ENV337H1S – Human Interactions with the Environment
Winter 2020

Last Updated: December 17, 2019

Lecture:	Mondays 10am – 12noon The 12noon-1pm time slot will be used for complementary activities (i.e., documentaries), which will be announced sufficiently in advance (~2 weeks).
Location:	AB107
Tutorials:	Wednesdays: 10-11am SS1088 and 11am–noon SK348. Four tutorials are scheduled through the term (with complementary meetings/progress presentations).
Instructor:	Carlos Avendano, office ES1020; carlos.avendano@utoronto.ca
Office Hours:	Monday 12noon-1pm.
Teaching Assistant:	Susan Frye, ES2029; s.frye@mail.utoronto.ca
Office Hours:	Wednesdays at the tutorial times- when there are no tutorials.

Required Text:
There is no required hardcopy textbook for ENV337H. Readings and other sources are indicated in the lecture schedule. Readings can be acquired through the UofT Library online catalogue.

Course Evaluation

Midterm, 120 min in-class	February 24th	20%
Final Exam (open book)	April exam period	30%
Group Video "World Water Day"	March 13th	5%
Tutorial Projects:		45%
Biodiversity Assessment (10%)	*due* February 5th	
Water Footprint Estimation (15%)	*due* March 4th	
Individual Research Proposal (10%)	*due* March 25th	
Local Project Brochure (10%)	*due* April 3rd	

Introduction and Learning Objectives:
The impact of 7 billion people on the planet is enormous and challenges future generations. The interconnected systems of the planet means that as humans interact with their surrounding environments, they too will be influenced and impacted in turn. What are these impacts today and in future? What solutions and tools are available? What can we learn from environmental and cultural history? Using an integrated and interdisciplinary systems approach, we explore problems and solutions to the earth's limits to growth.

The course introduces students to Earth Systems interactions, and their limits to growth of human systems using an analytical perspective and, most importantly, how to critically analyze, quantify and solve problems arising from meeting these limits to growth.

Our learning objectives are to:

1. Familiarize you with Earth Systems, environmental processes, and ecological issues arising from human activities.
2. Understand the interconnectedness of these systems to each other and to human well being
3. Learn to integrate disparate issues with roots in natural sciences and social sciences, and
   to develop solutions to these issues.
4. Improve your critical thinking, analytical abilities and problem solving skills.
5. Improve your ability to conduct research, assemble information, and communicate the results of your research.

Lecture Topics and Tutorial Schedule

Wk	Date	Lecture Topic and Readings Schedule	Tutorials / others
1	**Jan 6**	**Introduction**.	**Tut No. 1.** The Water Footprint
2	**Jan 13**	**Are we in the Anthropocene?** Human dominated planet. Gaffney, O., Steffen, W. 2017. **The Anthropocene equation**. The Anthropocene Review. 4, 53–61. http://www.anthropocene.info	**Tut No. 2** Biodiversity
3	**Jan 20**	**Earth Sciences:** Planetary geodynamics. Solar forcing and plate tectonics. Frisch, W., Meschede, M., Blakey, R., 2011. **Contractional theory, continental drift and plate tectonics.** In: Plate Tectonics. Springer Berlin Heidelberg, Berlin, Heidelberg, pp. 1–13. Anderson, David E., Goudie, Andrew S. and Parker, Adrian G. 2013. **The Causes of Climatic Change**. In: Global Environments through the Quaternary: Exploring Environmental Change. In: D. Anderson, Goudie, and A. Parker (Eds). 2nd ed. Oxford University Press, pp. 298-325. https://www.sciencecourseware.org/eec/GlobalWarming/Tutorials/Milankovitch/	

Wk	Date	Lecture Topic and Readings	Tutorials
4	**Jan 27**	**Planetary Functioning:** Have we transgressed planetary thresholds? What are the Planetary Boundaries? Steffen, W., Richardson, K., Rockström, J., Cornell, S., Fetzer, I., Bennett, E., Biggs, R., Carpenter, S., 2015. **Planetary boundaries: Guiding human development on a changing planet.** Science 347: 6219. http://stockholmresilience.org/research/planetary-boundaries.html	
5	**Feb 3**	**Ecosystem theory:** Disturbance and Resilience. Rocha J.C., Biggs, G., Peterson. 2014. **Regime shifts: What are they and why do they matter?** Regime Shifts. Database. www.regimeshifts.org	*Tut No. 1. Biodiversity Due Feb 5th*
6	**Feb 10**	**Population growth:** Humans through the Quaternary Period. Consumption thresholds. Toth, G., Szigeti, C., 2016. **The historical ecological footprint: From over-population to over-consumption**. Ecological Indicators. 60, 283–291. https://ourworldindata.org/world-population-growth	**Tut No. 3.** Research proposal: Socio-ecological Systems
7	**Feb 17 Family Day**	***Reading Week***	
8	**Feb 24**	**Mid-term**	**Tut No. 4** Local Project
9	**Mar 2**	**Historical human interactions with the environment**: The Maya Civilization case study. Was there really a socio-ecological collapse? Socio-ecological resilience cases. Douglas, P.M.J., Demarest, A.A., Brenner, M., Canuto, M.A., 2016. **Impacts of Climate Change on the Collapse of Lowland Maya Civilization**. Annu. Rev. Earth Planet. Sci. 44, 613–645.	*Tut No. 2 The Water Footprint Due March 4th*

Wk	Date	Lecture Topic and Readings	Tutorials
10	**Mar 9**	**Human impacts on the environment:** What has happened since the Industrial Revolution? Gamble, R., Hogan, T., 2019. **Watersheds in watersheds: The fate of the planet's major river systems in the Great Acceleration**. Thesis Eleven 150, 3–25.	World Water Day Video *Due Mar 13th* *Videos will be shown in class and later posted in the School of Environment website* World Water Day is celebrated on March 22 http://www.worldwaterday.org
11	**Mar 16**	**Conservation Biology in a dynamic world**: Biodiversity beyond protected areas. Gillson, L., 2015. **Past, Present, and Future Climate Change: Can Palaeoecology Help Manage a Warming World?** In: Gillson, L. (Ed.), Biodiversity Conservation & Environmental Change. Oxford University Press, pp. 87–115.	
12	**Mar 23**	**Socio-Ecological Systems Restoration:** Mitigation or adaptation to climate change? Simonsen, S.H., Biggs, R., Schlüter, M., Schoon, M., Bohensky, E.L., Cundill, G., Dakos, V., Daw, T., Kotschy, K., Leitch, A.M., Quinlan, A., Peterson, G., Moberg, F., 2014. **Applying resilience thinking: Seven principles for building resilience in social-ecological systems.** Stockholm Resilience Centre. 20 p.	*Tut No. 3. Research proposal: Socio-ecological Systems* *due March 25th*
13	**Mar 30**	**The Great Acceleration:** Is a deceleration possible? Leff, E., 2017. **Power-Knowledge Relations In The Field Of Political Ecology**. Ambiente & Sociedade 20, 225–256.	**Tut No. 4** Feedback - Speed talks during tutorial periods

**Tut No. 4 Local Project Due April 3rd*

Important Dates
(http://www.artsci.utoronto.ca/current/course/timetable/1718_fw/2018_winter_dates**)**

Jan 6 – Classes begin in S courses.
Jan 16 – Waiting lists for S section code courses turned off at end of day.
Jan 17 - Last day to add or make section changes to S section code courses.
Feb 17 – Family Day – University closed.
Feb 17-21 – Winter Reading Week – no classes.
Mar 15 - Last day to cancel S section code courses without academic penalty; last day to add or remove a CR/NCR option for S section code courses.
Apr 3 – Winter term classes end; last day to request LWD from S code courses.
Apr 6-25 – Examination period.
Apr 10 – Good Friday – University closed.

COURSE POLICIES

Regarding attendance for mid-term:
For students who miss the regularly scheduled midterm on February 24th, 2020, the instructor must be notified within 48 hours and a completed University of Toronto Medical Certificate must be presented within a week before any special consideration (such as a deferred midterm) will be considered.

Submission of tutorial projects:
It will be announced in advance whether tutorial projects are due in **tutorial,** in **class** or through **online submission**.

A UofT Student Medical Certificate must be submitted for a missed tutorial before any special consideration will be considered.

Any disputes or questions on graded material must be brought to the attention of the TA or instructor within 2 weeks of return or posting, otherwise will be considered final.

We will be using Turnitin.com for submission of project reports in this course. Normally, students will be required to submit their reports to **Turnitin.com** for review of textual similarity and detection of possible plagiarism. In doing so, students will allow their reports to be included as source documents in the **Turnitin.com** reference database, where they will be used solely for the purpose of detecting plagiarism. The terms that apply to the University's use of the Turnitin.com service are described on the **Turnitin.com** web site.

If a student does not wish to participate in Turnitin, the student MUST advise the instructor immediately as alternate arrangements for screening the assignment must be arranged.

To avoid late penalties the essay assignment must be submitted to the Turnitin.com site before **midnight** of reports due dates**.** You will need to visit the Turnitin.com website and follow student instructions to submit your reports for vetting. You will be supplied with the code and password to identify the appropriate course to which the assignment should be submitted.

Formatting of reports for the different project reports will be specified during tutorials.

Late penalties on reports or video
The late penalty will be 2.5% of the assignment grade per day late, including weekends and will only be waived with the accompaniment of a completed official University of Toronto **Verification of Student Illness or Injury Form** which can be found at: **http://www.illnessverification.utoronto.ca/**.

Please note that the certificate must cover the period of time you missed, e.g. the week before the assignment is due, etc. and must supply sufficient detail and appropriate support to warrant any special consideration.

Accessibility Needs
The University of Toronto is committed to accessibility. If you require accommodations for a disability, or have any accessibility concerns about the course, the classroom or course materials, please contact Accessibility Services as soon as possible: disability.services@utoronto.ca or http://studentlife.utoronto.ca/accessibility .

Academic Integrity
The following is taken from the Faculty of Arts and Science Academic Integrity website (http://www.artsci.utoronto.ca/osai/students):

Academic integrity is fundamental to learning and scholarship at the University of Toronto. Participating honestly, respectfully, responsibly, and fairly in this academic community ensures that the U of T degree that you earn will be valued as a true indication of your individual academic achievement, and will continue to receive the respect and recognition it deserves.

Familiarize yourself with the University of Toronto's *Code of Behaviour on Academic Matters* (http://www.governingcouncil.utoronto.ca/policies/behaveac.htm). It is the rule book for academic behaviour at the U of T, and you are expected to know the rules. Potential offences include, but are not limited to:

In papers and assignments:

- Using someone else's ideas or words without appropriate acknowledgement.
- Copying material word-for-word from a source (including lecture and study group notes) and not placing the words within quotation marks.
- Submitting your own work in more than one course without the permission of the instructor.
- Making up sources or facts.
- Including references to sources that you did not use.
- Obtaining or providing unauthorized assistance on any assignment including
    - working in groups on assignments that are supposed to be individual work,
    - having someone rewrite or add material to your work while "editing".
- Lending your work to a classmate who submits it as his/her own without your permission.

On tests and exams:

- Using or possessing any unauthorized aid, including a cell phone.
- Looking at someone else's answers
- Letting someone else look at your answers.
- Misrepresenting your identity.
- Submitting an altered test for re-grading.

Misrepresentation:

- Falsifying or altering any documentation required by the University, including doctor's notes.
- Falsifying institutional documents or grades.

The University of Toronto treats cases of academic misconduct very seriously. All suspected cases of academic dishonesty will be investigated following the procedures outlined in the *Code*. The consequences for academic misconduct can be severe, including a failure in the course and a notation on your transcript. If you have any questions about what is or is not permitted in this course, please do not hesitate to contact me. If you have questions about appropriate research and citation methods, seek out additional information from me, or from other available campus resources like the U of T Writing Website. If you are experiencing personal challenges that are having an impact on your academic work, please speak to me or seek the advice of your college registrar.

See also the handout "How Not to Plagiarize," Margaret Proctor, 2009, available online at http://www.writing.utoronto.ca/advice/using-sources/how-not-to-plagiarize

Communication

You are encouraged to ask questions in class and during office hours. If you would like to discuss class material further please come to my office hours. If you have a conflict with those times, please contact me to set-up a time when we can meet.

E-mail can be used to make appointments and address brief questions but should not be viewed as an alternative to meeting with the professor during office hours. Weekend emails may be sporadic so please plan accordingly.

1. Always use your University of Toronto e-mail address (…@utoronto.ca) for all course- related communications. Other e-mail addresses may be filtered as spam and we do not promise to respond to them.
2. Please include the course code (e.g., ENV337) as part of your subject line, and include your full name and student number in the body of the e-mail.
3. Please read the course handouts and check the course online site before e-mailing a question, to make sure that it hasn't already been answered. Questions that can be answered by reading information in Quercus, will not be answered.

Please e-mail the professor concerning a lecture or assignment-related query.

The use of **cellphones is not allowed** during lectures, unless indicated to perform an online activity.