

ITM 775 – ICT and Sustainability

COURSE OUTLINE FOR 2026-2027

Semester, Section
Classroom, Class Time

Prerequisite(s): ITM 706

Faculty/Contract Lecturer Information

- **Faculty/Contract Lecturer Name:**
- **Office Location:**
- **Office Hours:**
- **Phone:** (416) 979 – 5000, ext.
- **Course Website:** my.torontomu.ca (for courses using D2L)
- **Email Address:** youremail@torontomu.ca

Mode of Course Delivery: In Person

[Academic Program Advising Contacts](#)

Chair/Director for this Course: Sameh Al Natour

Email Policy

Students are expected to monitor and retrieve messages and information sent through D2L and TMU email on a frequent and consistent basis. In accordance with the Policy on TMU Student E-mail Accounts ([Policy 157](#)), Toronto Metropolitan University (TMU) requires that any electronic communication by students to TMU faculty or staff be sent from their official university email account. Communications sent from other accounts may be disregarded.

Course Description

This course aims to expand our understanding of environmental sustainability using ICT tools, services, and applications. The course addresses the global issues of sustainability, the existing concepts and practices, and provides IT-enabled solutions to tackle the environmental issues from the Canadian ecological perspectives. Technological change and innovation need to be directed towards inclusive and sustainable outcomes, through a purposeful effort by governments, in collaboration with civil society, business, and academia.

Course Details

Teaching Methods

If you are registered in an in-person or a virtual classroom, instruction will take place at scheduled hours, following the approach outlined in D2L Brightspace. If you are registered in a Chang School Distance Education course, please follow the schedule, course outline and learning modules as outlined in D2L Brightspace.

Note: All assessments in this course, regardless of its delivery format, will be held in-person on campus. This applies to in-person, virtual, and online courses, including sections/courses delivered through the Chang School.

Course Materials

Textbook and Other Learning Materials:

ICT & Sustainability online Library Resources

<https://learn.library.torontomu.ca/itsust>

Course Learning Outcomes

This course aims to expand our understanding of environmental sustainability using ICT tools, services, and applications. The course facilitates the development of cognitive, critical-thinking, and systems-thinking skills based on an interdisciplinary, problem-solving, analytical, and global approach to historical, philosophical/ethical, social, political, economic, and environmental issues. It addresses the global problems of environmental sustainability, the existing concepts, and practices. In addition, the course provides ICT-enabled solutions and support to tackle the environmental issues from the Canadian ecological perspective.

Upon completion of the course, students should be able to:

1. Understand Environmental Sustainability and its components from the global ecological, technical, social, and economic perspectives.
2. Understand how ICT innovation interventions can accelerate the transition to Canada's Net Zero and Sustainable Development (NZSD) challenges.
3. Understand the Sustainability-by-Design (SbD) Framework and the need to decouple the growth of emissions from growing technology adoption.
4. Explore analytical tools for measuring the efficiency and performance of Sustainable Development projects.
5. Explore the role of smart governance in developing sustainable smart cities.

6. Explore the essential role of Circular Economy and E-waste management as part of the Canadian Sustainable Development Strategies.
7. Explore the Indigenous Environmental Heritage and issues associated with Sustainable Community Development.
8. Explore the critical environmental and social issues affecting business today, including the latest consumer insight research on sustainability.
9. Explore Canadian Sustainable Development: policies, laws, and regulations.

Academic Integrity

Academic integrity is integral to your learning, the credibility of your degree or certification, and the integrity of the university as a whole. [Senate Policy 60: Academic Integrity](#) defines academic misconduct, provides a non-exhaustive list of examples of behaviours that may be considered as academic misconduct, and explains how academic misconduct concerns are evaluated and decided. The entirety of the policy applies in this course. As well, please note that submitting work created in whole or in part by artificial intelligence tools unless expressly permitted by the faculty/contract lecturer, is considered a violation of Policy 60.

Generative AI Course Policy, and Plagiarism Detection

Generative AI Course Policy

Use of Generative AI (e.g. ChatGPT, Grammarly, Perplexity, DeepL Translator) to develop or assist with any ideas or material submitted for coursework is expressly prohibited in this course. Use of Generative AI in this manner will be considered a breach of Policy 60.

Turnitin or another originality detection software

Turnitin is a plagiarism prevention and detection service to which TMU subscribes. It is a tool to assist faculty/contract lecturers in determining the similarity between students' work and the work of other students who have submitted papers to the site (at any university), internet sources, and a wide range of books, journals and other publications. While it does not contain all possible sources, it gives faculty/contract lecturers some assurance that students' work is their own. No decisions are made by the service; it generates an "originality report," which faculty/contract lecturers must evaluate to judge if something is plagiarized.

Students agree by taking this course that their written work will be subject to submission for textual similarity review to Turnitin. We strongly recommend that faculty/contract lecturers can opt to have student's papers included in TMU's institutional repository rather than the default Turnitin repository. Use of the Turnitin service is subject to the terms-of-use agreement posted on the Turnitin website. Students who do not want their

work submitted to this plagiarism detection service must, by the end of the second week of class, consult with their faculty/contract lecturer to make alternate arrangements. Students who choose not to have their papers screened for textual similarity review by turnitin may be required to submit additional work with their research essay. For example:

- an annotated bibliography of each source used in your paper; and/or
- the first few pages of each cited source used in your paper

Even when a faculty/contract lecturer has not indicated that a plagiarism detection service will be used, or when a student has opted out of the plagiarism detection service, if the faculty/contract lecturer has reason to suspect that an individual piece of work has been plagiarized, the faculty/contract lecturer is permitted to submit that work in a non-identifying way to Turnitin.

Copyright

The course materials provided to you are copyrighted, and may not be shared without my express written permission. Do not share these materials (e.g. course outline, lecture slides, assignment instructions) with others and do not post them on the internet during the course, or at any time after. If you do so, Policy 60 will apply.

Academic Integrity Resources

To learn more about Policy 60 and how to avoid academic misconduct, please review and take advantage of these resources:

- Policy 60: Academic Integrity: www.torontomu.ca/senate/policies/academic-integrity-policy-60/
- Academic Integrity Office website: www.torontomu.ca/academicintegrity
- “Academic Integrity in Space” game: <https://games.de.torontomu.ca/aio/#/>
- “Academic Integrity in Cyberspace!” game: <https://www.torontomu.ca/aic/#/>
- Student Life and Learning Support: www.torontomu.ca/student-life-and-learning/learning-support

If you are a student registered with Academic Accommodation Support (AAS):

Please inform your faculty/contract lecturer if you have test accommodation needs that include the use of assistive technology (including text-to-speech, dictation, or literacy software). Some software may require additional configurations by the faculty/contract lecturer, so it is important you inform them in advance and leverage the sample quiz to ensure the tools are compatible with the Brightspace Quiz in LockDown Browser.

However, not all Assistive Technology tools approved by AAS work well with Respondus' software; if your experience of the sample quiz does not function as expected, please notify your faculty/contract lecturer and/or Accommodation Facilitator.

Topics and Course Schedule

Week	Topic	Readings
1	Introduction to Environmental Sustainability - Describe the UN's Sustainable development goals - Explain Critical Issues in Sustainability - Define net zero, and understand its scientific underpinnings	Lecture Notes Online Resources
2	The current trend of global warming and the role of the International Environmental Treaties & Conventions - Explore the impact of global warming on from regional to global scales. - Critically investigate the global climate agreements: Successes and Failures	Lecture Notes Online Resources
3	ICT innovation and support for sustainable development Explore ICT innovations from IoT sensors to Green Clouds	Lecture Notes Online Resources
4	Analytical tools for analyzing the efficiency of sustainable developments Explain descriptive, predictive, and prescriptive analytics for measuring sustainability	Lecture Notes Online Resources
5	Measuring the Global CO2 Emissions and the role of Canada Critically investigate factors influencing CO2 emission levels	Lecture Notes Online Resources
6	Circular Economy - Understand the role of CE - Explain CE in the context of Canadian NetZero target	Lecture Notes Online Resources
7	ICT/AI roles for sustainable smart city development - Examine the transformation of sociotechnical systems into more sustainable alternatives - Explore challenges in sustainable smart cities: the digital divides	Lecture Notes Online Resources
8	E-wastes and the issues of E-waste Management in Canada - Explain the adverse potential eco-toxicological impacts and diverse health effects of e-waste - Compare and contrast e-waste management in Canada	Lecture Notes Online Resources

9	Corporate Social Responsibility (CSR) and Sustainable Strategies • Explore challenges in decision-making: from barriers to synergies	Lecture Notes Online Resources
10	IT-Governance, Laws and Regulations for Environmental Sustainability: A Canadian Perspective • Describe the role of IT-governance, policies, laws and regulation for sustainability • Explore Governance and management of Green IT deployment	Lecture Notes Online Resources
11	Indigenous and Sustainable Community Development • Decolonizing Knowledge for Sustainable Development • Explore Canadian Indigenous heritage for community-based sustainable development	Lecture Notes Online Resources
12	Exploratory Case studies for IT-Enabled Environmental Sustainability • Explore, evaluate, and analyze the role of IT innovation from e-agriculture, e-transportation to smart grids and smart cities: local and global case studies	Lecture notes Online Resources

Evaluation

The grade for this course is composed of the mark received for each of the following components:

Evaluation Component	Due Date	Percentage of Final Grade	Anticipated Return Date
D2L Discussions Forum	Weeks 2 to 11	20%	Week 3 to 12
Assignments (4x 5% each)	3, 4, 6, 9	20%	5, 6, 8, 11
Essay	Week 7	15%	Week 9
Group Project	Week 11	10%	Week 13
Final Exam	TBA	35%	TBD
Final Grade		100%	
Note: Students must achieve a course grade of at least 50% to pass this course. At least 20% of the grade based on individual work will be returned to students prior to the last date to drop a course in good academic standing. For Fall 2026 this must be before Friday, November 20, 2026 and for Winter 2027 before Friday, April 2, 2027.			

University Policies

Students must be reminded that they are required to adhere to all relevant university policies found in their online course shell in D2L and/or on [the Senate website](#).

Important Resources Available at Toronto Metropolitan University

- **Addressing Academic Concerns:** Students are expected to address any questions or concerns through open and timely communication with the course faculty/contract lecturer, as soon as they arise. If a concern cannot be resolved through this initial communication or if additional support is required, students are encouraged to reach out to their program advisor or the chair/director of the teaching department for further guidance. These individuals can help provide clarity, facilitate next steps, and ensure that matters are reviewed in a fair and appropriate manner.
- [The University Libraries](#) provide research [workshops](#) and individual consultation appointments. There is a drop-in Research Help desk on the second floor of the library, and students can use the [Library's virtual research help service](#) to speak with a librarian, or [book an appointment](#) to meet in person or online.
- [Student Life and Learning Support](#) offers group-based and individual help with writing, math, study skills, and transition support, as well as [resources and checklists to support students as online learners](#).
- You can submit an [Academic Consideration Request](#) when an extenuating circumstance has occurred that has significantly impacted your ability to fulfill an academic requirement. You may always visit the [Senate website](#) and select the blue radio button on the top right hand side entitled: Academic Consideration Request (ACR) to submit this request.

For Extenuating Circumstances, [Policy 167: Academic Consideration](#) allows for a once per semester ACR request without supporting documentation if the absence is less than 3 days in duration and is not for a final exam/final assessment. Absences more than 3 days in duration and those that involve a final exam/final assessment, always require documentation. Students must notify their faculty/contract lecturer once a request for academic consideration is submitted. See Senate [Policy 167: Academic Consideration](#).

Longer absences are not addressed through Policy 167 and should be discussed with your Chair/Director/Program to be advised on next steps.

- [FAQs Academic Considerations and Appeals](#)

- Information on Copyright:
 - [Copyright FAQs for Faculty/Contract Lecturers](#)
 - [Copyright FAQs for Students](#)
- Information on Academic Integrity:
 - [Academic Integrity for Faculty/Contract Lecturers](#)
 - [Academic Integrity for Students](#)

Accessibility

- At Toronto Metropolitan University, we are committed to ensuring that all courses are accessible to everyone and to removing barriers that may prevent some individuals from enrolling in courses.
- All technologies and tools used in this course are accessible.
- Students who discover an accessibility barrier with any of the course materials or technologies should contact their faculty/contract lecturer.
- As outlined in [Policy 159: Academic Accommodation of Students with Disabilities](#), students are required to proactively consult with AAS, the faculty/contract lecturer, Department or Faculty, as soon as feasible, including prior to enrolling in a course or program, on any concerns they may have about their ability to meet the essential academic requirements of a course/program.

Academic Accommodation Support

[Academic Accommodation Support](#) (AAS) is the university's accessibility services office, supporting students with disabilities. AAS works with students, faculty, and staff to create inclusive learning environments, reduce barriers, and promote accessibility across the university.

If you have (or suspect you may have) a disability, AAS can provide consultation, guide you through registration, develop accommodation plans where appropriate, and connect you with supports and services. For information about eligibility, documentation requirements, registration, deadlines, and available services, visit [AAS](#).

Academic Accommodations (for students with disabilities) and Academic Consideration (for short-term extenuating circumstances) are governed by **different university policies**. [Learn more about each process](#) and how to access support. Students registered with AAS may request academic consideration (related or unrelated to their disability) if they experience extenuating circumstances that impact their ability to meet their shorter term academic obligations. This includes short term physical or mental

health issues that are sudden/acute (e.g, the flu), unexpected illness or injury, hospitalization or treatment, and significant aggravation of a pre-existing condition. Please see [Policy 167: Academic Consideration](#) for more information and details.

Please note that there is no accommodation for missing/rescheduling or reweighting of tests - this is considered an alternate arrangement. Any student who misses a test/exam will be directed to submit an ACR to explore if possible alternate arrangements under [Policy 167: Academic Consideration](#) can apply .

Wellbeing Support

At Toronto Metropolitan University, we recognize that things can come up throughout the term that may interfere with a student's ability to succeed in their coursework. These circumstances are outside of one's control and can have a serious impact on physical and mental well-being. Seeking help can be a challenge, especially in those times of crisis.

If you are experiencing a mental health crisis, please call 911 and go to the nearest hospital emergency room. You can also access these outside resources at anytime:

- **Distress Line:** 24/7 line for if you are in crisis, feeling suicidal or in need of emotional support (phone: 416-408-4357)
- [Good2Talk](#): 24/7-hour line for postsecondary students (phone: 1-866-925-5454)
- [GuardMe Student Support Program \(GMSSP\)](#): 24/7 access to confidential support through counsellors via the [Student Support app](#) or 1-844-451-9700

If non-crisis support is needed, you can access these campus resources:

- [Centre for Student Development and Counselling](#): 416-979-5195 or email csdc@torontomu.ca
- [Consent Comes First – Office of Sexual Violence Support and Education](#): 416-919-5000 ext 3596 or email osvse@torontomu.ca
- [Medical Centre](#): call (416) 979-5070 to book an appointment

We encourage all Toronto Metropolitan University community members to access available resources to ensure support is reachable. You can find more resources available through the [Toronto Metropolitan University's Wellbeing Central](#) website.