

Institute for Technology Entrepreneurship and Commercialization

TIMG 5103S: Project-based learning

Summer 2023 (May-August)

TIME, PLACE AND DELIVERY MODE

Fridays, 2:35 p.m. – 5:25 p.m. Eastern Time (Ottawa time)

The delivery mode is **HyFlex**: students can attend in-person, online, or a combination of in-person and online:

- In person: Nicol Building 5010
- Online: [URL to be announced]

All course participants must use Carleton email accounts.

INSTRUCTOR

Professor Steven Muegge
smuegge@sce.carleton.ca
Office: Nicol Building 5062

ABOUT THE COURSE

This course helps a TIM student prepare the following:

1. A **Gate 0 slide deck** and a **Gate 0 presentation** that secures a faculty supervisor
2. A **Supervisor Assignment Request (SAR) form** to which the supervisor agrees
3. The **first draft** of a TIM project proposal's preliminary pages, abstract, chapter 1 (Introduction) and chapter 2 (Literature Review), the list of references, and the TIM project shell.

Course Description

TIMG 5103S: Advanced Topics in Technology Innovation Management [0.5 credits]

Project-based Learning

This course provides an environment where TIM students in their second or third term of study can develop TIM Project proposals. The client of the TIM project may be a large firm, a small- or medium-sized company, an entrepreneur, or a Carleton department, faculty, research organization, or a support group. Project proposals will follow the established TIM Gate Process for student research. Students will present their project proposals at the TIM Gate Review.

TARGET AUDIENCE

TIMG 5103S (Project-based Learning) is for graduate students in the Technology Innovation Management (TIM) program registered in one of the project degree pathways – the Master of Engineering (MEng), Master of Entrepreneurship (MEnt), or the Master of Applied Business Analytics (MABA) – in their second or third term of study. Thesis students can also register for the course. However, the course focuses on students who will produce TIM projects.

LEARNING SPACE

Course participants will engage in a learning space that includes synchronous and asynchronous learning activities.

All course content, instructions, links, and submission portals are available in Carleton University's **Brightspace Learning Management System (LMS)**: <https://brightspace.carleton.ca>
You can learn about Brightspace here: <https://carleton.ca/brightspace/students/>

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 class sessions follow a consistent pattern of learning activities to complete prior to, during, and after class time. Figure 1 illustrates the pattern of the course. This 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.



Pre-class assignment due 11:59 p.m. Thursday		FRIDAY CLASS 2:35 p.m. – 5:30 p.m.		After-class assignment due 11:59 p.m. Sunday
<ul style="list-style-type: none">• A Gate 0 slide deck and a Gate 0 presentation that secures a faculty supervisor• A Supervisor Assignment Request form to which the supervisor agrees• The first draft of TIM project proposal's preliminary pages, abstract, chapter 1 (Introduction) and chapter 2 (Literature Review), the list of references, and the TIM project shell.				

Figure 1: Consistent pattern of learning activities prior to, during, and after class time

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 group discussions, project work, lectures, student presentations, question and answer (Q&A) sessions, and learning reflections.

Students have the option to join class sessions in person in room 5010, Nicol Building, or online. The HyFlex classroom has video conferencing facilities including cameras, speakers, and large display screens to bridge the online and offline worlds productively.

Students should actively engage in class activities regardless of in-person or online attendance.

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).

Pre-class activities: Students receive a combination of readings and videos to consume and instructions to complete a pre-class assignment ahead of each class session. 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 pre-class assignments, students will arrive to class prepared to engage in higher-order learning activities.

After-class activities: Students receive instructions on the assignments they need to submit after the synchronous classes. The after-class assignments build on the pre-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 INSTRUCTOR OFFICE HOURS

Students should post all questions about the course, including questions about course content, procedures, and assignments, to the Brightspace discussion forum titled *Ask the Instructor*. Students who 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 course's Brightspace page inside the "About TIMG 5103S: Discussion, Schedule and Documents" module.

Please allow 24-48 hours for responses to questions posted during the work week. The instructor will answer any questions posted on the weekend on Mondays.

The instructor is available via email any time. Please use email to inform the instructor of emergencies, request in-person or virtual appointments, and for any other non-course-related subject matter. Email is the preferred mode as it keeps a record of the student-instructor exchanges. Students should inform the instructor about emergencies without delay.

RULES OF CONDUCT

Engagement

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

Students will engage with the course individually and as part of groups. There are two types of groups 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

	Instructor's expectations for all students
Academic integrity and participation	<ul style="list-style-type: none">• 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; will not post materials or IP owned by others)• Interact with peers and the instructor to produce new knowledge
Teamwork and communication	<ul style="list-style-type: none">• Arrive prepared to team meetings• Not engage in freeloading for team projects or group work, and not permit freeloading by others• 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	<ul style="list-style-type: none">• Arrive prepared for all class sessions with the pre-class activities completed, fully participate in all sessions, and promptly complete the after-class activities• Show up on time to synchronous class sessions• Manage time by scheduling course assignment due dates and requisite study time into their personal calendar

LEARNING OUTCOMES

A learning outcome is what students will be able to do after completing this course.

The table below provides the learning outcomes at the course level.

Outcome (You can do the following)	Assignments demonstrating 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
Recommend: Determine and effectively convey what should be done	Supervisor Assignment Request
Generate: Create something from nothing	First draft of the TIM Project Report
Communicate: Deliver high-quality presentations	Gate 0 presentation 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 unique 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 tasks:

- Review the research literature to identify the “conceptual things” that will guide the research work; these conceptual things include theories, frameworks, processes, and tools
- Apply findings from the literature and insights gained from the course to shape two to four project deliverables and the method used to produce them
- Identify what is known and not known about what is required to deliver on the research’s objective
- Collect data and describe the collection of data that can be analyzed to complement the selected research theories, frameworks, insights, and tools, and inform the method of producing the project deliverables
- Provide a detailed analysis of how the lessons learned producing the project assignments could enhance the practical application of the adopted research theories, frameworks, insights and tools in other TIM projects and application contexts

The TIM Project Report is an 80+ page document. A TIM faculty member grades the document using TIM standards for graduate students. To produce a TIM Project Report, a TIM student can leverage what the client provides.

The TIM program will assign a supervisor for each TIM Project that is successful at the TIM Gate Review event. The course instructor advises the formulation of the Gate 0 slide deck and presentation. Students can collaborate with other advisors as well.

SUPERVISOR ASSIGNMENT FORM

TIM students need to complete the Supervisor Assignment Request (SAR) form with their supervisors after the Gate 0 presentations. A TIM student and a supervisor sign the form and submit it to the TIM Academic Director for approval. Students in this course must submit the approved Supervisor Assignment Request form along with the final assignments at end of the examination period for the term.

Students will not be able to remain registered in any of the TIM project courses, TIMG 5901 (MEng Project), TIMG 5905 (MEnt Project), or TIMG 5907 (MABA Project) without an approved Supervisor Assignment Request form. Students without a completed form will be deregistered.

ASSIGNMENTS

This course has twenty (20) assignment submissions.

You can:	Assignments	Number of submissions
Take responsibility for your education	Pre-class assignments	6
Take responsibility for your education	After-class assignments	6
Prepare a slide deck to propose a TIM project	Gate 0 slide decks: version 1, version 2, and version 3 (official)	3
Communicate with skill	Gate 0 presentations: two dry-run presentations to peers, and one official presentation to TIM faculty at a Gate Review	3
Work with TIM faculty to complete a Supervisor Assignment Request form	Supervisor Assignment Request (SAR) form approved by the TIM Office	1
Prepare first draft of the TIM Project Report	TIM Project Report with a first draft of a shell for the TIM Project Report, Abstract, Table of Contents, Introduction (chapter 1), Literature Review (chapter 2), and List of References	1
		20

ASSESSMENT

This course uses the **specifications grading system** (Nilson, 2015) to assess 19 of the 20 assignments and the **traditional grading system** to assess one assignment – the TIM Project Proposal.

Specifications grading allows students to choose the grade they wish to earn based on the amount of effort they wish to put in.

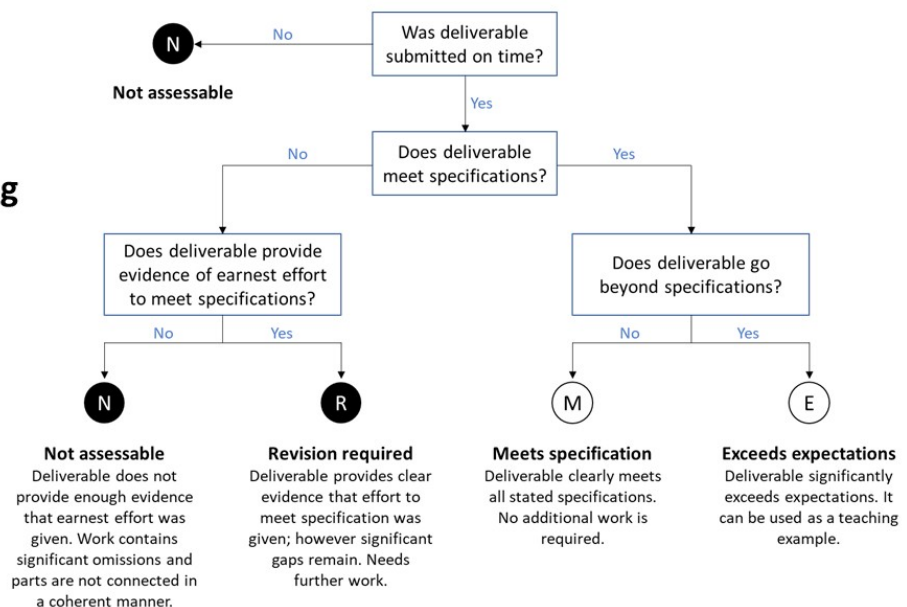
Students receive clear specifications that their assignments must meet, and the instructor evaluates whether the assignments that students submit meet the stated specifications. The specification grading system is not concerned with points, partial credits, or course pass or fail. An assignment that a student submits either meets specifications or it does not.

An assignment that meets specifications receives an “M” (meets specification) or an “E” (exceeds expectations). An assignment that does not meet specifications receives an “N” (not assessable) or an “R” (revision required).

To assess assignments, the instructor uses the **NRME specifications grading scale** shown below.

Specifications grading

- Meets specs or does not meet specs
- Not concerned with points or partial marks



Reference about Specifications Grading

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

YOUR LETTER GRADE

To determine your over-all final letter grade, we use a formula that considers your TIM Project Proposal grade and the number of assignments you complete with a grade of M or E.

To make this adjustment, we use a constant value for each letter grade (which we call K) and subtract from it the number of assignments that receive an M or E grade. We then take half of this difference and round it down to the nearest whole number to get an integer adjustment.

Assignments that receive an R or N grade do not count towards completing an assignment to specifications.

K is set by the letter grade assigned for the TIM Project Proposal.

For example, let's say you received an "A" grade on your TIM Project Proposal and completed 13 assignments with an M or E evaluation. To calculate your final letter grade, we would use the formula: $(K - (M+E))/2$, where K is the constant value for the letter grade that you're aiming for, and (M+E) is the number of assignments completed to specification.

If K for an "A" grade is 18, and a student completes 13 assignments, then we would calculate the adjustment as: $(18 - 13)/2 = 2.5$, which rounds down to 2. This means that your final letter grade would be adjusted down by two levels from an A to a B+.

To summarize, your final letter grade is determined by the grade assigned to your TIM Project Proposal adjusted based on the number of assignments completed to specification using the formula $(K - (M+E))/2$ rounded down to the lower integer.

The table below provides the value of K for each letter grade.

Letter grade for the course	Letter grade for TIM Project Proposal	Constant value for the grade (K)
A+	A+	19
A	A	18
A-	A-	17
B+	B+	16
B	B	15
B-	B-	14

CLASS SCHEDULE (Tentative; may be revised as needed after the course is underway)

Session #	Date	Pre-class assignment	In-class activity	After-class assignment
1	May 5		Breakout: G0 Slides 1&2	
2	May 12	Slides 1-4	Breakout: G0 Slides 1-4 TIM Faculty workshop	G0 Slides 1-4
3	May 19	Slides 5&9	Breakout: G0 Slides 5&9	G0 Slides 5&9
4	May 26	Slides 6-8	Breakout: G0 Slides 6-8	G0 Slides 6-8
5	June 2	G0 slide deck 1	G0 presentation 1 part 1	
6	June 9	G0 slide deck 1	G0 presentation 1 part 2	
Summer Break	June 16 – July 3			
7	July 7	How to improve G0 presentations by 3X	Breakout: How to improve G0 presentations by 3X	How to improve G0 presentations by 3X
8	July 14	G0 slide deck 2	G0 presentation 2 part 1	
9	July 21	G0 slide deck 2	G0 presentation 2 part 2	
10	July 28 (10 a.m. start)	Official G0 slide deck	Official G0 presentation (Gate Review)	TIM faculty's feedback
11	August 4	Supervisor Assignment Request form	Breakout: Supervisor Assignment Request form	Supervisor Assignment Request form
12	August 11	TIM Project Proposal (draft)	Breakout: TIM Project Proposal (improvements)	TIM Project Proposal (improved draft)
	August 25	Final assignments: <ul style="list-style-type: none"> • TIM Project Proposal (version 2) – includes shell for TIM Project Report, Abstract, Table of contents, Chapter 1 Introduction, Chapter 2 Literature Review, and List of References) • Approved Supervisor Assignment Request (SAR) 		

ADDITIONAL RESOURCES

Within the course's Brightspace there are documents providing detailed explanation of how the course works, what actions you can take to ensure your success, and learning resources you can use to do better in the course. These documents complement this course outline by going into greater detail and providing actionable advice and tools.

Students should carefully review all content in Brightspace.

Generative AI

Students are encouraged to use generative AI applications such as ChatGPT (<https://chat.openai.com/chat>) responsibly within the course:

- Improve the content of the Gate 0 slide decks and Gate 0 presentations
- Align the parts of the Gate 0 slide deck to make a coherent whole
- Propose the steps of a research method
- Improve the explanation of data acquisition and data analysis
- Eliminate all errors in grammar, spelling, capitalization, and punctuation, and ensure that citations and references are complete and correct
- Generate ideas, make recommendations, and extract what is most important

Futurepedia.io

Futurepedia (<https://www.futurepedia.io/>) is an inventory of more than 1,200 AI applications organized in 50 categories.

Issue tracking and technical support

Students should alert the instructor by email of any content or technical issues.

TIM BRAND AND VALUES

TIM 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.

TIM Values

The table below identifies our expectations (what we value in the TIM program) and what is not acceptable in our TIM value system. Individuals registered in this course must act accordingly.

	What the instructor expects	What the instructor finds unacceptable
Course assignments	<ul style="list-style-type: none">• Original work• High-quality work delivered on-time for public examination	<ul style="list-style-type: none">• Plagiarized work• Low-quality work delivered late with excuses
Focus	<ul style="list-style-type: none">• Co-create innovation to make a difference in our university, disciplines, and communities	<ul style="list-style-type: none">• Knowledge that fills menial gaps and has little or no impact on communities, our region, country, or world
Source of information	<ul style="list-style-type: none">• Reputable scholarly journals	<ul style="list-style-type: none">• Low quality journals, personal opinion, anecdotes, and stories
Mode in which students acquire knowledge and skills	<ul style="list-style-type: none">• Independent and critical thinking• Application of new knowledge to gain insights on how to launch and grow technology companies	<ul style="list-style-type: none">• Memorization and regurgitation of information• Application of superficial opinions, stories, management fads, generalities
Challenge	<ul style="list-style-type: none">• Trying new things, destroying boundaries, and being deep thinkers	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• Relevant, substantive, fun, positive, 24x7 experiential learning	<ul style="list-style-type: none">• Worthless, trivial, theatre, boring, negative, 3 hrs/week listening

ACADEMIC INTEGRITY: PLAGIARISM AND OTHER INSTRUCTIONAL OFFENCES

Plagiarism, including copying and handing in for credit someone else's work, is a serious instructional offence that will not be tolerated. Please refer to the section on instructional offences in the *Carleton University Graduate Calendar* and the links below for additional information. Plagiarism is contrary to the TIM culture and TIM values. A case of plagiarism will be referred to the Dean of the Faculty of Graduate and Postdoctoral Affairs (FGPA). The instructor will not deal with the matter directly. Carleton University has clear processes to deal with allegations of plagiarism.

Academic Integrity at Carleton University: <https://carleton.ca/registrar/academic-integrity/>

Academic Integrity in the *Carleton University Graduate Calendar*:
<https://calendar.carleton.ca/grad/gradregulations/administrationoftheregulations/#19>

Academic Integrity Policy at Carleton University:
<https://carleton.ca/secretariat/wp-content/uploads/Academic-Integrity-Policy-2021.pdf>

COURSE SHARING WEBSITES

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

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 as follows.

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 must 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 accommodations, please visit students.carleton.ca/course-outline or contact the administrators in the TIM program office at timprogram@carleton.ca.

HAVE A GREAT SUMMER TERM LEARNING!