TIMG 5110A: Project-based learning
Fall 2025 (September-December)

TIME, PLACE AND DELIVERY MODE

Tuesdays, 2:35 p.m. – 5:25 p.m. Eastern Time (local time in Ottawa, Canada)

This course is delivered in a HyFlex delivery mode: students can attend in person, online, or a combination of in person and online.

In person: Nicol Building 5010, Carleton University, Ottawa, Canada

Online: https://carleton-ca.zoom.us/j/93617319266; passcode: 5110F.

All course participants must use MyCarletonOne (MC1) credentials for access to online classes in Zoom and to course resources in Brightspace, and use Carleton email accounts for email.

INSTRUCTOR

Professor Steven Muegge

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Office: Nicol Building 5024

ABOUT THE COURSE

This course helps TIM students prepare the following:

1. A project proposal report including preliminary pages, abstract, Chapter 1 (Introduction), Chapter 2 (Literature Review), the list of references, and the basic components and organization of the TIM project (the "TIM project shell"); in the TIM program, we call this document a **TIM Project Report Start**

2. A **gate 0 (G0) slide deck** and **presentations** to secure a faculty supervisor

3. A **Supervisor Assignment Request (SAR)** form for supervisor and TIM program approval

COURSE DESCRIPTION

TIMG 5110 [0.5 credits]

Project-based Learning

Provides an environment where TIM students in their second or third term can develop TIM Project proposals. The client may be a company (large or small), an entrepreneur, a not-for-profit, or a Carleton group. Projects will follow the TIM Gate process for student research.

TARGET AUDIENCE

TIMG 5110 Project-based Learning is for TIM students in their second or third term who are registered in one of the project pathways:

- Master of Applied Business Analytics (MABA) in Technology Innovation Management
- Master of Digital Transformation and Entrepreneurship (MDTE) in Technology Innovation Management
- Master of Engineering (M.Eng.) in Technology Innovation Management
- Master of Entrepreneurship (M.Ent.) in Technology Innovation Management
- Master of Entrepreneurship (M.Ent.) in Technology Innovation Management with Collaborative Specialization in Accessibility
- Master of Technology (M.Tech.) in Technology Innovation Management

Thesis students in the Master of Science (M.Sc.) in Technology Innovation Management pathway can also register for the course. However, the course focuses on students who will produce TIM projects.

LEARNING SPACE

We engage in a learning space that includes synchronous and asynchronous learning activities.

All course content, instructions, links, and submission portals are available on Brightspace, Carleton's learning management system (LMS): https://brightspace.carleton.ca/d2l/home. To access the course material, enter the Bightspace link into a web browser, submit your credentials, and select the course from the current academic term.

Instructions for synchronous and asynchronous learning activities are available for each class inside the course's Brightspace page. Students must review these instructions in advance and complete activities and assignments on time. Each student is responsible for the submission of their own assignment and the assessments they receive. Students will work in groups during class; however, each student controls their own submissions.

All classes follow a consistent pattern of learning activities to complete before, during, and after class time. Figure 1 illustrates the pattern of the course. The pattern incentivizes consistent effort from students (effort is correlated to learning) and ensures active class discussions and applications of course concepts rather than passive listening and low student engagement.
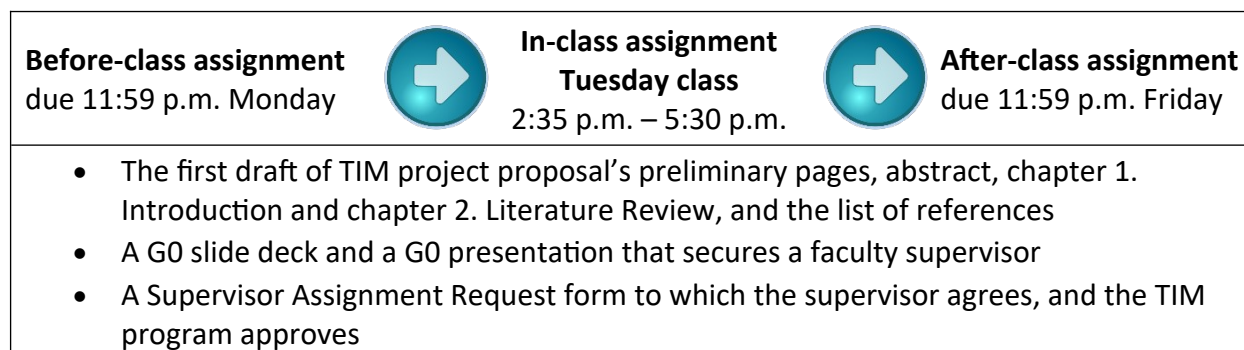
Before-class assignment due 11:59 p.m. Monday	→	**In-class assignment** **Tuesday class** 2:35 p.m. – 5:30 p.m.	→	**After-class assignment** due 11:59 p.m. Friday
<td colspan="5">   - The first draft of TIM project proposal's preliminary pages, abstract, chapter 1. Introduction and chapter 2. Literature Review, and the list of references   - A G0 slide deck and a G0 presentation that secures a faculty supervisor   - A Supervisor Assignment Request form to which the supervisor agrees, and the TIM program approves   </td>

Figure 1: Consistent pattern of learning activities before, during, and after each class session.

Synchronous portion – class sessions

Class sessions are the *synchronous* portion of our learning space where all of us, from anywhere in the world, come together at the same time to interact.

Class sessions will include combinations of lectures, group discussions in breakout rooms, student presentations, question and answer (Q&A) sessions, and learning reflections.

Students have the option to join class sessions in person in the classroom or remotely online. The classroom has a camera, speakers, and television screens to bridge the online and offline worlds productively.

Students should plan ahead to **attend and fully participate in all classes** regardless of in-person or online attendance. Plan ahead to reschedule other commitments that conflict with classes.

Asynchronous portion – outside class sessions

The *asynchronous* portion of our learning space involves work done by students on their own time (i.e., activities completed outside of class).

Before class – Students receive a combination of readings and videos to consume and instructions to complete a before-class assignment ahead of each class. Students will engage with the material on their own time and at their own pace, while meeting expected assignment deadlines. By completing the readings and videos, and completing the before-class assignments, students will arrive to class prepared to engage in higher-order learning activities.

After class – Students receive instructions on the assignments they need to submit after the synchronous classes. The after-class assignments build on the before-class assignments and the in-class learning activities. Students will complete the after-class assignments on their own time and at their own pace, while meeting expected assignment deadlines.

COURSE-RELATED QUESTIONS AND OFFICE HOURS

Students should post all questions about the course, including questions about course content, procedures, and assignments, to the discussion forum on Brightspace titled "Ask the Instructor." Students that send course related questions to the instructor's email will receive a reply asking the student to post their questions to the Ask the Instructor discussion forum.

The Ask the Instructor discussion forum is available in the Brightspace course page inside the section titled "About the Course." Please allow 24-48 hours for responses to questions posted during the work week. The instructor will answer questions posted over a weekend on the following Monday.

For office hours, the instructor is available by email any time. Use email to inform the instructor of emergencies, request in-person or virtual appointments, and for other non-course-related subject matter. Email is the preferred mode as it keeps a record of the student-instructor exchanges. Follow-up meetings can be online or in person.

Students should inform the instructor and the TIM Office of emergencies without delay.

RULES OF CONDUCT

Engagement

Student engagement with the course material and their peers is important for learning. Students' success depends on the extent and intensity of their engagement.

Engagement with course material means:

- **Active participation**: Students are actively involved in interacting with the content of the course, such as through reading assignments, participating in discussions, completing exercises, and applying concepts to practical scenarios.
- **Critical thinking**: They analyze, question, and critically evaluate the material, rather than passively receiving information.
- **Application**: Students use the knowledge they gain to solve problems, conduct experiments, or create projects, demonstrating their understanding and integration of the material.

Engagement with peers means:

- **Collaboration**: Students work together on assignments or class discussions, sharing insights, and learning from each other's perspectives.
- **Feedback and support**: They provide and receive constructive feedback on each other's work, and offer support and encouragement, fostering a collaborative learning environment.
- **Communication**: Engaging in meaningful conversations and interactions with classmates, both inside and outside of the classroom, to deepen their understanding and build a sense of community.

Groups

Students will engage with the course material individually and as part of groups. There are two types of groups that students will engage with: **Learning Groups** and **Domain Groups**. The instructor assigns students into Learning Groups and Domain Groups. Students can request to be transferred from one group to another.

Each student is to interact with members of their groups, actively and respectfully, to complete assignments and assimilate the content covered in the course.

Expectations

Table 1 describes the student behaviours expected by the instructor and by the department.

Table 1: Expected student behaviours

Academic integrity and participation	• Deliver excellent presentations; an excellent presentation is clear, concise, insightful, and completed within the allotted time
	• Submit assignments that meet specifications on time
	• Deliver professional-quality work (i.e., your work is clear, influential, organized, and free of spelling errors, poor grammar, inconsistent formatting, and other mistakes)
	• Comply with the university's academic integrity standards (e.g., will not plagiarize)
	• Interact with peers and the instructor to produce new knowledge
Teamwork and communication	• Arrive prepared to team meetings
	• Not permit (i.e., not tolerate or allow) or engage in freeloading for team projects or group work
	• Work through adversity and disagreement while maintaining a positive and respectful mindset (towards others and oneself)
	• Deal with uncertainty productively
	• Respond to emails reliably and promptly
	• Work respectfully and collaboratively with others
Classroom etiquette	• Be prepared for each class and fully participate in all classes
	• Show up to class on time
	• Manage time by scheduling course assignment due dates and requisite study time into their personal calendar

COURSE-LEVEL LEARNING OUTCOMES

Table 2 describes learning outcomes: what you will be able to do after completing this course.

Table 2: Learning outcomes (course level)

You can:	Demonstration of the outcome
Execute: do what you are required to do	Exceed or meet specifications on all assignments
Synthesize: figure out what is important	Gate 0 slide deck (G0)
Recommend: determine what should be done	Supervisor Assignment Request (SAR)
Generate: create something from nothing	TIM Project Report Start
Communicate: deliver high-quality presentations	Gate 0 presentations to TIM faculty

TIM PROJECT

The **TIM project** is a project that has a research component which is essential to create value for an identifiable client. It is part of what makes the TIM program distinct and is a requirement to qualify for a graduate degree.

To produce the **research component** of a TIM project, a TIM student does the following:

- Reviews the scholarly literature to identify the concepts and ideas that will guide the research work; these will include theories, frameworks, constructs, processes, and tools
- Applies findings and insights gained from the literature to shape two to four project deliverables and the method used to produce the deliverables
- Identifies what is known and what is not known about what is required to deliver on the research objective
- Collects and analyzes data to complement the lessons and insights gained from examining the scholarly literature
- Provides a detailed analysis and discussion of how the lessons learned from producing the project deliverables could enhance the practical application of theories, frameworks, constructs, processes, and tools in other TIM projects and application contexts

The **TIM Project Report** is an 80+ page document (between 80 and 130 pages is typical). A TIM faculty member grades the document using the *TIM Program Guidelines to Assign Grades to Projects*. To produce a TIM Project Report, a TIM student can leverage what the client provides, and interact with AI tools as much as possible.

The course instructor advises the formulation of the **G0 slide deck** and **presentation**. Students can collaborate with other faculty members as well.

The TIM program will assign a supervisor for each TIM Project after receiving a **Supervisor Assignment Request** (SAR) form signed by the supervisor and the student, and approved by the TIM Director.

The TIM program **Gate Process** has additional gates and requirements after gate 0, both while the project work is underway, and at completion of the project. These will be discussed in class. The TIM Gate Process is the student research workflow of the TIM program, of which this course is the entry point for TIM students wishing to complete a TIM project.

ASSIGNMENTS

This course has **17 assignments** that will be graded and several assignments that are not graded. Table 3 is a summary of these assignments.

The non-graded assignments do not require students to upload files for grading.

Table 3: Summary of assignments

You can:	Assignments	Graded assignments	Grading approach
Prepare a TIM project proposal	*TIM Project Report Start*: a draft of the TIM Project Report including the Abstract, Table of Contents, Introduction and Literature Review chapters, and List of References	1	*TIM Program Guidelines to Assign Grades to Projects*
Prepare a slide deck to propose a TIM project	Gate 0 slide decks (versions 1, 2 and final)	3	Specifications Grading
Communicate with skill	G0 presentations (two dry run presentations to peers and one or more presentation to TIM faculty at an Official Gate 0 review)	1	Specifications Grading
Work with TIM faculty to complete a Supervisor Assignment Request form	Supervisor Assignment Request form approved by the student and the student's supervisor	1	Specifications Grading
Take responsibility for your education	Pre-class assignments	5	Specifications Grading
Continuous improvement	After-class assignments	6	Specifications Grading
		17	

ASSESSMENT

This course uses the *TIM Program Guidelines to Assign Grades to TIM Projects* to grade the TIM Project Report Start assignment and the **specification grading system** (see below) to grade the other 16 assignments (17 graded assignments in total).

Specifications grading allows students to choose their desired grade based on the effort they put in. Students receive clear specifications for their assignments, and the instructor evaluates whether the submissions meet these specifications. The system does not use points, partial credits, or a pass/fail approach. Assignments either meet the specifications or they do not.

The specification grading system is as follows:

Grade 2: The assignment meets all specifications. No additional work is required.

Grade 1: The assignment does not meet specifications but shows effort to meet them. Further work is required.

Grade 0: The assignment was not submitted on time, does not show clear evidence of effort, and/or contains significant omissions, lacks logical flow, has poorly expressed ideas, or has errors in spelling, grammar, and capitalization.

There is an opportunity to re-submit revised versions of some specifications-grading assignments that did not score a grade of "2". Revised assignments submitted on or before the last day of the final examination period will be graded after the last day of the final examination period. No revised assignments will be accepted after the deadline.

The specification grading system and formula for final grade were adapted from Nilson (2015).

Nilson, L.B., 2015. *Specifications grading: Restoring rigor, motivating students, and saving faculty time*. Stylus Publishing.

Your final letter grade

Your final letter grade is determined by a formula that combines your TIM Project Report grade and the number of assignments completed with a grade of "2."

The table below shows how your TIM Project Report Start grade is adjusted based on the number of "2" grades received. For example, if you receive an "A-" on your TIM Project Report Start and complete 12 assignments with a grade of "2," your final letter grade will be a B.

Table 4: Final letter grade

Number of assignments with a "2"	Letter grade assigned to TIM Project Report Start					
	A+	**A**	**A-**	**B+**	**B**	**B-**
15 or 16	A+	A	A-	B+	B	B-
13-14	A	A-	B+	B	B-	F, IP, WDN
11-12	A-	B+	B	B-	F, IP, WDN	F, IP, WDN
9-10	B+	B	B-	F, IP, WDN	F, IP, WDN	F, IP, WDN
7-8	B	B-	F, IP, WDN	F, IP, WDN	F, IP, WDN	F, IP, WDN
5-6	B-	F, IP, WDN	F, IP, WDN	F, IP, WDN	F, IP, WDN	F, IP, WDN

COURSE SCHEDULE (tentative – changes will be announced if needed)

Table 5 is the schedule of classes and assignments. The TIM faculty (Professors Fain, Hudson, Muegge, Tanev, Weiss, Westerlund, and Bailetti) will deliver presentations on their research interests and the type of TIM projects they are interested in supervising during class in class #2.

Table 5: Schedule of classes (12 class sessions)

Class #	Class date	Topic	Before class assignment	After class assignment
1	Sept. 9	Course overview and client problem (Slide 4. Problem)		
2	Sept. 16	Slide 4. Problem and gap	Specifications Grading	
3	Sept. 23	Slides 4. Problem and gap, 5. Literature review, 9. References	Specifications Grading	
4	Sept. 30	Slides 1. Title, 2. Objectives and deliverables, 3. Relevance to the client company, 4, Problem and gap, 5. Literature review and 9. References	Specifications Grading	
5	Oct. 7	Slides 6. Research method, 7. Data acquisition, and 8. Data analysis	Specifications Grading	
6	Oct. 14	Slides 1 – 9. Narrative consistency	Specifications Grading	Specifications Grading
		The Carleton **Fall Break** begins Monday October 20; there are no classes during the break. Classes resume after the break on Monday October 27.		
7	Oct. 28	G0 presentations dry run 1, part 1	Specifications Grading	Specifications Grading
8	Nov. 4	G0 presentations dry run 1, part 2		Specifications Grading
9	Nov. 11	Improve G0 presentations		Specifications Grading
10	Nov. 18	G0 presentations dry run 2, part 1	Specifications Grading	Specifications Grading
11	Nov. 25	G0 presentations dry run 2, part 2		Specifications Grading
12	Dec. 02	TIM Project Report Start, Supervisor Assignment Request (SAR), and G0 slide deck that conforms to signed SAR		
	Dec. 09	Gate 0 for students without supervisors		
	Dec. 20	**Final Assignments are due**	Continued on next page	

Dec. 20	**TIM Project Report Start** that conforms to Carleton's accepted standards:
	    o Preliminary pages
	    o Chapter 1. Introduction
	    o Chapter 2. Literature Review
	    o Shell for Chapters 3-6
	    o References
	    o Appendices
		TIM Program Guidelines to Assign Grades to TIM Projects

Dec. 20	**G0 slide deck** revised to conform to signed and approved SAR	Specifications Grading
Dec. 20	Approved **SAR** (signed by supervisor)	Specifications Grading
Dec. 20	Last day to submit revisions of before- and after-class assignments that did not earn "2"	Specifications Grading (all revised assignments are graded after December 20)

SUPERVISOR ASSIGNMENT REQUEST FORM (SAR)

TIM students need to complete the *Supervisor Assignment Request* form (SAR) with their supervisors after the G0 presentations. A TIM student and her/his supervisor sign the form and submit it to the TIM Academic Director for approval. The TIM Director must approve your Supervisor Assignment Request form by a given date. You will not be able to remain registered in a 1.0 credit project course without an approved Supervisor Assignment Request form.

RESOURCES

Within the course's Brightspace, there are documents providing detailed explanations of how the course works and what actions you can take to ensure your success, and learning resources you can use to do better in the course. You will also find the G0 slide decks produced during this section by all course participants. These documents complement this course outline by going into greater detail and providing actionable advice and tools.

Students should also access a second course in Brightspace called "TIM Gate Process," with approved SARs and G1 slide decks from previous students in prior terms. To access this material, login to Brightspace using your credentials, navigate to "Resources" and then select the "TIM Gate Process" course.

Students are encouraged to master the digital tools and technologies summarized in Table 6.

Table 6: Mastery of digital tools and technologies

Carleton Library	https://library.carleton.ca	Databases, database search engines, AI tools (including Microsoft Co-pilot, Scopus AI, and Web of Science Research Assistant), research guides and learning resources, and research support services available to Carleton graduate students
ChatGPT	https://chatgpt.com	An advanced AI language model by OpenAI, ChatGPT is a conversational AI aiding in tasks such as content creation, getting information, and interactive learning
Perplexity.ai	https://www.perplexity.ai	An AI-powered search engine that delivers precise answers to complex queries by analyzing and summarizing information from a range of sources, and identifying the sources supporting the result; TIM students are eligible for a Perplexity Pro upgrade
Google Scholar	https://scholar.google.com	Freely accessible search engine that indexes scholarly articles, theses, books, conference papers, and patents across various disciplines, providing access to research and citations; use on the Carleton network (Wi-Fi or VPN) for direct links to Carleton databases
Futurepedia.io	https://www.futurepedia.io	A directory of AI tools and resources with information on advancements and applications of artificial intelligence in various fields
Microsoft Office or LibreOffice	https://www.libreoffice.org/ (Write and Present) https://carleton.ca/its/help-centre/get-microsoft-office-for-students/ (Word and PowerPoint)	Office software for documents and slideshows: (1) a **word processor** with features for creating large documents, including styles, captions, cross-references, comments, and tracking changes (LibreOffice Write or MS Word) (2) **Presentation software** to create clean and impactful slideshows (LibreOffice Present or MS PowerPoint)
Zoom	https://carleton.ca/online/online-learning-resources/zoom-for-students/	Video conference application; used in this course for remote participation and student presentations
Zotero or Mendeley	https://www.zotero.org/ https://www.mendeley.com/	Reference management systems that help you search, organize, cite and share your sources.

Artificial intelligence (AI) and AI FIrst

This course adopts the TIM program approach to AI of "AI First". To master AI tools such as Perplexity.ai and ChatGPT we offer these recommendations from Mollick (2024, pp. 48-62):

- You use the AI tools for everything, except plagiarize and break ethical rules
- You are always the human in the AI-Human loop
- Consider that the AI you are using now will be the worst AI you will ever use
- Tell the AI tool the persona you wish it to be

Mollick, E., 2024. *Co-intelligence: Living and working with AI*. Penguin Publishing Group.

Issue tracking and technical support

Students should alert the instructor of any content or technical issues in the course.

TIM VALUES, BRAND, AND ACADEMIC INTEGRITY

TIM Values

Table 7 identifies our expectations (what we value) and what is not acceptable in our value system. Individuals registered in this course must act accordingly.

Table 7: TIM values and expectations

	What the instructor expects	What the instructor finds unacceptable
Course assignments	• Original work • High-quality work delivered on-time for public examination	• Plagiarized work • Low-quality work delivered late with excuses
Focus	• Co-create innovation to make a difference in our university, disciplines, and communities	• Knowledge that fills menial gaps and has little or no impact on communities, our region, country, or world
Source of information	• Reputable scholarly journals	• Low quality journals, individual opinions, and stories
Mode in which students acquire knowledge and skills	• Independent and critical thinking • Application of new knowledge to gain insights on how to launch and grow technology companies	• Memorization and regurgitation of information • Application of superficial opinions, stories, management fads, generalities
Challenge	• Trying new things, destroying boundaries, and being deep thinkers	• Over-extending yourself by taking on so many things that you no longer have the capacity to do a respectable job at any of them.
Environment	• Relevant, substantive, fun, positive, 24x7 active and experiential learning	• Worthless, trivial, theatre, boring, negative, 3 hrs/week listening

Brand

The brand of the TIM program is an asset that is valuable. All TIM students and course participants work hard to protect and enhance both their own brand and the TIM brand.

Course participants should use Carleton email accounts.

Academic integrity

Students are expected to familiarize themselves with and follow the Carleton University Student Academic Integrity Policy, which is available online along with resources for compliance: https://carleton.ca/registrar/academic-integrity/

Violations of academic integrity are a serious academic offence. Violations of academic integrity, including plagiarism in all forms, presenting another's ideas, arguments, words or images as your own, using unauthorized material, misrepresentation, fabricating or misrepresenting research data, and unauthorized co-operation or collaboration or completing work for another student, are contrary to TIM culture, weaken the quality of the degree, and will not be tolerated. If an alleged violation occurs, all relevant documentation will be forwarded to the Dean. If the allegation proves true, the penalties may include a grade of Failure on the submitted work and/or course, academic probation, a refusal of permission to continue or to register in a specific degree program, suspension from full-time studies, suspension from all studies at Carleton, or expulsion from Carleton, among others.

Course Sharing Websites

Materials created for this course (including presentations and posted notes, labs, case studies, guides, assignments, and exams) remain the intellectual property of the author(s). They are intended for personal use and may not be reproduced or redistributed without prior written consent of the author(s).

ACADEMIC REGULATIONS

Academic regulations regarding registration, withdrawal, appealing marks, and most anything else you might need to know can be found in the *Carleton University Graduate Calendar*, here: http://calendar.carleton.ca/grad/regulations/

INFORMATION ON ACADEMIC ACCOMMODATIONS

Requests for Academic Accommodation

You may need special arrangements to meet your academic obligations during the term. For an accommodation request, the processes are described below.

Pregnancy obligation

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf

Religious obligation

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist.

For more details, visit the Equity Services website:
carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf

Academic Accommodations for Students with Disabilities

If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. carleton.ca/pmc

Survivors of Sexual Violence

As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: carleton.ca/sexual-violence-support

Accommodation for Student Activities

Carleton University recognizes the substantial benefits, both to the individual student and for the university, which result from a student participating in activities beyond the classroom experience. Reasonable accommodation will be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist.

https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf

Other information

For more information on academic accommodation, please contact the TIM program administrator (timprogram@carleton.ca) or visit students.carleton.ca/course-outline

HAVE A GREAT FALL TERM LEARNING!