

Course Outline

1. COURSE INFORMATION

Session Offered	Fall 2023	
Course Name	GENTECH Entrepreneurial Thinking & Innovation – SFGNTECH 4EN3	
Course Code		
Date(s) and Time(s) of lectures	Tuesdays 6:30 – 9:30 https://mcmaster.zoom.us/j/97032081113 Passcode, if necessary: 787144	
Program Name	Civil Engineering Infrastructure Technology / Software Engineering Technology / Energy Engineering Technologies/ Manufacturing Engineering Technology	
Calendar Description	This course introduces students to the interrelationship of entrepreneurial thinking and innovation at both the industrial and individual level.	
Instructor(s)	M. Piczak	E-Mail: Use Avenue emailer Office Hours & Location: by appointment

2. COURSE SPECIFICS

Course Description	<p>Entrepreneurship deals with the process of developing new business ventures and/or promoting growth and innovation in existing firms. Innovation is not just about new technology, but also about doing things better to enhance value for customers, employees and shareholders. Included in this course is the concept of intrapreneurship which captures ideas developed from within the organization and require a champion to carry opportunities/problem solutions forward to successful resolution/implementation and completion. Taken together, this implies that entrepreneurial thinking can apply itself to the development of products, services and processes.</p> <p>Within business, innovation is usually associated with product, services or process technologies that serve to add value or lower costs. Innovation can also involve enhancements to the way a business system is structured or workplaces are designed. Innovators can be equally diverse and those who can blend innovation together with entrepreneurship fundamentally shape the future of their industries.</p> <p>The framework of this course will follow the development of the fundamental building blocks of a Business Plan/Case Report. The Business Plan/Case proposal advances a solid argument to secure resources and the allocation funds for a “real-world” new product/service opportunity, new capability, or process modification within an enterprise. Components covered are: how to communicate an innovative idea internally within the firm, how to perform thorough environmental scan and analysis, how to perform qualitative analysis and identify key stakeholders, followed by performing quantitative analysis with financial feasibility. Lastly, best alternatives as recommendations and the creation of a realistic implementation plan will be addressed.</p>		
Instruction Type	Code	Type	Hours per term
	C	Classroom instruction	
	L	Laboratory, workshop or fieldwork	
	T	Tutorial	
	DE	Distance education	39
	FE	Final Exam	3 (online)

	Total Hours		39
Resources	ISBN	Textbook Title & Edition	Author & Publisher
	PressBook 15038-PDF-ENG 176 pgs	HBR Guide to Building Your Business Case (~ \$10.00 USD)	R. Sheen & A. Gallo Harvard Business Publishing
	Other Supplies:	Notes, PowerPoint slides and supplemental materials will be provided via electronic data files on A2L course site	
Prerequisite(s)			
Corequisite(s)	N/A		
Antirequisite(s)	GEN TECH 2EN3, 2ET3, 3EN3, 4ET3		
Departmental Policies	<p>Students must maintain a GPA of 3.5/12 to continue in the program.</p> <p>In order to achieve the required learning objectives, on average, B.Tech. students can expect to do at least 3 hours of “out-of-class” work for every scheduled hour in class. “Out-of-class” work includes reading, research, assignments and preparation for tests and examinations.</p> <p>Where group work is indicated in the course outline, such collaborative work is mandatory.</p> <p>The use of cell phones, iPods, laptops and other personal electronic devices are prohibited from the classroom during the class time, unless the instructor makes an explicit exception.</p> <p>Announcements made in class or placed on Avenue are considered to have been communicated to all students including those individuals that are not in class.</p> <p>Instructor has the right to submit work to software to identify plagiarism.</p>		
Course Specific Policies	<p>It is expected that students read the material that is coming under discussion prior to class. All assignments submitted for evaluation are completely word processed. Presentations associated with the case project are done in PowerPoint although Prezi, Sliderocket or other presentation clients can be used (student use such alternates at their risk). Students are expected to actively participate during class sessions offering insight, comment, reinforcement, argument, contrary views and underscoring examples. Students are encouraged to rehearse on Zoom prior to formal presentations.</p> <p>Generative AI Guidelines in the Course</p> <p>Students may use generative AI for [editing/translating/outlining/brainstorming] their work throughout the course so long as the use of generative AI is referenced and cited following APA citation style. Use of generative AI outside the stated use of [editing/translating/outlining/brainstorming] without citation will constitute academic dishonesty. It is the student’s responsibility to be clear on the limitations for use and to be clear on the expectations for citation and reference and to do so appropriately. AI is not to be used as a substitute for the demonstration of the students’ ability to research, think and express their views.</p> <p>Zoom Meetings with Instructor</p> <p>Assignment and course project progress online zoom meetings are part of this course. All students are expected to attend.</p> <p>Business Case Project (Group): 45%</p> <p>As a manager or technical professional, you often identify opportunities to help your team, department, and even your entire organisation, meet important business goals. When you</p>		

identify such an opportunity, you may quickly think of a course of action that you believe would enable you to seize the opportunity. A well-developed business case representative of your thinking on the matter can help you present a convincing argument for a particular solution to key stakeholders whose support you would need to implement your proposed solution. You need the organization's money and internal support.

Working in teams 5/6 (groups of six are the students' choice realizing that the bigger the group, the greater the related co-ordinative challenges; groups of four are not permitted) students you will identify an internal or external business opportunity that could be pursued in the real world. Students are encouraged to develop new business case ideas from their coop or full time workplace experience. Use the Discussion Board to find teams. Whether an internal or external opportunity, the course is not about writing up a case study on something that has happened. This course is about things that you need to MAKE HAPPEN.

Business case proposals must be approved in advance by the professor.

Business Case Report: (worth 45% delivered as a Proposal Scope + Parts A & B + Presentation)

Business Case Proposal Scope Presentation: Worth 5%

- Introduce your team
- Define a problem or opportunity your group intends to solve. (Think of your past co-ops or work experiences as inspiration for this idea)
- Develop an opportunity or problem statement
- What are your business objectives?

Due: Week 4: 2 minute powerpoint pecha kucha online presentation

Business Case Part A (Assignment 1): Worth 10%

This component of the assignment could be labelled: Problem or Opportunity Definition depending on whether groups choose an internal corporate issue or pursue an idea outside of employment. The analysis in this section will include the defined business case opportunity, environmental scan (SWOT), market size/anticipated share assessment, qualitative analysis (i.e. - Stakeholders, Risk & Impact, Assumptions, and Viable Alternatives). Where an internal problem is to be solved: nature of the problem, background, cost of non-conformance, stakeholders, work performed to date, 'band aids' applied to date, assumptions). This assignment forms part of the business plan/case.

Due per Dropbox: Information Mapping style via Dropbox. 10 pages WORD. Single spaced within Info Mapping.

Assignment 2: Worth 15%

This assignment invites students to examine the state of innovation within the industry/product/service selected for the business case/plan in the course. This assignment funnels into the business plan/case.

Due per Dropbox. Information Mapping is used. Single spaced.

All assignments conform to the APA style of citations. See Avenue link on our website.

Business Case Part B: Worth 20%

The final report will include **ALL** major sections of the business case including what was submitted and corrected in Part A. It will include the defined opportunity, identified

	<p>alternatives, feasibility & impact analysis, stakeholder & risk analysis, detailed and accurate estimated financial metrics and return on investment statements, implementation plan, and relevant appendices.</p> <p>Due per Dropbox: In traditional report writing style via Dropbox (40 pages double spaced max)</p> <p>Business Case Presentation: Worth 10% Due: Weeks 11 & 12 A group presentation supported by a PowerPoint slide deck is also required. Presentations will be delivered during class times in weeks 11 and 12. The date/times for each group will be randomly assigned. Presentations will be xx minutes in length with one point deducted for every minute over the provided time limit. X additional minutes are set aside for questions. Group peer evaluations are submitted to the Discussion Board for Presenting Group feedback.</p> <p>Final Exam: Worth 40% The cumulative final exam will be written during the scheduled examination period. The final exam format could include application-focused short answer questions and longer questions related to issues that arise within the course. Note: Students must achieve a passing mark on the final exam (50%) to pass the course</p>	
3. SUB TOPIC(S)		
Week 1: S5	<p>Course Intro & Corporate Entrepreneurship and Intrapreneurship</p> <ul style="list-style-type: none"> • The importance of entrepreneurial thinking & innovation • The middle manager as entrepreneur • Understanding the process of intrapreneurship • New venture creation within established organizations ie Intrapreneurship • Importance of the 'garage' • Finding sponsors and establishing credibility 	
Week 2: S12	<p>Innovation & Entrepreneurial Process</p> <ul style="list-style-type: none"> • Innovation methods/processes • Role of creativity in entrepreneurship and innovation • Entrepreneurial/Intrapreneurial process model • Design Thinking and its use to drive innovation from beginning to end 	
Week 3: S19	<p>Design Thinking as a Concept</p> <ul style="list-style-type: none"> • Fundamentals as applied to the Business case • Solution-based thinking • Design thinking as a process for problem-solving • Attributes of design thinking 	
Week 4: S26	<p>Introduction to the Business Case</p> <ul style="list-style-type: none"> • Defining the business opportunity & scope • Defining the business objectives 	<p>Business Case Scope Presentation ppt 2 minute time paced pecha kucha</p>

	<ul style="list-style-type: none"> • Explore the required components of a successful business case • Brain-writing exercise as brainstorming tool • First look environmental scan 	
Week 5: O3	SWOT and the Environmental Scan <ul style="list-style-type: none"> • Discussion of competitive, regulatory/political, economic, social and technological factors that might affect the business (PEST) & business idea • Controllable and uncontrollable factors (SWOT analysis) • The search for competitive advantage 	Mike Strugala (B.Tech. 2015) joins us 7:00 pm https://www.strategyconstruction.ca/
October 10	No class October 10 (Reading Week)	
Week 6: O17	Qualitative /Quantitative Analysis <ul style="list-style-type: none"> • Stakeholder analysis • Risk and Impact Analysis • Market Size/Anticipated Share • Assumptions for Business case • Generating a list of viable alternatives for the opportunity (Brainstorming) 	Nick Montecchia (B.Tech. 2005) joins us 7:00 pm Lazer Cut Skate Blades, 7:00 pm https://www.bbyonic.com/
Week 7: O24	HBR Making the Business Case <ul style="list-style-type: none"> • Cost discussion (Fixed/Variable) • Breakeven point • Cost-Benefit Analysis • Net Present Value • Payback period • Internal Rate of Return 	
Week 8: O31	Financial Analysis for External Opportunities <ul style="list-style-type: none"> • Basic financial statements • Development of statements • Interpretation of statements 	
Week 9: N7	Recommendation/Implementation/Executive Summary <ul style="list-style-type: none"> • Selecting the best alternative based on business objectives. • Implementation Plans (short and long-term) • How to write a good executive summary • How to present your business case 	
Week 10: N14	Internal and External Stakeholder Communication <ul style="list-style-type: none"> • Brief discussion of segmentation, targeting and positioning • Identifying the target stakeholders for the product/service/venture • Using the Business Case to effectively communicate internally and promote the Business idea 	

Week 11: N21	Business Case Group Presentations	xx minute BC/BP presentations with x additional minutes for questions; ppt, peer feedback
Week 12: N28	Business Case Group Presentations	xx minute BC/BP presentations with x additional minutes for questions; ppt, peer feedback Steve Strickland, IMT Mohawk grad 1983, 7:00 pm http://www.stricklandcontracting.com/
Week 13: D5	Final Wrap Up, Final Examination Prep	

Classes start September 5; Classes end December 6
All examinations MUST BE written during the scheduled examination period.
Final Exam is comprehensive

Note that this structure represents a plan and is subject to adjustment term by term.

The instructor and the University reserve the right to modify elements of the course during the term. The University may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes.

4. ASSESSMENT OF LEARNING	Weight
Group Business Case Project <ul style="list-style-type: none"> • Business Case Proposal Scope Pecha Kucha Presentation: 5% • Report Part A (Assignment 1): 10% • Final Report: 20% • Presentation 10% 	45%
Assignment 2 The Innovation Imperative in Canada: A Review of Emerging Innovations and Creative Products/Services by Industry (Your Industry)	15%
Comprehensive Final Examination	40%
TOTAL	100%

Percentage grades will be converted to letter grades and grade points per the University calendar.

5. LEARNING OUTCOMES

1. Assess the marketplace and perform an environmental scan to determine the competitive advantage and operating environment of a new product or service.
2. Understand how innovation drives economic competitiveness & use the concept of design thinking to drive innovation within an organization.
3. Examine the enablers and inhibitors that foster the development of innovation in an organization.
4. Prepare the required qualitative and quantitative analyses for an organizational investment proposal.
5. Evaluate multiple alternatives for achieving innovation based on assumptions and business objectives.
6. Generate an extensive business case report and presentation for a new product or service innovation appropriate for an intended or existing organisation.
7. Prepare oral presentations and written reports in sound English and grammatical form.

6. POLICIES

Anti-Discrimination

The Faculty of Engineering is concerned with ensuring an environment that is free of all discrimination. If there is a problem, individuals are reminded that they should contact the Department Chair, the Sexual Harassment Officer or the Human Rights Consultant, as soon as possible.

http://www.mcmaster.ca/policy/General/HR/Discrimination_Harassment_Sexual_Harassment-Prevention&Response.pdf

Academic Integrity

You are required to exhibit honestly and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity.

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various kinds of academic dishonesty please refer to the Academic Integrity Policy, located at: <http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicIntegrity.pdf>.

The following illustrates only three forms of academic dishonesty:

1. Plagiarism. E.g. the submission of work that is not own or for which other credit has been obtained
2. Improper collaboration in group work
3. Copying or using unauthorized aids in tests and examinations.

Requests for Relief for Missed Academic Term Work (Assignments, Mid-Terms, etc.)

The McMaster Student Absence Form is an on-line self-reporting tool for Undergraduate Students to report absences for:

- 1) Relief for missed academic work worth less than 25% of the final grade resulting from medical or personal situations lasting up to three calendar days:
 - Students may submit a maximum of one academic work missed request per term. It is the responsibility of the student to follow up with instructors immediately (within the 3 day period that is specified in the MSAF) regarding the nature of the accommodation. All work due in that time period however can be covered by one MSAF.
 - MSAF cannot be used to meet religious obligation or celebration of an important religious holiday, for that has already been completed or attempted or to apply for relief for any final examination or its equivalent.
- 2) For medical or personal situations lasting more than three calendar days, and/or for missed academic work worth 25% or more of the final grade, and/or for any request for relief in a term where the MSAF has not been used previously in that term:
 - Students must visit their Associate Dean's Office (Faculty Office) and provide supporting documentation.

E-Learning Policy

Consistent with the Bachelor of Technology's policy to utilize e-learning as a complement to traditional classroom instruction, students are expected to obtain appropriate passwords and accounts to access Avenue To Learn for this course. Materials will be posted by class for student download. It is expected that students will avail themselves of these materials prior to class. Students should be aware that, when they access the electronic components of this course, private information such as first and last names, user names for the McMaster e-mail account, and program affiliation may become apparent to all other students in the course. The available information is dependent on the technology used. Continuation in this course will be deemed consent to this disclosure. If you have any questions or concerns about this disclosure please discuss this with the course instructor. Avenue can be accessed via <http://avenue.mcmaster.ca>.

Communications

It is the student's responsibility to:

- Maintain current contact information with the University, including address, phone numbers, and emergency contact information.
- Use the University provided e-mail address or maintain a valid forwarding e-mail address.
- Regularly check the official University communications channels. Official University

communications are considered received if sent by postal mail, by fax, or by e-mail to the student's designated primary e-mail account via their @mcmaster.ca alias.

- Accept that forwarded e-mails may be lost and that e-mail is considered received if sent via the student's @mcmaster.ca alias.
- Check the McMaster/Avenue email and course websites on a regular basis during the term.

Turnitin (Optional)

This course will be using a web-based service (Turnitin.com) to reveal plagiarism. Students submit their assignment/work electronically to Turnitin.com where it is checked against the internet, published works and Turnitin's database for similar or identical work. If Turnitin finds similar or identical work that has not been properly cited, a report is sent to the instructor showing the student's work and the original source. The instructor reviews what Turnitin has found and then determines if he/she thinks there is a problem with the work. Students who do not wish to submit their work to Turnitin.com must still submit a copy to the instructor. No penalty will be assigned to a student who does not submit work to Turnitin.com. All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, etc.). To see the Turnitin.com Policy, please go to <http://www.mcmaster.ca/academicintegrity/turnitin/students/>

Protection of Privacy Act (FIPPA)

The Freedom of Information and Protection of Privacy Act (FIPPA) applies to universities. Instructors should take care to protect student names, student numbers, grades and all other personal information at all times. For example, the submission and return of assignments and posting of grades must be done in a manner that ensures confidentiality. <http://www.mcmaster.ca/univsec/fippa/fippa.cfm>

Academic Accommodation of Students with Disabilities Policy

Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905-525-9140 ext. 28652 or e-mail sas@mcmaster.ca. For further information consult McMaster's policy for Academic Accommodation of Students with Disabilities <http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicAccommodation-StudentsWithDisabilities.pdf>

Students must forward a copy of the SAS accommodation to the instructor of each course and to the Program Administrator of the B.Tech. Program immediately upon receipt. If a student with a disability chooses NOT to take advantage of a SAS accommodation and chooses to sit for a regular exam, a petition for relief may not be filed after the examination is complete. <http://sas.mcmaster.ca>

Student Code of Conduct

The Student Code of Conduct (SCC) exists to promote the safety and security of all the students in the McMaster community and to encourage respect for others, their property and the laws of the land. McMasterUniversity is a community which values mutual respect for the rights, responsibilities, dignity and well-being of others. The purpose of the Student Code of Conduct is to outline accepted standards of behavior that are harmonious with the goals and the well-being of the University community, and to define the procedures to be followed when students fail to meet the accepted standards of behavior. All students have the responsibility to familiarize themselves with the University regulations and the conduct expected of them while studying at McMasterUniversity. <http://judicialaffairs.mcmaster.ca/pdf/SCC.pdf> and <http://www.mcmaster.ca/policy/Students-AcademicStudies/StudentCode.pdf>