Course Outline

1. COURSE INFORMATION

Session Offered	Winter 2022
Course Name	Creativity, Innovation and Technology
Course Code	3DM3
Date(s) and Time(s) of lectures	Saturdays 9-12 Jan. 15 – Apr. 9 Reading week Feb. 21-27
Program Name	Bachelor of Technology
Calendar Description	This course is a blend of hands-on and theoretical treatment on the subject of creating new technological product and service value in our society.
Instructor(s)	M. Piczak	E-Mail: A2L emailer only Office Hours & Location: online via Zoom

2. COURSE SPECIFICS

Course Description	Pressures from all directions have increased significantly on all organizations to develop new: a) products/services, b) organization processes, and c) business models. Market leadership and success starts with creativity and invention but requires extensive rational support for such initial activity to rise to the level of innovation. With this support, organizations can devise and capitalize-on opportunities in an institutionalized manner to achieve long term financial, market dominance, sustainability and other goals. In this course, we will explore: • Creativity: how individuals and groups become more creative in their work effort & output and decision-making • Invention: the result of creative endeavors and energy • Innovation: commercialization of inventions that are of value to society and mankind • Technology: recognizing the role of know-how and skill as integral components to the innovation process • Decision-Making: the thinking and tools to assist in making the critical decisions regarding an innovation process Learning is enabled through a combination of in-class/online discussion, group presentations, media articles, case analysis, independent/group research/study. Students share research findings with classmates by presenting online using Zoom. Students explore their own creativity inclinations through online assessment instruments.

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**
	Other Supplies	**Source**	

Prerequisite(s)	Registration in Civil Engineering Infrastructure Technology, Energy Engineering Technologies, Manufacturing Engineering Technology or Software Engineering Technology
Corequisite(s)	
Antirequisite(s)	
Course Specific Policies	Given that this course subscribes to a flipped classroom modality, it is expected that students will have read materials prior to class. There is no accommodation made to students who manage to enroll in more than one course on a given evening. Late work is penalized 10% per calendar day. All written work is evaluated for English, grammar, spelling. Students in group work can reapportion grades away from those who do not carry their weight subject to sufficient notice being provided. The instructor is provided with a note outlining the reapportionment that is to be applied.
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. 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. Instructor has the right to submit work to software to identify plagiarism.

3. SUB TOPIC(S)		
Week 1 J15	Introduction to course and creativity/innovation/technology	
Week 2 J22	Brainstorming as a creativity tool	
Week 3 J29	Creativity tools and models	
Week 4 F5	Creativity models Course Project Scope Presentation 3 minute pecha kucha	
Week 5 F12	Creative processes and models continued Erin McCluskey, founder, The Laundry Works, Hamilton	Erin joins us at 9:00
Week 6 F19	How to be and remain creative Tim Pollock (B.Tech grad 2014), Apple Corp, San Jose, California, Haptic Engines Apple iPhone Product Manager	Tim joins us at 11:00
F26	**Reading Week no class**	
Week 7 M5	Assessing innovation and creativity	
Week 8 M12	Sources for ideas	
Week 9 M19	Creative and innovative organizations 1	
Week 10 M26	Project presentations (15 minutes)	
Week 11 A2	Creative and innovative organizations 2	
Week 12 A9	Leading edge technologies and approaches	

Classes ends: April 12, 2022
Final examination period: Wednesday, April 14 to Thursday, 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 explanation and the opportunity to comment on changes.

4. ASSESSMENT OF LEARNING	Weight
Assignment 1 (Pecha Kucha + 2 page information mapping project proposal)	10%
Assignment 2 Squirrel Challenge	10%
Assignment 3 Leading Edge Technologies in Selected Industry	10%
Major project	35%
Final examination (comprehensive)	35%
TOTAL	**100%**

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

5. LEARNING OUTCOMES

1. Discuss the importance of each element in an innovation framework and the requirements to foster innovation.
2. Demonstrate the application of individual and group creativity tools and techniques.
3. Evaluate the innovative nature of products, services, business processes and models.
4. Analyze the innovative nature of organizations.
5. Demonstrate the appropriate use of selected decision structuring methods.
6. Propose appropriate decisions/conclusions to limited case studies and assignments, and effectively communicate the justification through group/individual reports/presentations/discussions.
7. Explain the importance of creativity, process, stakeholders, change and communication management, in the innovation and decision making processes.
8. Demonstrate effective communication (written and oral) skills using a selection of formats and software.

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 if the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity.

Academic dishonesty is to knowingly act of 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. McMaster University 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 McMaster University.
http://studentconduct.mcmaster.ca/student_code_of_conduct.html