ENGINEERING
McMaster-Mohawk
Bachelor of Technology
Partnership

McMaster
University

Course Outline

1. COURSE INFORMATION

Session Offered	Winter 2022 (Virtual Blended Delivery)
Course Name	Entrepreneurial Thinking & Innovation
Course Code	GENTECH 4EP3
Date(s) and Time(s) of lectures	C01: TU: 2:30-4:20pm / TH: 10:30-11:20am (Virtual Blended Delivery) C02: TU: 11:30am-1:20pm / TH: 12:30-1:20pm (Virtual Blended Delivery) C03: MO: 4:30-6:20pm / FR: 9:30-10:20am (Virtual Blended Delivery)
Program Name	One of the following: Automation Engineering Technology / Automotive and Vehicle Engineering Technology / Biotechnology
Calendar Description	This course introduces students to the interrelationship of entrepreneurial thinking and innovation at both the industry and firm level.
Instructor(s)	Hoda Kamel *Section: C01*	E-Mail: kamelh@mcmaster.ca Office: ETB/211 or Remote Office Office Hours: By advance appointment only
	Allan MacKenzie *(Course Lead)* *Section: 4EP3/C02* *Section: 3EN3/C01-4EP3/C04*	E-Mail: mackenza@mcmaster.ca Office: ETB/210 (Remote Office Only-W22) Office Hours: By advance appointment only
	Matt Schonewille *Section: C03*	E-Mail: schonemj@mcmaster.ca Office: Remote Office Only-W22) Office Hours: By advance appointment only
Teaching Assistant(s)	Vince Greco (4EP3)	Email: grecov1@mcmaster.ca
	Raahil Mahetaji (3EN3)	Email: mahetajr@mcmaster.ca
	Julee Minniti (4EP3)	Email: minnitij@mcmaster.ca
	Joshua Quilatan (4EP3)	Email: quilataj@mcmaster.ca

2. COURSE SPECIFICS

Course Description	Entrepreneurship deals with the process of developing new business ventures 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. Innovation is usually associated with product or process technologies that add value or lower costs within the business. Innovation can also involve enhancements to how a business system is structured or workplaces are designed. Innovators can be equally diverse, and those who can blend innovation with entrepreneurship profoundly shape the future of their industries. The framework of this course will follow the development of the fundamental building blocks of a Business Case Report. The Business Case proposal makes a solid case to secure resources and the allocation of funds for a "real-world" new product opportunity, new capability, or significant product extension 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. Finally, recommend the alternatives and create a realistic implementation plan.		
Instruction Type	Code	Type	Hours per term
	C	Classroom instruction	
	L	Laboratory, workshop or fieldwork	
	T	Tutorial	
	DE	Distance education	39
		Total Hours	**39**
Resources	**ISBN**	**Textbook Title & Edition**	**Author & Publisher**
	PressBook 15038-PDF-ENG 176pgs	HBR Guide to Building Your Business Case ($9.97US)	R. Sheen & A. Gallo Harvard Business Publishing
	Other Supplies	**Source**	
	Download E-Textbook:	https://hbsp.harvard.edu/import/894731	
	Innovation Profile	All students will be required to complete the Basadur Innovation Profile to assess their approach to problem-solving and innovative thinking. This instrument will inform student teams formation as people with a diverse mix of styles significantly out-perform teams of more uniform composition	
	Video Tutorials:	There will be three (3) video tutorials assigned from the McMaster University LinkedIn Learning (LiL) enterprise site throughout the course. Training platform access link: https://www.mcmaster.ca/uts/linkedinlearning/	
	Other Supplies:	Video lessons, notes, slides and other supplemental materials will be provided via electronic data files or links on the A2L course site	
Prerequisite(s)	GENTECH 2MP3, 3FF3 and registration in Level 2 or above of Automation Engineering Technology, Automotive and Vehicle Engineering Technology, or Biotechnology.		
Corequisite(s)	N/A		
Antirequisite(s)	GENTECH 2EN3, 2ET3, 3EN3, 3ET3, 4ET3		
Departmental Policies	• Students must maintain a GPA of 3.5/12 to continue in the program. • 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. • Where group work is indicated in the course outline, such collaborative work is mandatory.		

	• The use of cell phones, iPods, laptops and other personal electronic devices are prohibited from the virtual classroom unless the instructor makes an explicit exception. • 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. • The instructor has the right to submit work to software to identify plagiarism.

Course Specific Policies	**Course Communications:**
	• It is your responsibility to check Avenue daily – everything you will need is there, and any important announcements will be posted there. Set your home page to the news feed for the course. See the Course A2L Website for any updates.
	• We only respond to emails from students' McMaster email accounts. Ensure that your Mac account is activated and has space to receive emails. We reply to emails only once, and if it returns to us as "undeliverable mail," we do not attempt any further replies. We do not respond to emails asking questions to which the answer is readily available in the course outline or Avenue.
	• Besides laptops/tablets for remote lectures/meetings, I WOULD RECOMMEND NOT HAVING YOUR MOBILE AT YOUR REMOTE WORK STATION.
	
	Virtual Blended Course Structure
	The intentional design of the course offers the flexibility of asynchronous, self-directed learning blended with small group synchronous project status meetings.
	    • <u>Asynchronous Component:</u> The self-guided modular course structure is supported with customized learning topic videos, e-textbook, lecture notes, and supplemental resources.
	    • <u>Synchronous Component:</u> Course learning is enriched through small group pre-scheduled status meetings between the instructor each student team as they progress through the BizCase Project elements throughout the semester. These 1on1 team meetings allowed for a more dynamic and confidential exploration of the project and course topics, along with a safer and personalized question-answering environment.
	
	Mandatory BizCase Team Project Status Meetings (Group)
	You must attend <u>ALL</u> three (3) virtual progress meetings on the days/times scheduled with your BizCase teammates in your registered course section.
	
	Video Tutorials Reflection Assignments (Individual): Cumulative worth 15%
	There will be three (3) video tutorials ranging from 30 – 60 minutes assigned as homework from the McMaster University LinkedIn Learning (LiL) enterprise site throughout the course requiring completion using a specific summary and reflection framework.
	
	All student reflection reports must be an individual effort and use the student's own words. All reports will be submitted to software to identify plagiarism and must comply with the University's academic integrity policy.

The video tutorial links will be listed in the assignment deliverable documents on the A2L course site.

- VT1: Writing Business Case (32m) – **Due Sun, Jan 30 @ 11:59pm (3%)**
- VT2: Unlock Your Team's Creativity (39m) - **Due Sun, Feb 20 @ 11:59pm (5%)**
- VT3: Entrepreneur Inside a Company (56m) - **Due Sun, Mar 20 @ 11:59pm (7%)**

Business Case Project (Group):
As a manager or technical professional, you often spot opportunities to help your team, department, and even your entire organization meet essential business goals. When you 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 can help you present a convincing argument for a particular solution to key stakeholders whose support you would need to implement your proposed solution.

Working in self-selected team's of five (5) 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 based on their coop workplace experience. **Note that ALL business case proposals must be approved in advance by the professor. There will be a maximum of 12 (or fewer) business case teams per course section due to presentation time constraints in the course schedule.**

Business Case Project: (cumulative worth 50%)
Phase 1: BizCase Idea Screen Presentation (5%)
- Define a problem or opportunity your group intends to solve. (Think of your previous coop or other workplace experiences as inspiration)
- Develop an opportunity statement.
- Develop business objectives and metrics relating to the opportunity identified.

Team presentation will occur "live" over the zoom platform either in the 1HR or 2HR class time in Week 5.
Presentation PPT Due: Mon Feb 07, 2022 @ 11:59pm (ALL Groups)

Phase 2: BizCase Scope Screen Presentation (10%)
Due: Mon Mar 07, 2022 @ 11:59pm (ALL Groups)
This presentation will include the defined business case opportunity, objectives, and metrics, a comprehensive Environmental Scan, and Qualitative Analysis (i.e., Stakeholders, Risk & Impact, Assumptions), and Viable Alternatives/Solutions.
There must be a detailed narrative fully explaining and giving background for all the critical areas of the business case rubric sections required for this presentation in proper written format within the note function of the PowerPoint slides, including citations where applicable.

The BizCase Scope Screen will have two separate deliverables;
1) a pre-recorded video capture of your team presentation using the Zoom platform
2) a separate slide deck in .pptx format of the same presentation. These elements are to be uploaded to the group assignment submission folder.

Phase 3a: BizCase Final Presentation (worth 10%)
Due: Mon Mar 28, 2022, @ 11:59pm (ALL Groups Presenting in W11)
Due: Mon Apr 04, 2022, @ 11:59pm (ALL Groups Presenting in W12)
A group presentation supported by a PowerPoint slide deck is also required. Team presentations will be delivered "live" over the Zoom platform during class times in weeks 11 and 12. **The date/times for each group will be randomly assigned using a lottery process.**

- All members of the group **must** actively participate in the presentation
- Each group will have 20 minutes – this includes presentation time and answering questions from the instructor. Note the instructor will stop the Presentation at 20 minutes, and if **this happens, your group will have 5% deducted from your presentation grade**.
- All members earn the same as the group grade

Phase 3b: BizCase Written Report (worth 20%)
The final report will include **ALL major business case sections**, including what was submitted and corrected/revised in the Idea and Scope Screen Presentations. It will consist of the defined opportunity, identified alternatives, feasibility & impact analysis, stakeholder & risk analysis, detailed and accurate estimated financial metrics and return on investment statements, implementation plan, and relevant appendices.

- **Final Written Report Due: Mon Apr 11, 2022, @11:59pm (ALL Groups)**, with one report submitted per group to dropbox on A2L.
- Individual submissions will not be accepted, and no emailed assignments will be accepted. They must be uploaded to the assignment dropbox on A2L.

Late assignments in any part of the course will receive an immediate 10% deduction from the assignment mark; plus, a further 10% late penalty per day will be applied and deducted from the assignment mark. Assignments that have not been submitted within three (3) days after the due date will not be graded and will receive a score of ZERO.

BizCase Peer Evaluation & Feedback (5%)
Opens: Mon, Apr 04 @ 6:00am / Closes: Tue Apr 12, 2022, @11:59pm
- Each student is required to individually complete a confidential peer evaluation process for each of their BizCase team members.
- The results will have a **maximum influence of 5%** based on team member ability and contribution to the BizCase Team.
- **NOTE: Failure to complete a peer evaluation for ALL your team members by the due date will result in a ZERO grade on your peer evaluation component.**

Active Learning /Team Progress Meetings Component: Worth 10%
There will be scheduled instructor-student team 1on1 meetings over the Zoom platform throughout the term. During these meetings, the instructor and team members will discuss the upcoming elements of the BizCase Project. Several worksheets are required to be completed in preparation for these meetings.

	Final Exam: Worth 25% The cumulative final exam will be written online during the scheduled examination period. The final exam format will include application-focused scenario short answer-type questions. **Note: Students must achieve a <u>passing mark</u> on the final exam assessment to pass the course. This means students must achieve an overall passing grade in the other course assessments (project, video tutorial assignments, etc.), plus achieve a minimum grade 12.5/25 on the final exam to pass the course.**	
3. SUB TOPIC(S)		
Week 1: Jan 10	**M1: The Coursescape** 1.1. Course Design & Delivery	Complete: Basadur Innovation Profile Assessment **Due: Sun, Jan 16 @ 11:59pm**
Week 2: Jan 17	**M2: Enabling Success** 2.1: Innovation-EntrepThinking Link 2.2: Innovation Style Contribution	Submit: Team Profile **Due: Sun, Jan 23 @11:59pm**
Week 3: Jan 24	**M3 The Opportunity** 3.1: BizCase Framework 3.2: BizCase Opportunity Detection	VT1: Writing Business Case (32m) (3%) **Due: Sun, Jan 30 @ 11:59pm**
Week 4: Jan 31	**M4: The Landscape** 4.1: BizCase Environmental Scan 4.2: BizCase Stakeholder Analysis 4.3: BizCase Risk Analysis	
Week 5: Feb 07	**Idea Screen "live" Zoom Team Presentations**	Submit: BizCase Idea Screen Slide Deck (5%) **Due: Mon, Feb 07 @ 11:59pm**
Week 6: Feb 14	**M5: Build the Case** 5.1: BizCase Alternatives & Assumptions	VT2: Unlock Your Team's Creativity (39m) (5%) **Due: Sun, Feb 20 @ 11:59pm**
MIDTERM RECESS: Monday, Feb 21 to Sunday, Feb 27 (No Virtual Classes or Meetings)		
Week 7: Feb 28	**M5: Build the Case** 5.2: BizCase Stakeholder Communications	
Week 8: Mar 07	**M5: Build the Case** 5.3: BizCase Cost-Benefits 5.4: BizCase ROI Projections	Submit: BizCase Scope Screen video-capture pre-recorded presentation + Slide Deck & Notes (10%) **Due: Mon, Mar 07 @ 11:59pm**
Week 9: Mar 14	**M5: Build the Case** 5.5: BizCase Recommendations 5.6: BizCase Implementation Plan	VT3: An Entrepreneur Inside a Company (7%) **Due: Sun, Mar 20 @ 11:59pm**
Week 10: Mar 21	**M5: Build the Case** 5.7: BizCase Executive Summary	
Week 11: Mar 28	**Final Business Case "live" Zoom Team Presentations**	Submit: Final BizCase Slides-W11 Groups (10%) **Due: Mon, Mar 28 @ 11:59pm**
Week 12: Apr 04	**Final Business Case "live" Zoom Team Presentations**	Submit: Final BizCase Slides-W12 Groups (10%) **Due: Mon, Apr 04 @ 11:59pm**

Week 13: Apr 11	Final Exam Preparation	Submit: Final BizCase Report-All Groups (20%) **Due: Mon, Apr 11 @ 11:59pm** Submit: Team Peer Evaluation (5%) **Opens: Mon, Apr 04 @ 6:00am** **Closes: Tue, Apr 12 @ 11:59pm**

Classes end: Tuesday, April 12, 2022
Final examination period: Thursday, April 14 to Friday, April 29, 2022
All examinations MUST BE written during the scheduled examination period.

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 an explanation and the opportunity to comment on changes.

4. ASSESSMENT OF LEARNING *including dates*	Weight
Group Business Case Project *(Group)* • BizCase Idea Screen Zoom Presentation + Slide Deck: 5% **(Due: Mon, Feb 07 @ 11:59pm)** • BizCase Scope Screen Video-Capture Presentation + Slide Deck: 10% **(Due: Mon, Mar 07 @ 11:59pm)** • BizCase Final Zoom Presentation + Slide Deck: 10% **(Due: W11 or 12 on the Monday @ 11:59pm** • BizCase Final Written Report: 20% **(Due: Mon Apr 11 @ 11:59pm)** • BizCase Team Contribution Assessment Report (individual): 5% **(Due: Tue, Apr 12 @ 11:59pm)**	50%
Video Tutorials Written Reflection Reports *(Individual)* • Unlock Your Team's Creativity: 3% **(Due: Sun, Jan 30 @ 11:59pm)** • Writing a Business Case: 5% **(Due: Sun, Feb 20 @ 11:59pm)** • Become an Entrepreneur Inside a Company: 7% **(Due: Sun, Mar 20 @ 11:59pm)**	15%
Course Learning Activities: *(Individual & Group)* Includes BizCase team work-in-progress worksheets, innovation + team profiles, etc.	10%
Comprehensive Online Final Examination (TBA – Apr 14 - 29, 2022)	25%
TOTAL	**100%**
Percentage grades will be converted to letter grades and grade points per the University calendar.	

5. LEARNING OUTCOMES
1. Examine the enablers and inhibitors that impact corporate entrepreneurship.
2. Understand how individual-contributor and firm-level innovation drives enterprise competitiveness and impacts the innovation process stages.
3. Perform an environmental scan to determine the competitive advantage and operating environment for a product or service innovation appropriate for an existing organization.
4. Prepare industry-level qualitative and quantitative analyses for an enterprise investment proposal.
5. Evaluate multiple alternatives for achieving innovation based on assumptions and business objectives.
6. Devise a communication plan to build credibility and sponsorship for innovation within a firm.
7. Generate a comprehensive written business case report and deliver several stage-gate presentations for a product or service innovation appropriate for an existing organization.

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6. COURSE OUTLINE – APPROVED ADVISORY STATEMENTS

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 expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. It is your responsibility to understand what constitutes academic dishonesty.

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. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, located at https://secretariat.mcmaster.ca/university-policies-procedures-guidelines/

The following illustrates only three forms of academic dishonesty: The following illustrates only three forms of academic dishonesty:
- plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained.
- improper collaboration in group work.
- copying or using unauthorized aids in tests and examinations.

AUTHENTICITY / PLAGIARISM DETECTION

Some courses may use a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be expected to submit their work electronically either directly to Turnitin.com or via an online learning platform (e.g. A2L, etc.) using plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty.

Students who do not wish their work to be submitted through the plagiarism detection software must inform the Instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software. All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, other software, etc.). For more details about McMaster's use of Turnitin.com please go to www.mcmaster.ca/academicintegrity.

COURSES WITH AN ON-LINE ELEMENT

Some courses may use on-line elements (e.g. e-mail, Avenue to Learn (A2L), LearnLink, web pages, capa, Moodle, ThinkingCap, etc.). Students should be aware that, when they access the electronic components of a course using these elements, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in a course that uses on-line elements will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

ONLINE PROCTORING

Some courses may use online proctoring software for tests and exams. This software may require students to turn on their video camera, present identification, monitor and record their computer activities, and/or lock/restrict their browser or other applications/software during tests or exams. This software may be required to be installed before the test/exam begins.

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.

CONDUCT EXPECTATIONS

As a McMaster student, you have the right to experience, and the responsibility to demonstrate, respectful and dignified interactions within all of our living, learning and working communities. These expectations are described in the Code of Student Rights & Responsibilities (the "Code"). All students share the responsibility of maintaining a positive environment for the academic and personal growth of all McMaster community members, whether in person or online.

It is essential that students be mindful of their interactions online, as the Code remains in effect in virtual learning environments. The Code applies to any interactions that adversely affect, disrupt, or interfere with reasonable participation in University activities. Student disruptions or behaviours that interfere with university functions on online platforms (e.g. use of Avenue 2 Learn, WebEx or Zoom for delivery), will be taken very seriously and will be investigated. Outcomes may include restriction or removal of the involved students' access to these platforms.

ACADEMIC ACCOMMODATION OF STUDENTS WITH DISABILITIES

Students with disabilities who require academic accommodation must contact Student Accessibility Services (SAS) at 905-525-9140 ext. 28652 or sas@mcmaster.ca to make arrangements with a Program Coordinator. For further information, consult McMaster University's Academic Accommodation of Students with Disabilities policy.

REQUESTS FOR RELIEF FOR MISSED ACADEMIC TERM WORK

McMaster Student Absence Form (MSAF): In the event of an absence for medical or other reasons, students should review and follow the Academic Regulation in the Undergraduate Calendar "Requests for Relief for Missed Academic Term Work".

ACADEMIC ACCOMMODATION FOR RELIGIOUS, INDIGENOUS OR SPIRITUAL OBSERVANCES (RISO)

Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the RISO policy. Students should submit their request to their Faculty Office normally within 10 working days of the beginning of term in which they anticipate a need for accommodation or to the Registrar's Office prior to their examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests. http://www.mcmaster.ca/policy/Students-AcademicStudies/Studentcode.pdf

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COPYRIGHT AND RECORDING

Students are advised that lectures, demonstrations, performances, and any other course material provided by an instructor include copyright protected works. The Copyright Act and copyright law protect every original literary, dramatic, musical and artistic work, including lectures by University instructors

The recording of lectures, tutorials, or other methods of instruction may occur during a course. Recording may be done by either the instructor for the purpose of authorized distribution, or by a student for the purpose of personal study. Students should be aware that their voice and/or image may be recorded by others during the class. Please speak with the instructor if this is a concern for you.

EXTREME CIRCUMSTANCES

The University reserves the right to change the dates and deadlines for any or all courses in extreme circumstances (e.g., severe weather, labour disruptions, etc.). Changes will be communicated through regular McMaster communication channels, such as McMaster Daily News, A2L and/or McMaster email.