

EnvirSci 1021F - Course Outline

Environmental Science & Sustainability

1. Course Information

Course Information

Course name and number: ENVIRSCI 1021F - Environmental Science and Sustainability

Academic term: Fall 2026/2027

Delivery Mode: In person

Scheduled Time: Wednesdays, 6:30 - 9:30 p.m.

Location: Main Campus, Natural Sciences Centre – Room 1

Lecture/Tutorial Hours: 3 hours per week

List of Prerequisites

None

2. Instructor Information

Instructor	Email	Office Hours
Dr. Gabor Sass	gabor.sass@uwo.ca	By appointment - in person or Zoom

Teaching assistants	Email	Office Hours
Das, Tiasha	tdas22@uwo.ca	By appointment - in person or Zoom
Feng, Jiali	jfeng252@uwo.ca	By appointment - in person or Zoom
Fortes, Ana	alorenz9@uwo.ca	By appointment - in person or Zoom
Kosmides, Lexi	akosmide@uwo.ca	By appointment - in person or Zoom

You will be assigned to a specific TA based on your surname who will mentor you throughout the scientific literacy and communication aspect of the course. Your TA will act as your first point of contact for any inquiries.

Students must use their Western (@uwo.ca) email addresses when contacting the instructor or teaching assistants. **Please include ENVIRSCI 1021F in the subject line.** Questions of general interest should be posted to the course discussion area on OWL Brightspace; personal or confidential matters should be sent by email.

Office hours are by appointment and may be held in person or by Zoom. Students are encouraged to contact the instructor or their assigned TA early if they need help with course content, scientific writing, or course expectations.

3. Course Syllabus, Schedule, Delivery Mode

Course Syllabus (from Academic Timetable): *An overview of the science underlying key environmental issues (e.g. climate change, loss of biodiversity and ecosystem function, air and water pollution, and resource use) and how each issue impacts environmental sustainability from the local to global scale. Extra Information: 3 lecture/tutorial hours.*

Environmental problems are rarely just environmental problems. Climate change, biodiversity loss, food and water security, pollution, resource extraction, energy use, and urbanization emerge from interactions among ecological systems, human behaviour, technology, economics, politics, and culture. This course introduces the science needed to understand these interactions and to evaluate possible solutions. We will examine how ecosystems function, how human activities alter natural processes, and how scientific evidence can be used to understand and respond to major environmental challenges.

A central theme is systems thinking: environmental problems have multiple causes, operate across different spatial and temporal scales, involve feedbacks and trade-offs, and rarely have a single solution. Throughout the course, current environmental issues and case studies will connect scientific concepts to decisions being made at local, regional and global scales.

Course schedule:

Week	Dates	Topic	Readings	Due
1	Sep 9	Introduction to the Course: The Anthropocene	Ch 1	---
2	Sep 16	Making Sense of our World: Environmental, Science and Information Literacy	Ch 1	Quiz #1
3	Sep 23	How Nature Works: Ecology and Thinking in Wholes	Ch 2	Quiz #2
4	Sep 30	National Day for Truth and Reconciliation – No Class	---	---
5	Oct 7	The Age of Extinction: Evolution and Biodiversity	Ch 3	Quiz #3
6	Oct 14	Reading Week – No Class	---	---
7	Oct 21	People on a Full Planet: Population and Environmental Health	Ch 4	Quiz #4; Writing project – Part 1
8	Oct 28	Midterm test – In Class	Ch 1 - 4	Midterm test
9	Nov 4	Sharing a Finite Planet: Resources, Economics and Policy	Ch 5	Quiz #5
10	Nov 11	Blue Planet: Water Resources	Ch 6	Quiz #6
11	Nov 18	What Our Stuff is Made Of: Geological and Land Resources	Ch 7	Quiz #7
12	Nov 25	Feeding the World: Food Resources	Ch 8	Quiz #8
13	Dec 2	Fueling Civilization: Energy Resources	Ch 9, 11	Quiz #9
14	Dec 9	Sewer in the Sky: Air Pollution and Climate Change	Ch 10	Writing project – Part 2 (Dec7)

Note: The schedule may be adjusted to accommodate guest speakers, current environmental events, or particularly relevant case studies. Any changes will be announced on OWL Brightspace.

Learning Outcomes:

By the end of this course, students will be able to:

- **Explain fundamental ecological and sustainability concepts** relevant to contemporary environmental problems.
- **Analyze major environmental challenges** and connect human activities to environmental consequences from local to global scales.
- **Apply systems thinking** to identify interactions, feedbacks, trade-offs, and possible interventions in human-environment systems.
- **Evaluate environmental information and evidence** by assessing sources, interpreting data, and distinguishing well-supported conclusions from unsupported claims.
- **Develop and communicate evidence-based environmental arguments** through independent research, structured writing, and discussion.

Delivery Mode:

This course is delivered in person. The weekly three-hour class combines short lectures, active learning, case studies, discussion, environmental data interpretation, and scientific-writing activities. Students should complete assigned readings and online learning activities before class using the Macmillan **Achieve** online learning platform. The weekly quiz (delivered through Achieve) will test your knowledge of the assigned foundational material. This way class time can emphasize understanding, application, analysis, discussion, and real-world environmental issues. Where Teaching Assistants are assigned, they will serve not only as graders but also as mentors in the scientific-literacy and communication component of the course.

Key Sessional Dates:

- Classes begin: September 9, 2026 (our first class)
- National Day for Truth and Reconciliation: September 30, 2026 - no class
- Fall Reading Week: October 10 - 18, 2026
- Midterm Test: October 28, 2026, 6:30 – 8:30pm
- Last day to withdraw from a Fall 12-week course without academic penalty: November 30, 2026
- Classes end: December 9, 2026 (our last class)
- Study Day: December 10, 2026
- Exam period: December 11 - 22, 2026

4. Course Materials

Textbook and Other Learning Materials

- **Required textbook:** Students need to purchase ONE of these editions.

Environmental Science for a Changing World

eBook with Achieve 150 Day Access

Author: Karr, Edition: 4E, UWO Bookstore ISBN: 9781319496753, Price: \$94.00

Environmental Science for a Changing World

Print Textbook with Achieve 150 Day Access

Author: Karr, Edition: 4E, UWO Bookstore SKU: 9781319570224, Price: \$158.10

Bookstore website: <https://tinyurl.com/w9taxwxk> (prices same as above)

Publisher's website: <https://tinyurl.com/yc5b6547> (price may differ from the bookstore)

Second-hand or older editions will not be sufficient. Access to the Macmillan Achieve Learning Platform is required. The print version is not required.

- **Technical Requirements:** A device connected to the internet and able to run the following software in addition to Microsoft software such as Word, PowerPoint, and Excel.

Achieve

Achieve technical requirements: <https://tinyurl.com/yvdv4v6u>

iClicker

This class will use iClicker Cloud, a student response system for you to answer questions about the course content and receive immediate feedback. You can access iClicker Cloud by downloading the iClicker Student app to your mobile device or access it from the iClicker site (iclicker.com) through a laptop. Further instructions will be provided on OWL and in class.

iClicker System requirements: <https://tinyurl.com/bd33ku68>

Brightspace

All course material will be posted to OWL Brightspace: <https://westernu.brightspace.com/>

Students are responsible for checking the course OWL Brightspace site regularly for news and updates. This is the primary method by which information will be disseminated to all students in the class.

If students need assistance with the course OWL Brightspace site, they can seek support on the [OWL Brightspace 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

Grading Scheme and Assessment Dates

The overall course grade will be calculated as listed below:

- | | | |
|--|---|------------|
| • Participation | - | 10% |
| ○ Achieve preparation (5%) | | |
| ○ iClicker in-class participation (5%) | | |
| • Weekly Quizzes | - | 10% |
| ○ 9 online quizzes (best 7 out of 9) | | |
| • Midterm Test | - | 20% |
| ○ 2 hours, Wednesday October 28 th in-class | | |
| • Final Exam | - | 30% |
| ○ (3 hours, Time and place TBA, in-person) | | |
| • Environmental Science Writing Project | - | 30% |
| ○ Part 1 due by October 21 st (10%) | | |
| ○ Part 2 due by December 7 th (20%) | | |

I. Participation [10%]

Participation is a fundamental part of the learning environment. Regular attendance and active participation are expected. In order to help you prepare for each lecture, please read the assigned readings from the textbook and answer questions in the Achieve learning platform.

Achieve Preparation (5%) – 10 preparatory activities will be offered and are due the Monday before the class. The best 8 will determine this component of the grade. Students may therefore miss up to two without penalty or an Academic Consideration request. Since this is a take-home assignment, the 48-hour no-late-penalty period applies.

In-Class Participation/iClicker (5%) – 10 in-class participation opportunities will be recorded. The best 8 will determine this component of the grade. Students may therefore miss up to two without penalty or an Academic Consideration request.

II. Weekly quizzes [10%]

Every week you will have to complete a quiz structured to test your basic comprehension of the material by Friday evening (at 11:59pm) using the Achieve learning platform (the firm cutoff after the 48-hour no-late-penalty period will be Sunday night at 11:59pm). Some of the questions from the quizzes may make it onto the midterm test and final exam. The final quiz mark will be based on your top 7 quiz marks.

III. Midterm test [20%] and Final exam [30%]

There will be one two-hour midterm test (worth 20%) and a final examination (30%). The midterm test (2 hours) will be held on October 28th in class. The final examination (3 hours) will be scheduled by the Registrar during the December examination period. The examinations will include questions from material covered in lectures, assigned readings, in-class exercises and videos. The final examination will include material from the entire term. The format of the examinations will be a combination of multiple choice, short and long answer type questions. No electronic devices (e.g. laptop computers, cell phones, etc.) will be allowed during an examination.

IV. Environmental Science Writing Project [30%]

This is an essay course with a significant writing component in which both the content and the quality of your writing will be assessed. You will gather information, analyze it and write a scientific article on the theme of one major environmental issue (look for ideas in journals such as *Frontiers in Ecology and the Environment*). I will provide you guidance regarding your writing assignment and help you find writing assistance if needed.

Part 1 – Mind map, Problem statement and Annotated bibliography (10%): To keep you on track with your research, you will have to submit a hand-drawn mind map, a ½-page problem statement identifying the context of the issue, your proposed topic and title, your research question and an annotated bibliography through OWL-Assignments by October 21st. A mind map is a visual representation of the major ideas associated with your environmental issue and the connections among them. Annotated bibliographies are short summaries (5-8 sentences) of the reference works you are using to base your article on. They should also include 1-2 sentences on how that particular reference was useful to develop your arguments in your own paper. You are expected to include at least 7 references which should include both peer reviewed scientific articles (minimum four) as well as book chapters and government reports. This part of the term project should be 5-6 pages (one annotation for each of 7 sources + article outline + mind map) long and will count for 10% of your final mark. Turnitin will be used on all assignments to check for originality (i.e., the entire assignment needs to be written in your own words).

Part 2 - Final submission (20%): The due date for Part 2 of the writing project is December 7th. The article should answer your research question with valid facts and arguments and be no more than 8 pages long (double-spaced) including references, tables and figures. Only include additional information if they strengthen a point you are making in the paper. There should be a minimum of 7 references including at least 4 scientific articles (from peer-reviewed journals). It is very important to give credit to what others have written or created. Please use APA style for in-text citations and reference citation formatting. Turnitin will be used on all assignments to check for originality (i.e., the entire assignment needs to be written in your own words).

Essential Learning Requirements

Because ENVIRSCI 1021F is an essay-designated course, students must demonstrate minimal competence in essay writing to pass the course. The Environmental Science Writing Project is therefore an essential learning requirement.

- Students must submit both Parts of the writing project and must achieve at least 50% on the Environmental Science Writing Project as a whole.
- The writing project assesses research, synthesis, argumentation, scientific communication, and revision skills that cannot be fully replaced by the midterm or final examination.

Students who do not complete sufficient written work to demonstrate the essential writing requirement will not meet the requirements of the course. Where circumstances prevent completion of this essential requirement, the student may seek a Request for Relief from Academic Decision. An

Incomplete (INC) standing may be granted where appropriate, allowing the outstanding essential requirement to be completed as directed by the Faculty.

Use of Generative AI Tools

Unless explicitly permitted below or in the instructions for a specific assessment, generative AI tools are not permitted in assessed work.

Weekly quizzes, the midterm test, the final examination, and assessed in-class activities: **Generative AI is not permitted.**

Environmental Science Writing Project: **Limited generative AI use is permitted** for brainstorming possible topics, refining a research question, generating search terms, suggesting alternative organizational structures, explaining difficult background concepts, and providing feedback on clarity or grammar in text already written by the student. Generative AI may not be used to write sentences, paragraphs, or sections submitted as the student's own work; generate the paper's analysis or argument; summarize sources the student has not personally located and read; or fabricate or substitute for references. Students should be aware that all Generative AI platforms (like ChatGPT) can produce inaccurate information, misleading claims, and fabricated citations. Students remain responsible for verifying all information and sources used in their work.

Where generative AI is used for the Writing Project, students must include a brief AI-use statement identifying the tool and version, the prompts used, and how the output contributed to the work. The instructor may use generative AI to assist with drafting or reviewing instructional materials, practice questions, or rubrics, but all AI-assisted material will be reviewed by the instructor. Generative AI will not independently determine student grades.

Information about Missed Coursework

Students must familiarize themselves with the *University Policy on Academic Consideration – Undergraduate Students in First Entry Programs*, posted on the Academic Calendar:

https://uwo.ca/univsec/pdf/academic_policies/appeals/academic_consideration_Sep24.pdf,

This policy does not apply to requests for Academic Consideration submitted for **attempted or completed work**, whether online or in person. The policy also does not apply to students experiencing longer-term impacts on their academic responsibilities. These students should consult [Accessible Education](#).

For procedures on how to submit Academic Consideration requests, please see the information posted on the Office of the Registrar's webpage:

https://registrar.uwo.ca/academics/academic_considerations/

All requests for Academic Consideration must be made within 48 hours after the assessment date or submission deadline.

Midterm and Final Exam (if missed)

This course has one midterm test and a cumulative final examination. There is no makeup test for a missed midterm due to illness or other personal circumstances. If a student misses the midterm, its weight will shift automatically to the final examination; no Academic Consideration request is required.

In addition, if the student's final-exam percentage is higher than their midterm percentage, the final-exam percentage will replace the midterm's weight in calculating the course grade.

The only exception is an early sitting, offered solely for a university-sanctioned schedule conflict (e.g., conflict of two midterms, Varsity competitions) or a religious accommodation that prevents a student from writing the midterm at its scheduled time. If a student requires this accommodation, they must notify their instructor in writing no later than one week before the test. No other circumstance, including illness, qualifies for an early sitting or makeup; these are addressed through the automatic reweighting described above.

Assignments (if missed)

The Environmental Science Writing Project consists of two staged submissions: Part 1 (10%) and Part 2 (20%). Both parts contribute to the essential writing outcomes of this essay-designated course and must be completed as described under Essential Learning Requirements. Each submission has an automatic 48-hour no-late-penalty period following the stated deadline. Students do not submit an Academic Consideration request for a missed assignment or deadline. After the 48-hour no-late-penalty period, no further submissions will normally be accepted. Because the Writing Project assesses essential essay-writing outcomes that cannot be demonstrated through the midterm or final examination, failure to complete sufficient written work may mean that the essential learning requirements of the course have not been met. See Essential Learning Requirements above.

Quizzes (if missed)

This course has 9 online quizzes. The best 7 quiz grades will be used to calculate the 10% quiz component. Students who miss up to two quizzes do not need to request Academic Consideration; the missed quizzes simply do not count. If fewer than seven quizzes are completed, the missing positions needed to make seven are recorded as zero. Students are encouraged to complete all quizzes, even when imperfect, because partial credit is preferable to a zero. If the cumulative final-exam percentage is higher than the quiz-component percentage, the final-exam percentage will replace the quiz-component percentage in calculating the course grade.

Participation (Achieve and iClicker) (if missed)

Achieve Preparation (5%): Ten preparatory activities will be offered. The best 8 will determine this component. Students may miss up to two without penalty or an Academic Consideration request.

iClicker Participation (5%): Ten in-class participation opportunities will be offered. The best 8 will determine this component. Students may miss up to two without penalty or an Academic Consideration request.

Deadlines: The 48-Hour No-Late-Penalty Period

All take-home assignments and quizzes, with a stated due date include an automatic 48-hour period after the deadline during which students may still submit without a late penalty. For example, if an assignment is due on November 5, they may submit it until November 7 without penalty. After this 48-hour period, no further submissions will be accepted, and students do not need to request Academic Consideration for a missed deadline; their grade for this component will be calculated as described above.

Special Examination

Per university policy, Academic Consideration requests with supporting documentation are required for the final examinations scheduled during official examination periods by the Registrar's Office.

If the student has been approved by the Academic Advising Office to write a Special Examination (SPC) and the final exam is their only outstanding course component, an SPC will be assigned to them and scheduled by the instructor per university policy.

If the student misses their SPC exam and is approved for Academic Consideration, they will be withdrawn from the course without academic penalty. If they experienced extenuating circumstances such as prolonged illness, they may appeal to the Associate Dean (Academic), on a case-by-case basis, for the opportunity to write the final exam the next time the course is offered. An outstanding SPC will reduce their course load for the term in which the exam is deferred, as outlined in the [Definitions of Types of Examinations](#) policy.

If the student misses their SPC exam and Academic Consideration is not approved, or was not requested, they will receive a grade of zero on the exam.

6. Additional Statements

6.1 Religious Accommodation

When a recognized religious holiday either requires a student to be absent from the University, or requires or prohibits an activity that makes it impossible for them to complete an academic requirement scheduled that day, they are entitled to accommodation. No student will be penalized for an absence for religious reasons, and an alternative means of satisfying the requirement will be arranged. This accommodation is provided in accordance with the University's policy on Accommodation for Religious Holidays:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_religious.pdf

The student should submit their requests through the Student Absence Portal (SAP), identifying the conflict and the specific course component(s) affected (e.g., test, midterm, exam).

Midterms and Tests: If a religious observance conflicts with a midterm test, they must submit their request no later than **one week** before the test. Their instructor will arrange an early sitting of the test. As set out above, no makeup test is offered for any other reason; this early sitting is available specifically for this accommodation.

Final Examinations: If a religious observance conflicts with the final exam, the student must submit their request no later than **two weeks** before the exam. Their instructor will arrange a Special Examination to take place no later than one month after the end of the examination period.

Students are responsible for finding out what was covered in any class they miss due to a religious observance, and for taking the appropriate steps to keep up with the course.

If a suitable arrangement cannot be reached between a student and their instructor, they should consult the Undergraduate Chair of the department offering the course, and if necessary, the Associate Dean (Academic) of the Faculty of Science.

For a list of recognized religious observances, please visit the calendars posted on the Equity, Diversity & Inclusion website - <https://www.edi.uwo.ca> (About Us – Resources – Additional Resources – Calendars).

6.2 Academic Accommodation Policies

Students with disabilities are encouraged to contact Accessible Education, 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).

6.3 General Academic Policies

The website for Registrar Services is <https://www.registrar.uwo.ca/>.

Use of @uwo.ca email: In accordance with policy, 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 email address. It is the responsibility of the account holder to ensure that emails received from the University at their official university address are attended to in a timely manner.

Requests for Relief (formally known as “appeals”)

Policy on Request for Relief from Academic Decision:

https://uwo.ca/univsec/pdf/academic_policies/appeals/requests_for_relief_from_academic_decisions.pdf

Procedures on Request for Relief from Academic Decision (Undergraduate):

https://uwo.ca/univsec/pdf/academic_policies/appeals/undergrad_requests_for_relief_procedure.pdf

6.4 Scholastic Offences

Policy on Scholastic Offences:

https://uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_offences.pdf

Procedures on Scholastic Offences (Undergraduate):

https://uwo.ca/univsec/pdf/academic_policies/appeals/undergrad_scholastic_offence_procedure.pdf

Use of Electronic Devices During Assessments

In courses offered by the Faculty of Science, the **possession** of unauthorized electronic devices during any in-person assessment (such as tests, midterms, and final examinations) is strictly prohibited. This includes, but is not limited to: mobile phones, smart watches, smart glasses, hidden cameras and wireless earbuds or headphones.

Unless explicitly stated otherwise in advance by the instructor, the presence of any such device at a student's desk, on their person, or within reach during an assessment will be treated as a scholastic offence, **even if the device is not in use**.

Effective September 2026, the typical penalty for this offence is a failing grade in the course AND a 12-month prohibition on retaking the course.

Only devices expressly permitted by the instructor (e.g., non-programmable calculators) may be brought into the assessment room. It is their responsibility to review and comply with these expectations.

Use of Generative AI Tools

Unless otherwise stated, the use of generative AI tools (e.g., ChatGPT, Microsoft Copilot, Google Gemini, or similar platforms) is **not permitted** in the completion of any course assessments, including but not limited to: assignments, lab reports, presentations, tests, and final examinations.

Using such tools for content generation, code writing, problem solving, translation, or summarization—when not explicitly allowed—will be treated as a **scholastic offence**.

If the use of generative AI is permitted for a particular assessment, the conditions of use will be specified by the instructor in advance. If no such permission is granted, students must assume that use is prohibited. It is the student's responsibility to seek clarification before using any AI tools in academic work. (see Section 5 [*Use of Generative AI Tools*] above for exact rules of AI use in this course)

Use of Software for Assessments

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>).

Scanex: 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.

iClicker Cloud will be used for evaluation of in-class participation. Students' responses will be associated with their course account only for instructional and assessment purposes. iClicker may be used to gather responses, provide immediate feedback, and calculate part of the participation grade. Students must use only their own account/device; answering on behalf of another student constitutes a scholastic offence.

6.5 Support Services

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

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

Gender-Based and Sexual Violence. Western is committed to reducing incidents of gender-based and sexual violence (GBSV) and providing compassionate support to anyone who has gone through these traumatic events. If a student has experienced GBSV (either recently or in the past), they can find information about support services for survivors, including emergency contacts, at:

https://www.uwo.ca/health/student_support/survivor_support/get-help.html.

To connect with a case manager or set up an appointment, please contact support@uwo.ca.

Accessibility for Coursework. A student may contact the course instructor if they require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to them. If they have any questions regarding accommodations, they may also contact Accessible Education at http://academicsupport.uwo.ca/accessible_education/index.html

Learning Development and Success. Learning-skills counsellors at Learning Development and Success (<https://learning.uwo.ca>) are ready to help students improve their learning skills. The facility offers 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.

Student Councils.

Student-run support services are offered by the University Students' Council (<https://westernusc.ca>) and the Science Students' Council (<https://www.westernssc.ca>).