

# Integrated Science 2001F: Sustainability and the Environment

## 1. Course Information

IntegSci 2001F: Sustainability and the Environment, Fall 2021

Class hours: Tuesday, 6:30-9:30pm, in UCC-56

Tutorial hours: Wednesday, 12:30-1:30pm, in UCC-56

Office hours: Wednesday 1:30-2:30pm in hallway, or NCB 301F (please find me after tutorial)

### List of Prerequisites

None

### List of Antirequisites

Environmental Science 1021F

## 2. Instructor Information

Instructors	Email	Office	Office Hours
Dr. Tim Hain (he/him)	thain@uwo.ca	NCB 301F	Wednesday, 1:30-2:30pm Additional time available by request

Students must use their Western (@uwo.ca) email addresses when contacting their instructors. Include the course name or number in the subject line of your email so that it is clear what course you are asking about.

## 3. Course Syllabus, Schedule, Delivery Mode

An exploration of socio-scientific issues facing humanity, including climate change, world hunger, energy/water availability and habitat loss. The interdisciplinary nature and interconnectivity of these issues will be discussed. Students will access the scientific literature and government reports, critically evaluate the data presented and use it to develop cogent arguments.

### Learning outcomes

Classroom and tutorial sessions are intended to help students develop skills in:

1. Performing a literature review on environment and sustainability topics
2. Critically evaluating the quality of research papers
3. Summarizing ideas in environment and sustainability, in a way that is suitable for a scientific as well as a general audience
4. Writing a research paper on environment and sustainability
5. Sharing ideas with peers in a moderated discussion setting
6. Provide and incorporate feedback on your written work in a collaborative setting
7. Communicate scientific ideas with other scientists from outside their area of specialty

Furthermore, by the end of the course, students will be expected to be able to discuss and answer questions based on:

1. The value provided by the environment
2. The growth of natural, including human, populations and why population growth leads to environmental challenges
3. The types of terrestrial and marine environments seen on earth, and explain what the threats to these environments are
4. The structure and composition of the atmosphere, and explain why pollution presents a challenge to a normally-functioning atmosphere
5. The causes and consequences of climate change, and know the policy approaches taken to address climate change
6. The consequences, both positive and negative, of various energy sources
7. The composition of soils and how advances in agricultural practices have led to an increased ability to feed a growing population
8. The value of forest, mining, and freshwater resources, and the threats presented to the sustainability of these resources

For each lecture, a list of learning objectives will be posted to the course website in advance of the class. Those learning objectives may be changed following class if either 1) a topic was not covered; or 2) a discussion covered some unplanned but useful information. I will mention if a discussion point will be added to the learning objectives during the lecture as it comes up.

### **Lecture schedule**

The lecture topics presented below are *tentative* and may change as the semester develops. Required (testable) readings are indicated in bold text.

	<b>Tuesday</b>	<b>Wednesday</b>
<b>Week 1</b> Sept 7 and 8	*No school*	Nothing scheduled; but you are welcome to come meet me
<b>Week 2</b> Sept 14 and 15	Introduction + Environmental thought	<i>Where do journal articles come from?</i>
<b>Week 3</b> Sept 21 and 22	Population growth and the environment	<i>Discussion of writing assignments: Critique and Annotated Bibliography</i>
<b>Week 4</b> Sept 28 and 29	Terrestrial diversity	<i>A chance to discuss the critique with me (by the end of today, you should have chosen an article)</i>
<b>Week 5</b> Oct 5 and 6	Aquatic diversity + water resources	<i>A chance to discuss the critique with me</i>
<b>Week 6</b> Oct 12 and 13	Atmospheric processes + air pollution	<i>Drafts of critiques due (1%), give feedback on your partner's critique (4%)</i>
<b>Week 7</b> Oct 19 and 20	Climate change	<i>Polished critique due Friday, October 22 by 5pm (10%).</i>

We will watch [this video](#), which will be testable on the final exam.

<b>Week 8</b> Oct 26 and 27	Midterm (25%)	No class
<b>November 1-7 – Reading week (no class)</b>		
<b>Week 10</b> Nov 9 and 10	Conventional energy resources + mining	<i>A chance to talk about the Annotated Bibliography and your project ideas with me</i>
<b>Week 11</b> Nov 16 and 17	Alternative energy resources	<i>A chance to get peer-review on your writing; Annotated Bibliography due by 5pm (worth 5%)</i>
<b>Week 12</b> Nov 23 and 24	Soil + food resources	<i>Hints on writing, particularly for the final report</i>
<b>Week 13</b> Nov 30 and Dec 1	Genetic engineering + forestry	<i>No formal tutorial; an opportunity to meet with me about your final report</i>
<b>Week 14</b> Dec 7 and Dec 8	Urbanization + transportation <i>Final report due (25%)</i>	<i>Examination period begins</i>

#### **Contingency plan for an in-person class pivoting to 100% online learning**

In the event of a COVID-19 resurgence during the course that necessitates the course delivery moving away from face-to-face interaction, all remaining course content will be delivered entirely online, either synchronously (i.e., at the times indicated in the timetable) or asynchronously (e.g., posted on OWL for students to view at their convenience). The delivery mode will be decided based on the circumstances, but my preference is to deliver the material synchronously. The grading scheme will **not** change. Any remaining assessments will also be conducted online as determined by the course instructor.

## **4. Course Materials**

There is no assigned textbook for this course. Many of the images used in lecture are found in either the 2<sup>nd</sup> or 3<sup>rd</sup> edition of *Environment: The Science Behind the Stories* by Withgott *et al.*

During the term (October 20), I will assign you one online video to watch. I ask that you watch that video on your own before that tutorial session. There will be an opportunity to ask questions in the tutorial that day. The material from that video is testable.

Students are responsible for checking the course OWL site (<http://owl.uwo.ca>) 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.

All course material will be posted to OWL: <http://owl.uwo.ca>. I recommend referring to the Learning Objectives associated with each lecture while you study: only material that is related to the learning objectives will be tested.

If students need assistance with the course OWL site, 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

Critique	October 13 by beginning of tutorial To be done in October 13 tutorial	1% draft 4% comments to others 10% final version
Annotated bibliography	Friday, October 22 by 5pm Wednesday, November 17 by 5pm	5%
Final report	December 7 in class (7 pages)	25%
Midterm	October 26 (during class time)	25%

### **Written assignments**

For all written work, I encourage you to discuss your ideas with me. Talking about your ideas often helps with identifying the strengths of your argument, and gives you some perspective on the argument's novelty.

For the annotated bibliography and the critique, you will have an opportunity in the classroom tutorial to seek feedback from peers before submitting a polished copy. For the annotated bibliography, you can take an extra day to revise your bibliography, and for the critique you will have a week to incorporate your partner's comments.

### **Critique**

The critique has two purposes: to critically evaluate the quality of published research, and to develop your ability to communicate scientific ideas to non-experts. In this class, the non-experts are your classmates who are outside your particular scientific discipline. You will choose a paper of your own to read, summarize, and critique. This assignment has three steps: write a draft, provide comments on a classmate's draft, and submit a polished copy of your critique. A further discussion of the Critique assignment will be presented in class and posted to the course website.

### **Annotated bibliography**

The annotated bibliography is to help you get on the right track with your final research project. You will submit this assignment using the Assignments section on OWL – no paper copy is required. In an annotated bibliography, you are expected to give a short outline of your final paper, and include at least five references, of which a minimum of two should be primary articles (the difference between primary and secondary articles will be described in class) and at least one should be a secondary source. With each of your references, you should give at least one piece of information that clearly shows how the article contributes to the point you are trying to make in your final paper. An example will be provided on the course website.

The annotated bibliography will be 1-2 pages long. There are not marks for format, but there are for content, spelling and grammar. Try to follow the referencing format from the Journal of Environmental Sciences. *The annotated bibliography is worth 5% of your final mark.*

### **Final report**

The final report will be 7 pages, written about a topic of your choice. It should draw on information from primary and secondary articles. You are encouraged to speak to me about the topic of your report as soon as you have one in mind. Make sure that you include a main point to your report that is easy to identify, and all of your points should be directly related to that main point. You should include at least 6 references. More guidelines on the final report are posted to the course website.

### **Midterm and exam**

There is one in-class midterm and a cumulative final exam in this course; all exams are compulsory. Students are responsible for material presented/discussed in lecture and tutorial, including the group presentations and the assigned readings. You can expect the exams to include multiple choice and short answer questions.

There will be one makeup test date for both the midterm and the final exam. The makeup midterm will be on Friday, October 29 at 12:30pm. The makeup date for the final exam will be scheduled after the release of the final exam schedule.

The purpose of tests is to give you an opportunity to show off what you have learned. This involves presenting relevant and correct information, and filtering out irrelevant information. Marks may be deducted for presenting incorrect information.

### **Course expectations**

- All assignments should be submitted by the time mentioned in the schedule shown above
- Written assignments will be submitted electronically to Turnitin (statement in policies below)
- Students will have unlimited submissions to Turnitin
- Rubrics will be used to evaluate assessments and the mark value for lab questions are included in the instructions

### **Late assignments**

Assignments submitted after the advertised due date and time will be penalized 10% per day. Special consideration will be given for late assignments, but any assignments submitted more than two weeks late, or after the final exam will receive a mark of 0. **For this reason, make sure that you have backed up your assignments in the cloud or on an external storage device.**

## **6. Student Absences**

### **Academic Consideration for Student Absences**

Students who experience an extenuating circumstance (illness, injury or other extenuating circumstance) sufficiently significant to temporarily render them unable to meet academic requirements may submit a request for academic consideration through the following routes (**NOT through their course instructors**):

- (i) Submitting a Self-Reported Absence (SRA) form provided that the conditions for submission are met. To be eligible for a Self-Reported Absence:
  - an absence must be no more than 48 hours
  - the assessments must be worth no more than 30% of the student's final grade
  - no more than two SRAs may be submitted during the Fall/Winter term
- (ii) For medical absences, submitting a Student Medical Certificate (SMC) signed by a licensed medical or mental health practitioner to the Academic Counselling office of their Faculty of Registration.
- (iii) Submitting appropriate documentation for non-medical absences to the Academic Counselling office in their Faculty of Registration.

Note that in all cases, students are required to contact their instructors within 24 hours of the end of the period covered.

Students should also note that individual instructors are not permitted to receive documentation directly from a student, whether in support of an application for consideration on medical grounds, or for other reasons. **All documentation required for absences that are not covered by the Self-Reported Absence Policy must be submitted to the Academic Counselling office of a student's Home Faculty.**

For the policy on Academic Consideration for Student Absences – Undergraduate Students in First Entry Programs, see:

[https://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/accommodation\\_illness.pdf](https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_illness.pdf)

and for the Student Medical Certificate (SMC), see:

[http://www.uwo.ca/univsec/pdf/academic\\_policies/appeals/medicalform.pdf](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf)

### **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>

### **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).

If a student fails to write a scheduled Special Examination, the date of the next Special Examination (if granted) normally will be the scheduled date for the final exam the next time this course is offered. The maximum course load for that term will be reduced by the credit of the course(s) for which the final examination has been deferred. See the Academic Calendar for details (under [Special Examinations](#)).

## 7. Land acknowledgment

We acknowledge that Western University is located on the traditional lands of the Anishinaabek, Haudenosaunee, Lūnaapéewak and Attawandaron peoples, 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 (e.g. First Nations, Métis and Inuit) whom we recognize as contemporary stewards of the land and vital contributors of our society.

## 8. Accommodation and Accessibility

### 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 policy on Academic Accommodation for Students with Disabilities 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)

## 9. Academic Policies

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

In accordance with policy,

[https://www.uwo.ca/univsec/pdf/policies\\_procedures/section1/mapp113.pdf](https://www.uwo.ca/univsec/pdf/policies_procedures/section1/mapp113.pdf)

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.

Non-programmable calculators are permitted for the midterm and final exam.

**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](http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf)

The work you submit must be your own. Although it is normal to work with a partner on assignments, you must put your submission in your own words. If you have any questions about what constitutes plagiarism, consult the above website or discuss with your instructor before submitting any work to be graded. Remember to cite the ideas of others if you are using their published work in your assignments.

Turnitin ***aids*** in identifying plagiarism. 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>).

Computer-marked multiple-choice tests and exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

## 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 interact with their instructor and fellow students with courtesy and respect. The instructor will first issue a warning if he observes any behaviour that is or might be considered offensive. Subsequent infractions will result in a grade penalty. The warning will mention the extent of the penalty for a similar infraction.
- 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 without explicit permission
- 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

## 10. Support Services

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

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 (519) 661-2147 if you have any questions regarding accommodations.

Learning-skills counsellors at the Student Development Centre (<http://www.sdc.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.

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

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