

IES*1020 - Indigenous Knowledge for Environmental Science and Practice

Winter 2026 Course Outline

Section: 01

Credits: 0.50

Land Acknowledgement: Guelph

The University of Guelph resides on the ancestral lands of the Attawandaron people and the treaty lands and territory of the Mississaugas of the Credit. We recognize the significance of the Dish with One Spoon Covenant to this land and offer respect to our Anishinaabe, Haudenosaunee and Métis neighbours. Today, this gathering place is home to many First Nations, Inuit, and Métis peoples and acknowledging them reminds us of our important connection to this land where we work and learn.

Calendar Description

This course gives students the opportunity to gain an understanding of Indigenous knowledge systems and their importance for environmental science and practice. Indigenous world views, ecological knowledge, environmental philosophies, and cultural values will be explored through exposure to the teaching and perspectives of Indigenous knowledge holders, community members, political leaders, academics, activists, and scholars.

Prerequisite(s): IES*1010

Restriction(s): Restricted to students in BIESP, BIESPC.

Department(s): School of Environmental Sciences

Course Description

Through land-based educational experiences appropriate to the seasonal pattern of the late winter and spring, students will be introduced to Indigenous ways of knowing and being in nature through culture, ceremony and ecological knowledge. Diverse Indigenous worldviews and epistemologies will be explored from a variety of perspectives through field trips, readings and guest speakers.

The conceptual and practical nature of Indigenous knowledge will be discussed, with emphasis on ecological knowledge, including ways of coming to know, the centrality of place, oral knowledge transmission, and the role of knowledge holders. The diversity and dynamic nature of Indigenous ways of knowing will be emphasized. Students will be encouraged to develop their own perspectives on right relations with the environment and to reflect on their own values, choices and actions in this context.

Lecture Schedule

Mon 7pm-9:50pm in MCKN*059 (1/5 to 4/21)

Instructor Information

Susan Chiblow

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Additional Support

<Optional content block - title and content block fully editable>: Instructors may add additional content if necessary. This content block can be removed by clicking the 'eye' icon.

Textbooks

Group	Title	Author	ISBN
Required	Native Science: Natural Laws of Interdependence	Gregory Cajete	1-57416-041-9

Required	Embers: One Ojibway's Meditations	Richard Wagamese	978-1-77162-13305
Required	Our Knowledge is Not Primitive: Decolonizing Botanical Anishinaabe Teachings	Wendy Makoons Geniusz	978-0-8156-3204-7

Learning Resources

Selected Readings

Johnston, B. (2011). Think Indian; languages are beyond price. Kegedonce Press.

Rice, B. (2005). Seeing the World with Aboriginal Eyes. Aboriginal Issues Press.

Gilio-Whitaker, D. (2019). As long as the grass grows: The Indigenous fight for environmental justice, from colonization to Standing Rock. Beacon Press.

Joseph, B. & Joseph C.F. Indigenous relations: Insights, tips & suggestions to make reconciliation a reality. Indigenous Relations Press

Asch, M., J. Borrows, and J. Tully (Editors). *Resurgence and Reconciliation: Indigenous-Settler Relations and Earth Teachings*. University of Toronto Press, 2018.

Atlas, W., Ban, N., Moore, J., Tuohy, A., Greening, S., Reid, A., Morven, N., White, E., Housty, W., Jousty, J., Service, C., Greba, L., Harrison, S., Sharpe, C., Butts, K., Shepert, W., Sweeney-Bergen, E., Macintyre, D., Sloat, M., Conners, K. (2020). Indigenous systems of management for culturally and ecologically resilient pacific salmon (*Oncorhynchus spp.*) fisheries. *BioScience* 71, 186-204

Awâasis, S. (2020). Anishinaabe time: temporalities and impact assessment in pipeline reviews. *Journal of Political Ecology* 27(1), 830-852. doi: <https://doi.org/10.2458/v27i1.23236>

Coleen A. Fox, C., Reo, N., Turner, D., Cook, J., Dituri, F., Fessell, B., Jenkins, J., Johnson, A., Rakena, T., Riley, C., Turner, A., Williams, J., Wilson, M. (2017). "The river is us; the river is in our veins": re-defining river restoration in three Indigenous communities. *Sustainability Science*, 11 (3)

Hamidpour, M., Hamidpour, R., Hamidpour, S., Shahlair, M. (2014). *Chemistry, Pharmacology, and Medicinal Property of Sage (Salvia) to Prevent and Cure Illnesses such as Obesity, Diabetes, Depression, Dementia, Lupus, Autism, Heart Disease, and Cancer*. J Tradit Complement Med. 4(2): 82–88. doi: 10.4103/2225-4110.130373

McGregor D, Whitaker S and Sritharan M (2020) Indigenous environmental justice and sustainability. *Environmental Sustainability* 43: 35-40.

McGregor D (2014) Traditional knowledge: Considerations for protecting water in Ontario. *The International Indigenous Policy Journal* 3(3): 1-21

McGregor, D. (2021). Indigenous Knowledge Systems in Environmental Governance in Canada. *KULA: Knowledge Creation, Dissemination, and Preservation Studies* (5) 1-10 <https://doi.org/10.18357/kula.148>

McGregor, D. (2005). Traditional ecological knowledge: An Anishinabe women's perspective. *Atlantis*, 29(2), 103–109.

Oosten, J. and Laugrand, F. (Eds.) *Inuit Worldviews: An Introduction*. Nunavut Arctic College, 2017.

Multi-media

Jim Dumont – Creation Story (49:20 min) <https://www.youtube.com/watch?v=AB-Fi31kITs&t=561s> (<https://www.youtube.com/watch?v=AB-Fi31kITs>)

Onaubinisay at the 2018 Parliament of the World's Religions

Oren Lyons on the Indigenous View of the World (1:11:29) <https://www.youtube.com/watch?v=kbwSwUMNyPU>

Campus Resources

If you are concerned about any aspect of your academic program: Make an appointment with a Program Counsellor (<https://www.uoguelph.ca/uaic/programcounsellors>) in your degree program. If you are struggling to succeed academically: There are numerous academic resources offered by the Learning Commons (<https://www.lib.uoguelph.ca/using-library/spaces/learning-commons>) including, Supported Learning Groups for a variety of courses, workshops related to time management, taking multiple choice exams, and general study skills.

Cost of Textbooks and Learning Resources

Textbook / Learning Resource	Required / Recommended	Cost
Native Science: Natural Laws of Interdependence	Yes	\$28.90
Embers: One Ojibway's Meditations	Yes	\$21.95
Our Knowledge is not Primitive: Decolonizing....	Yes	\$48.00

Students are advised that prices are often determined by the publisher or bookstore and may be subject to change.

Library Course Reserve (Ares)

For this course, you will be required to access course reserve materials through the University of Guelph McLaughlin Library. To access these items, select **Ares** on the navbar in CourseLink. Note that you will need your Central Login ID and password in order to access items on reserve.

For further instructions on accessing reserve resources, visit How to Get Course Reserve Materials (<https://www.lib.uoguelph.ca/find/course-reserves-ares/>).

If at any point during the course you have difficulty accessing reserve materials, please contact the e-Learning Operations and Reserve Services staff at:

Tel: 519-824-4120 ext. 53621 | Email: libres2@uoguelph.ca | Location: McLaughlin Library, First Floor, University of Guelph

Course Learning Outcomes

1. Describe the components and characteristics of Indigenous knowledge systems.
2. Discuss Indigenous approaches to knowledge and coming to know.
3. Identify the values and perspectives inherent in Indigenous knowledge systems that shape Indigenous environmental science and practice.
4. Understand the role of human and non-human persons in conceptualizing right relations and Indigenous ways of being in nature.
5. Recognize and describe the diversity of Indigenous knowledge systems.
6. Identify key similarities and differences across Indigenous knowledge systems with respect to underlying premises and methodologies.
7. Participate respectfully in land-based learning activities and dialogues.
8. Understand the importance and role of Indigenous knowledge holders in the transmission of Indigenous knowledge.
9. Recognize the role of storytelling, including creation stories, in Indigenous environmental science and practice.
10. Recognize the centrality of place in Indigenous knowledge systems and its importance for Indigenous environmental science and practice.
11. Communicate learnings about Indigenous knowledge systems orally and in writing.
12. Re-examine personal knowledge systems and their impact on personal values and biases using your program portfolio.

Course Level Learning Outcomes

University Learning Objectives

In the process we will address a number of the University's Learning Objectives (<https://www.uoguelph.ca/vpacademic/avpa/outcomes/pdfs/Undergraduate%20Learning%20Outcomes.pdf>) especially;

- Critical and Creative Thinking: inquiry and analysis.
- Literacy: information.
- Global Understanding: sense of historical development, civic knowledge and engagement, intercultural competence.
- Communicating: oral, written, reading, integrative.
- Professional and Ethical Behaviour: teamwork, ethical behaviour.

Schedule of Topics and Assignments

Day	Date:	Activities	Due
Mon	2/16	Winter Break	

Teaching and Learning Activities

Weekly Activities

Lectures, Sharing Circles, Discussions

Lectures, sharing circles, and class discussions focus on Indigenous ways of knowing and being in nature. Students will investigate how Indigenous knowledge of relationships between humans and the environment from a framework for environmental philosophy, science and practice. The ethical implications of sacred knowledge as a cornerstone of Indigenous environmental science and practice will be considered.

Some classes will be used for active land-based learning in the Arboretum and other local sites. These activities will include interactions with Indigenous community members and knowledge holders.

1. Introduction
 - Acknowledging Indigenous lands
 - Review of terminology and the history of terms
 - Respectful dialogue
 - Teaching tools
2. What is a knowledge system or way of knowing?
 - What is knowledge? The nature of knowledge and information, including concepts of causality and uncertainty will be considered.
 - Knowledge systems and conceptual mapping
 - Coming to know - How do we know?
 - Whose knowledge? Personal and community knowledge
 - How do we share knowledge?
 - How is knowledge connected to values?
 - How does knowledge inform actions and decisions?
3. Elements of Indigenous ways of knowing and being in nature
 - The diversity of cultural teachings and practices
 - The dynamics of Indigenous ways of knowing: tradition and change
 - Shared fundamental attributes:
 - Spiritual
 - Place-based
 - Event-based (happenings rather than objects)
 - Wholistic
 - Relational
 - Experience-based
 - Circular cyclical time
 - Inherently rational and valid
4. Right Relations:
 - Creation stories
 - The place of humans in the natural world and its consequences
 - The animated world: all our relations
 - The concept of right relations and its centrality for IES, including moral consideration of both human and non-human persons
5. Who are the participants in Indigenous ways of knowing and living in nature? Ways of knowing and being in community.
 - Knowledge seekers
 - Knowledge holders
 - Knowledge transmission
6. Storytelling: Oral transmission and ecological narratives
7. Indigenous knowledge and ceremony
 - Sacred places and spaces
 - Sacred times
8. Walking the Land
 - The centrality of place: the importance of observation in the local context to establish specific knowledge rather than generic.
 - Observation and experience: Knowing the plants and animals on the lands and their interrelationships.

- The importance of seasonality in structuring and understanding relationships with the lands.
- Plants as medicines: Plant stewardship and use as examples of Indigenous ways of knowing in practice.

9. Indigenous knowledge for equity, reconciliation and social justice, sovereignty, and cultural wellness.

Core Skill Development

Students will learn about and begin to develop the following core skills:

1. Listening to hear, see, feel, and be
2. Positioning self in relation to the lands
3. Methods of knowing, seeing, relating, and being
4. Sharing knowledge and communication

Assessment Breakdown

Description	Weighting (%)	Due Date
Summary #1	10%	Jan 23
Book Reflection #1	15%	Feb 6
Summary #2	10%	Feb 13
Summary #3	10%	March 13
Project Presentation	20%	March 23
Summary #4	10%	March 27
Book Reflection #2	15%	April 1
Being Part of the Lands	10%	April 8

Last Day to Drop Course

The final day to drop Winter 2026 courses without academic penalty is the last day of classes: April 06

After this date, a mark will be recorded, whether course work is completed or not (a zero is assigned for missed tests/assignments). This mark will show on the student's transcript and will be calculated into their average.

Course Grading Policies

Submission of Assignments

Submit assignments of Course Link

Late Assignment

Late assignments will be conducted 25% per day (including weekends) with a mark of zero being assigned after 2 days late.

Please reach out to me if you are going to be late. We can always work something out.

Course Standard Statements

Course Policies

Everyone is expected to attend class regularly. If you are unable to attend class, send me an email.

Field Trip and Outdoor Classes

There will be one field trip and everyone is expected to participate.

Some classes will be outdoors and everyone is expected to dress appropriately for the weather.

If you are unable to participate in the field trip, let me know.

If you do not have warm outdoor clothing, let me know.

Standard Statements for Undergraduate Courses

Academic Integrity

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.

The Academic Misconduct Policy (<https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/academic-misconduct/>) is outlined in the Undergraduate Calendar.

Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required; however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability. Use of the SAS Exam Centre requires students to make a booking at least 10 days in advance, and no later than the first business day in November, March or July as appropriate for the semester. Similarly, new or changed accommodations for online quizzes, tests and exams must be approved at least a week ahead of time. For students at the Guelph campus, information can be found on the SAS website. (<https://www.uoguelph.ca/sas>)

Accommodation of Religious Obligations

If you are unable to meet an in-course requirement due to religious obligations, please email the course instructor within two weeks of the start of the semester to make alternate arrangements.

See the Academic calendar for information on regulations and procedures for Academic Accommodations of Religious Obligations (<https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/academic-accommodation-religious-obligations/>).

Copies of Out-of-class Assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The deadline to drop two-semester courses will be the last day of classes in the second semester. This applies to all undergraduate students except for Doctor of Veterinary Medicine and Associate Diploma in Veterinary Technology (conventional and alternative delivery) students. The regulations and procedures for course registration are available in the Undergraduate Calendar - Dropping Courses (<https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/dropping-courses/>).

Email Communication

As per university regulations, all students are required to check their uoguelph.ca e-mail account regularly: e-mail is the official route of communication between the University and its students.

Health and Wellbeing

The University of Guelph provides a wide range of health and wellbeing services at the Vaccarino Centre for Student Wellness (<https://wellness.uoguelph.ca/>). If you are concerned about your mental health and not sure where to start, connect with a Student Wellness Navigator (<https://wellness.uoguelph.ca/navigators>) who can help develop a plan to manage and support your mental health or check out our mental wellbeing resources (<https://wellness.uoguelph.ca/shine-this-year>). The Student Wellness team are here to help and welcome the opportunity to connect with you.

Illness

Medical notes will not normally be required for singular instances of academic consideration, although students may be required to provide supporting documentation for multiple missed assessments or when involving a large part of a course (e.g., final exam or major assignment).

Recording of Materials

Presentations that are made in relation to course work—including lectures—cannot be recorded or copied without the permission of the presenter, whether the instructor, a student, or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

Resources

The Academic Calendars (<http://www.uoguelph.ca/registrar/calendars/?index>) are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs.

When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id#, and e-mail contact. See the Undergraduate Calendar for information on regulations and procedures for Academic Consideration. (<https://calendar.uoguelph.ca/undergraduate-calendar/undergraduate-degree-regulations-procedures/academic-consideration-appeals-petitions/>)