0.50

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

**Campus:** Guelph

**Semester Offering:** Fall semester 2017

## Class Schedule and Location:

Tuesdays and Thursdays 1:00pm - 2:20pm JTP Room 214

# Instructor Information

Instructor Name: Dr. Simone Härri Instructor Email: [shaerri@uoguelph.ca](mailto:shaerri@uoguelph.ca)

Instructor Phone and Extension: +1 519 824 4120 ext. 56681

Office location and office hours: Bovey 2216. Office hours Mondays 13:30– 15:30 and by appointment.

# GTA Information

GTA Name: Kate Jackson

GTA E[mail: kjacks10@uoguelph.ca](mailto:kjacks10@uoguelph.ca)

GTA office location and office hours: N/A

GTA Name: Jeremy Ramshaw

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

GTA office location and office hours: N/A

GTA Name: Amilah Rasool

GTA E[mail: arasool@uoguelph.ca](mailto:arasool@uoguelph.ca)

GTA office location and office hours: N/A

# Course Content

## Specific Learning Outcomes:

At the successful completion of this course, the student will have demonstrated the ability to:

1. Interpret the current climate change in a historical context and define natural and human causes of climate variability
2. Examine the general trends in future climate and interpret the variability in future climate predictions through running different computer models
3. Explain expected changes in the net primary production of ecosystems through the analysis of different effects of climate change on plant physiology and decomposition
4. Hypothesize how different species and entire communities react to the changing climate by formulating a scientific question that will be applied to the design and presentation of a poster
5. Design experimental methods necessary to study how individuals, populations, communities, and entire ecosystems will respond to the changing climate and discuss their limitations

## Lecture Content:

|  |  |  |
| --- | --- | --- |
| **When** | **Topic** | **Textbook Chapter** |
| Week 1 | Natural climate variability | Chapters 1.4 & 1.5 |
| Week 2 | Future and past climate predictions | Chapters 1.1, 1.2, 1.3 &  2.1, 2.2, 2.3, 2.4 |
| Week 3 | Climate of the future | Chapter 2.5 |
| Week 4 | Plant physiology and climate change | Chapter 4 |
| Week 5 | Midterm |  |
| Week 6 | Population responses | Chapter 5 |

|  |  |  |
| --- | --- | --- |
| Week 7 | Community responses | Chapter 6 |
| Week 8 | Ecosystem responses | Chapter 7 |
| Week 9 | Poster presentations |  |
| Week 10 | Evolutionary responses and biodiversity effects | Chapter 8 & 12 |
| Week 11 | Forest and agricultural responses | Chapters 10 & 11 |
| Week 12 | Mitigation and adaptation |  |

**Labs:** N/A

**Seminars:** N/A

## Course Assignments and Tests:

|  |  |  |  |
| --- | --- | --- | --- |
| **Assignment or Test** | **Due Date** | **Contribution to Final Mark (%)** | **Learning Outcomes Assessed** |
| Online quizzes | September 17 & 24,  October 1, 8, 22 &  29, November 5, 19  & 26. December 3 | 20% | 1, 3, 4, 5 |
| Future Projection | First submission: September 25, 2017 Second submission: October 2, 2017 | 15% | 2 |
| Midterm (in class) | October 12, 2017 | 15% | 1, 2, 3 |
| Posters | Submission to Dropbox: November 6  Presentations: November 7 or 9 | 15% | 2, 3, 4 |
| Method piece | November 29, 2017 | 15% | 3, 4, 5 |
| Final exam | December 12, 2017 | 20% | 1, 2, 3, 5 |
| Top Hat | During every lecture | BONUS 5% | 1, 2, 3, 4, 5 |

**Additional Notes (if required):**

You get two attempts for each online quiz and the attempt with the higher mark counts towards your final grade. The lowest quiz mark will be dropped at the end of the semester.

The first submission of the future projection assignment counts 65% towards the assignment grade and the second submission contributes 35%. You can only submit a second time, if you submitted a first version. If you don’t submit a second version, your first submission contributes 100% towards the assignment grade.

The midterm follows a two-stage procedure with an individual and a group part. The individual part of the midterm is worth 85% of your grade and takes place October 12 during class. The group part takes place October 17 during class, where you get to solve the same exam as a group of four students. The group part counts 15% towards your midterm grade. The group part is not mandatory. If you opt out of the group part, your entire midterm grade is based on your individual submission. You have to opt out before October 10.

Throughout the semester, you will have a chance to obtain a maximum of 5 bonus marks by answering Top Hat questions and discussion topics that are randomly dispersed throughout lectures and sometimes assigned to you after class. For the Top Hat questions, the grade will be a combination of participating and answering questions correctly. You can follow your Top Hat grade in your Top Hat gradebook. The final grade will be transferred to CourseLink at the end of the semester. You will receive the full 5 bonus marks when obtaining a Top Hat grade of 85% or higher (i.e I “gift” you 25%). For a grade below 85%, the bonus marks will be adjusted accordingly (i.e a 70% will be a 95%, resulting in 0.95\*5 = 4.75 bonus marks).

**Final examination date and time:** December 12, 2017. 7pm - 9pm

## Final exam weighting: 20%

**Course Resources**

**Required Texts:**

*Climate Change Biology* (2011) Jonathan A. Newman, Madhur Anand, Hugh A.L. Henry, Shelley Hunt and Ze’ev Gedalof.

Held at the library reserve desk.

## Recommended Texts: N/A

**Lab Manual:** N/A

**Other Resources:**

D2L:

The instructor uses CourseLink for posting class announcements, hand-outs, slides from lectures, class readings, weekly quizzes, grades and other required and recommended materials that is relevant to this course. Please check this site often.

To phat:

We will be using the Top Hat (www.tophat.com) classroom response system in class. You will be able to submit answers to in-class questions using Apple or Android smartphones and tablets, laptops, or through text message. As cell coverage can be spotty on campus, I recommend connecting through the University of Guelph's wifi. Top Hat allows us to provide a more engaging and interactive environment, that ultimately helps your learning and boosts your understanding of core concepts. It also allows us to get immediate feedback from you and allows us to adjust the course content accordingly.

You can visit the Top Hat Overview (https://success.tophat.com/s/article/Student- Top-Hat-Overview-and-Getting-Started-Guide) within the Top Hat Success Center which outlines how you will register for a Top Hat account, as well as providing a brief overview to get you up and running on the system.

An email invitation will be sent to you by email, but if don’t receive this email, you can register by simply visiting our course website: https://app.tophat.com/e/139771 Note: our Course Join Code is 139771

Unfortunately, Top Hat requires a paid subscription, and a full breakdown of all subscription options available can be found her[e: www.tophat.com/pricing.](http://www.tophat.com/pricing)

Therefore, Top Hat is not manadatory to pass this course and participation is rewarded by bonus marks. However, I strongly recomment the use of Top Hat to facilitate our communication, to increase your learning experience and ultimately to result in a higher grade.

Should you require assistance with Top Hat at any time, due to the fact that they require specific user information to troubleshoot these issues, please contact their Support Team directly by way of email (support@tophat.com), the in app support button, or by calling 1-888-663-5491.

## Field Trips: N/A

**Additional Costs:**

You will have to cover the cost for printing your posters. The posters will cost a maximum of 30$. The costs of the posters will be shared among group members. Group size will be 5 – 6 students.

# Course Policies

## Grading Policies:

Assignments are to be submitted online via D2L before midnight on the due date. Assignments handed-in late, for which an extension has not been granted ahead of time, will lose 10% of the total marks for every day (or part thereof) that it is late. If you require an extension on an assignment, you must have a valid reason and contact Dr. Härri in advance of the due date.

## Course Policy on Group Work:

This course encourages group work and collaborative problem solving. The group stage of the midterm and the poster presentation require group work to complete the assessment. The future projections and the method piece should be written entirely by the student alone, should reflect the opinion of the student alone and should be the original work of the student. For group assignments, the completed assignment should contain only work which has been produced by members of the group in question. There will be a peer evaluation system for the poster presentations using the PEAR tool.

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

Electronic recording of classes is expressly forbidden without consent of the instructor. When recordings are permitted they are solely for the use of the authorized student and may not be reproduced, or transmitted to others, without the express written consent of the instructor.

# University Policies

## Academic Consideration:

The University of Guelph is committed to supporting students in their learning experiences and responding to their individual needs and is aware that a variety of situations or events beyond the student's control may affect academic performance. Support is provided to accommodate academic needs in the face of personal difficulties or unforeseen events in the form of Academic Consideration.

Information on regulations and procedures for Academic Consideration, Appeals and Petitions, including categories, grounds, timelines and appeals can be found in Section VIII (Undergraduate Degree Regulations and Procedures) of the Undergraduate Calendar.

## 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.

Detailed information regarding the Academic Misconduct policy is available in Section VIII (Undergraduate Degree Regulations and Procedures) of the Undergraduate Calendar.

## 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 Student Accessibility Services (SAS), formerly Centre for Students with Disabilities (CSD), as soon as possible.

For more information, contact SAS at 519-824-4120 ext. 56208 or email [sas@uoguelph.ca](mailto:sas@uoguelph.ca) or visit the Student Accessibility Services website (http:// [www.uoguelph.ca/csd/).](http://www.uoguelph.ca/csd/))

## Course Evaluation Information:

End of semester course and instructor evaluations provide students the opportunity to have their comments and opinions used as an important component in the Faculty Tenure and Promotion process, and as valuable feedback to help instructors enhance the quality of their teaching effectiveness and course delivery.

While many course evaluations are conducted in class others are now conducted online. Please refer to the Course and Instructor Evaluation Website for more information.

## Drop period:

The drop period for single semester courses starts at the beginning of the add period and extends to the Fortieth (40th) class day of the current semester (the last date to drop a single semester courses without academic penalty) which is listed in Section III (Schedule of Dates) of the Undergraduate Calendar.

The drop period for two semester courses starts at the beginning of the add period in the first semester and extends to the last day of the add period in the second semester.

Information about Dropping Courses can be found in Section VIII (Undergraduate Degree Regulations and Procedures) of the Undergraduate Calendar.