

CSCI-4102 Product Management for the Digital World

Course Syllabus

Instructor Information

Instructor:	Dr Richard Evans	Office:	CS 317
E-mail:	R.Evans@dal.ca	Office Hours:	By Appointment
Class Meeting Time:	M 8:35-11:25	Room No:	MGMT 1016
Tutorial Meeting Time:	M 11:35-12:55	Room No:	MGMT 1016
Course Homepage:	https://dal.brightspace.com/		

Important Dates

- Reading Week (no classes): November 13-17, 2023
- Final Withdrawal Date without academic penalty: September 19, 2023
- Final Withdrawal Date with financial penalty: October 4, 2023

Course Description

This course explores relevant entrepreneurial principles, theories, and methods for organizing and managing significant design and innovation activity when bringing digital products to market successfully. Delivered as a 4th Year Elective, the course seeks to develop students' strategic planning skills and teamworking abilities, while encouraging entrepreneurial thinking. By examining how digital companies are created, why digital products fail, and how risks of failure may be minimized, students develop independent research skills and their ability for critical thinking. The course aims to develop students' capacity to apply knowledge, tools, techniques, project management and leadership principles to the creation of unique business models for the development and management of innovative digital products and services; they will identify appropriate branding and marketing strategies, and communication channels to deliver strategic plans effectively.

Learning Outcomes

On successful completion of this course, students should be able to:

1. Explain the relationships of design and innovation practice within the changing nature of digital business models and the creative industries.
2. Acquire and use knowledge of economic, environmental, and social factors to identify and target new opportunities for the creation of innovative digital products.
3. Apply the basic elements of human factors governing new product development.
4. Apply analytical and strategic planning tools to synthesize strategies and sound business planning as a basis for creating innovative digital products.
5. Use established design process and management tools and methodologies to assist in innovative product management.
6. Formulate comprehensive reports and communications using data from a range of disparate sources to support and justify decision making.

Course Rationale

Launching a new digital product or service into a new market is a high-risk strategy. Scholars estimate that 60-90% of start-up companies fail to satisfy the anticipated requirements of potential customers. The ability to understand your customers, including their needs, wants and desires, and ultimately create innovative and successful digitally enabled products or services that add real value, is paramount for effective product management in the digital age.

At the intersection between business, technology and user experience, product management is primarily a business function which refers to the ability to create products that are feasible, usable and which deliver real value to end users and / or customers. This course provides students with the theoretical background and critical knowledge required to become a Product Manager, or to work as part of a Product Management team, in the digital world. The course complements existing Management and Commerce courses, as well as CSCI 4193, Technology Innovation, which aims to teach students how to apply design thinking, rapid prototyping, and software development to validate ideas that could yield new business models. Complementary to these, the Product Management for the Digital World course provides students with the knowledge required to take an idea to market successfully. Students learn the intricacies of new product development and how to manage and lead the product development lifecycle. Further, they will learn how to identify and assess marketplace opportunities, how to brand and market products, and how to penetrate a market successfully while managing stakeholders' expectations.

Class Format and Course Communication

- Content will be delivered via a combination of traditional lectures and interactive workshops. There will be a two hour lecture each week to introduce relevant theory, develop understanding, and answer any general concerns that affect the whole class, followed by a two hour workshop.
- During the first workshop, teams will be created (approximately 4 students per team) based on individual personality traits identified through completion of the Belbin test. Establishing a strong team culture is essential to maximize the benefits of peer learning and achievement.
- Most lectures will be delivered by the Course Instructor, Dr Richard Evans, although several will be delivered by Dr Muhammad Faraz Mubarak, Postdoctoral Research Fellow, and experts from industry who have real-world experience in the lecture topic.
- Course material and announcements will be posted on the course's Brightspace site.
- The lectures will be recorded.
- Students must ask the instructor permission before recording class lectures.

Evaluation Criteria

Assessment Name	Weighting %	Learning Outcomes	Assessment Type
Essay (2000 words)	40	1,2,3,6	Individual Assignment
Business Model Canvas	20	1,2,3,4,5,6	Team Assignment
Business Model Report (2000 words)	20	1,2,3,4,5,6	Team Assignment
Team Video Presentation of Product Roadmap	20	1,2,5,6	Team Assignment

Individual Assignment: Essay (40%)

Criterion	Weighting %
Introduction	5
Critical analysis of the importance and reasons for companies to engage with consumers when designing new innovative digital products.	25
Critical analysis of the methods available to designers and computer scientists to engage and capture critical design feedback from consumers.	25
Critical analysis of the factors that inhibit the successful capture of product ideas from external sources.	25
Conclusion highlighting the main ideas presented in the essay.	10
Presentation and referencing, including clarity of information.	10

Team Assignment: Business Model Canvas (20%)

Criterion	Weighting %
Quality of the proposed business plan – creative and realistic; demonstrate good understanding of all key elements of the business model.	90
Overall standard of presentation – presentation, layout, graphical tidiness, clarity of information, referencing.	10

Team Assignment: Business Model Report (20%)

Criterion	Weighting %
Introduction to the 'Big Idea' i.e., What is the opportunity or problem that you have identified in the market? What gap are you fulfilling? How is your product innovative? How does it differ from existing solutions?	28
Identification and description of the target market, including: Who are the potential customers? How and why did you select them? What makes this group attractive?	8
Identification and description of the value propositions (i.e., core values that you will provide) you aim to offer to the chosen target market.	8
Identification of the channels you will use to reach, attract, and maintain relationships with the target market, as well as the rationale behind your choices.	8
Explanation of the type of relationships you intend to develop with the target market and your rationale.	8
Explanation of how you intend to generate revenue from your product.	8
Identification of the key activities required to deliver the values that you propose i.e., what are the key activities that you must carry out to bring your product to market successfully?	8
Identification of the key resources required to achieve all activities set out.	8
Identification of the key partners required to create and deliver your product to market successfully.	8
Explanation of the cost structure of your proposed product.	8

Team Assignment: Team Video Presentation of Product Roadmap (20%)

Criterion	Weighting %
Organization	
Agenda of presentation clearly presented.	10
Presentation was well structured with a good introduction and conclusion.	10
Content	
Information was pitched at an appropriate level to the target audience (e.g., technical terms are well-defined in language appropriate for the audience).	20
Introduction provides a strong overview of the digital product being developed and clearly outlines the remainder of the presentation.	20
Conclusion clearly summarizes the key points of the presentation.	20
Presentation	
Speaker is clearly audible and uses varied tone and pace during the presentation.	5
Speaker presents in a lively, interesting, and enthusiastic manner.	5
Speaker is confident in delivery and presents at an appropriate pace.	5
Slide deck presents information clearly and uses attractive visuals.	5

Deadlines

Assessment Name	Type	Weighting %	Date Available	Due Date
Essay (2000 words)	Individual	40	09/11/2023 (Week 1)	10/27/2023 at 23:59 (Week 7)
Business Model Canvas	Team	20	10/30/2023 (Week 8)	12/04/2023 at 23:59 (Week 13)
Business Model Report (2000 words)	Team	20		
Team Video Presentation of Product Roadmap (10 minutes)	Team	20		

Unless explicitly indicated otherwise, all assignments must be submitted electronically in PDF format (Assignments 1,2 and 3) or MP4 format (Assignment 4) via Brightspace by 11:59pm (Atlantic Time) on the due date displayed above. In addition to the details provided, further information relating to both assignments will be posted on the Brightspace site; please see the 'Assignments' folder, accessed using the left-hand navigation menu.

You must include your Full Name, Dalhousie ID, and word count on the first page of your assignment.

At busy times, the assignment submission process may run slowly. To ensure that your submission is not recorded as a late submission, please avoid submitting it very close to the deadline.

Notes

- A minimum grade of C is required in this course if it is core to your FCS degree, or if it will be used as a prerequisite for a subsequent CSCI course.
- As of 2019, students who receive a grade lower than C in the same required CS course twice, will be dismissed.
- The grade conversion scale in Section 17.1 of the Academic Regulations will be used (<https://academiccalendar.dal.ca/Catalog/ViewCatalog.aspx?pageid=viewcatalog&catalogid=117&chapterid=7302&topicgroupid=32188&loaduserredits=False>).
- A student must pass (50%) all assignments to pass the course.
- Late assignments will not be accepted.

- No collaboration is permitted on Assignment 1.
- All assignments will be checked with the Rubber Gasket plagiarism detection software.

Student Declaration of Absence

The Student Declaration of Absence policy shall apply. https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/academic-policies/student-absence.html The student has a maximum of two (2) SDAs per course per semester. The student **must** notify the instructor of their inability to meet a deadline **before** the deadline by contacting the instructor or submitting the completed SDA. Upon notification the student has 3 days after the deadline to submit the SDA.

Academic Standards

Failure to properly attribute sources in your work will be treated as an academic standards issue and points may be deducted for not following citation requirements. For example, forgetting to quote text taken from other sources, failure to include in-text citations, or a failure to include required information in the citations or references. Please see the resources on proper citation provided by the Dalhousie Writing Center (<https://dal.ca/libguides.com/c.php?g=257176&p=5001261>).

Please note that if it appears that the error was made with intent to claim other people's work as your own such as a lack of both citations and references, an allegation of plagiarism will be submitted to the Faculty Academic Integrity Officer, which could result in consequences such as a course failure.

Required Texts and Resources

There is no required text for the course; however, students are encouraged to consult recognized textbooks on product management, innovation management, and new product development. These include:

- Osterwalder, A., Pigneur, Y. & Clark, T. (2010) Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers. New Jersey: Wiley.
- Brennan, K.J., Godwin, S. & Hendrickx, F. (2022). Digital Product Management. Swindon: BCS Learning and Development Ltd.
- Kahn, K.B., Kay, S.L., Slotegraaf, R.J. & Uban, S. (2023). PDMA Handbook of New Product Development. 3rd ed. Hoboken: John Wiley & Sons Inc.
- Van der Pijl, P., Lokitz, J., Solomon, L.K., van Lieshout, M. & van der Pluijm, E. (2016) Design a Better Business: New Tools, Skills, and Mindset for Strategy and Innovation. New Jersey: John Wiley & Sons, Inc.

The above textbooks are available online and free of charge via the university library website: <https://libraries.dal.ca/find.html>.

In addition to the above textbooks, any academic journal, which is peer-reviewed, is considered a legitimate source of knowledge for this course. Listed below is a selection of top ranked product management journals which may be accessed through your Dalhousie University account:

- Journal of Product Innovation Management
- IEEE Transactions on Engineering Management
- Technological Forecasting and Social Change
- R and D Management
- Technovation
- Industry and Innovation
- International Journal of Innovation Management
- Research Technology Management: international journal of research management

Prerequisites

CSCI-3160 or CSCI 4193.

In addition, if you are new to the concepts of product management and /or business model generation, it is recommended that you read the following textbook prior to the commencement of the course.

- Osterwalder, A., Pigneur, Y. & Clark, T. (2010) Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers. New Jersey: Wiley.

Tentative List of Topics

Wk.	Date	Lecture (08:35-11:25)	Workshop (11:35-12:55)
2	09/11/2023	Introduction to the Course, and Product and Innovation Management Introduction to Assignment 1	What causes a Product to Fail? Completion of Belbin Test
3	09/18/2023	Market and Consumer Research (<i>Dr Muhammad Faraz Mubarak</i>)	Market and Consumer Segmentation
4	09/25/2023	Competitor and Marketplace Analysis (<i>Dr Muhammad Faraz Mubarak</i>)	Marketplace Assessment
6	10/16/2023	Consumer Collaboration	Open Innovation
	10/20/2023 <i>online</i>	Value Proposition: Customer Needs and Desired Values (<i>Dr Eduardo Ahumada-Tello, Autonomous University of Baja California</i>)	What value are you adding? Formative Feedback on Assignment 1
7	10/23/2023	New Product Development & Innovation Strategies	Market Entry Strategies
8	10/30/2023	Creating and Funding a Start-Up Introduction to Assignments 2, 3 and 4	Creating your Business Model Canvas
	11/03/2023 <i>online</i>	Product Lifecycle Management (<i>Dr Muni Prasad, Cummins Inc.</i>)	Creating Product Roadmaps
9	11/06/2023	Managing and Sustaining Innovation	Leadership and Organizational Culture
10	11/13/2023	Fall study week (no classes)	
11	11/20/2023	Marketing	Formative Feedback on Assignments 2, 3 and 4
12	11/27/2023	Branding	Presenting and Pitching your Ideas
13	12/04/2023	Submission of Assignments 2,3 and 4 (no classes)	

Responsible Computing Policy

Usage of all computing resources in the Faculty of Computer Science must be within the Dalhousie Acceptable Use Policies (https://www.dal.ca/dept/university_secretariat/policies/information-management-and-technology/acceptable-use-policy.html) and the Faculty of Computer Science Responsible Computing Policy. For more information please see https://www.dal.ca/content/dam/dalhousie/pdf/faculty/computerscience/policies-procedures/fcs_policy_local.pdf

Use of Plagiarism Detection Software

All submitted assignments may be passed through a plagiarism detection software, such as the plagiarism detector Moss (<https://theory.stanford.edu/~aiken/moss/>) Similarity Detection System, or similar systems. If a student does not wish to have their assignments passed through plagiarism detection software, they should contact the instructor for an alternative. Please note, that code not passed through plagiarism detection software will necessarily receive closer scrutiny. https://cdn.dal.ca/content/dam/dalhousie/pdf/dept/university_secretariat/policy-repository/OriginalitySoftwarePolicy.pdf.

Use of Artificial Intelligence Tools

You may use AI-driven tools to assist you in learning but remember that your objective is to understand, achieve, and apply the course competencies and outcomes. While you may use tools for learning, specific assessments in this course will disallow the use of AI-driven tools to assert that you have attained course learning outcomes. This is because a graduate must be able to analyze, assess and produce work unassisted by AI technology. Where tools are allowed: you must acknowledge all tools used to assist you. If applicable, you must provide links to chat logs. Using AI-driven tools where prohibited constitutes an academic offense.

Student Health and Wellness

Taking care of your health is important. As a Dalhousie student, you have access to a wide range of resources to support your health and wellbeing. Students looking to access physical or mental health & wellness services at Dalhousie can go to the Student Health & Wellness Centre in the LeMarchant Building. The team includes: registered nurses, doctors, counsellors and a social worker. Visit dal.ca/studenthealth to learn more and book an appointment today.

Students also have access to a variety of online mental health resources, including telephone/texting counselling and workshops/training programs. Learn more and access these resources at dal.ca/mentalhealth.

Culture of Respect¹

Every person has a right to respect and safety. We believe inclusiveness is fundamental to education and learning. Misogyny and other disrespectful behaviour in our classrooms, on our campus, on social media, and in our community is unacceptable. As a community, we must stand for equality and hold ourselves to a higher standard.

What we all need to do:

1. **Be Ready to Act:** This starts with promising yourself to speak up to help prevent it from happening again. Whatever it takes, summon your courage to address the issue. Try to approach the issue with open-ended questions like “Why did you say that?” or “How did you develop that belief?”
2. **Identify the Behaviour:** Use reflective listening and avoid labeling, name-calling, or assigning blame to the person. Focus the conversation on the behaviour, not on the person. For example, “The comment you just made sounded racist, is that what you intended?” is a better approach than “You’re a racist if you make comments like that.”

¹ Source: Speak Up! © 2005 Southern Poverty Law Center. First Printing. This publication was produced by Teaching Tolerance, a project of the Southern Poverty Law Center. Full “Speak Up” document found at: <http://www.dal.ca/dept/dalrespect.html>. Revised by Susan Holmes from a document provided April 2015 by Lyndsay Anderson, Manager, Student Dispute Resolution, Dalhousie University, 902.494.4140, lyndsay.anderson@dal.ca www.dal.ca/think.

3. **Appeal to Principles:** This can work well if the person is known to you, like a friend, sibling, or co-worker. For example, "I have always thought of you as a fair-minded person, so it shocks me when I hear you say something like that."
4. **Set Limits:** You cannot control another person's actions, but you can control what happens in your space. Do not be afraid to ask someone "Please do not tell racist jokes in my presence anymore" or state "This classroom is not a place where I allow homophobia to occur." After you have set that expectation, make sure you consistently maintain it.
5. **Find or be an Ally:** Seek out like-minded people that support your views, and help support others in their challenges. Leading by example can be a powerful way to inspire others to do the same.
6. **Be Vigilant:** Change can happen slowly, but do not let this deter you. Stay prepared, keep speaking up, and do not let yourself be silenced.

University Statements

This course is governed by the academic rules and regulations set forth in the University Calendar and the Senate.

<https://academiccalendar.dal.ca/Catalog/ViewCatalog.aspx?pageid=viewcatalog&catalogid=117&loaduseredits=False>.

Territorial Acknowledgement

Dalhousie University is located in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq. We are all Treaty people.

Dalhousie acknowledges the histories, contributions, and legacies of the African Nova Scotia people and communities who have been here for over 400 years.

Internationalization

At Dalhousie, 'thinking and acting globally' enhances the quality and impact of education, supporting learning that is "interdisciplinary, cross-cultural, global in reach, and orientated toward solving problems that extend across national borders." <https://www.dal.ca/about-dal/internationalization.html>.

Academic Integrity

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect. As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity. (read more: http://www.dal.ca/dept/university_secretariat/academic-integrity.html).

Accessibility

The Student Accessibility Centre is Dalhousie's centre of expertise for matters related to student accessibility and accommodation. If there are aspects of the design, instruction, and/or experiences within this course (online or in-person) that result in barriers to your inclusion please contact: https://www.dal.ca/campus_life/academic-support/accessibility.html for all courses offered by Dalhousie with the exception of Truro.

Conduct in the Classroom — Culture of Respect

Substantial and constructive dialogue on challenging issues is an important part of academic inquiry and exchange. It requires willingness to listen and tolerance of opposing points of view. Consideration of individual differences and alternative viewpoints is required of all class members, towards each other, towards instructors, and towards guest speakers. While expressions of differing perspectives are welcome and encouraged, the words and language used should remain within acceptable bounds of civility and respect.

Diversity and Inclusion — Culture of Respect

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness (Strategic Priority 5.2). (read more: <http://www.dal.ca/cultureofrespect.html>).

Student Code of Conduct

Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner—perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution. (read more: https://cdn.dal.ca/content/dam/dalhousie/pdf/dept/university_secretariat/policy-repository/Code%20of%20Student%20Conduct%20rev%20Sept%202021.pdf).

Fair Dealing Policy

The Dalhousie University Fair Dealing Policy provides guidance for the limited use of copyright protected material without the risk of infringement and without having to seek the permission of copyright owners. It is intended to provide a balance between the rights of creators and the rights of users at Dalhousie. (read more: https://www.dal.ca/dept/university_secretariat/policies/academic/fair-dealing-policy.html).

Originality Checking Software

The course instructor may use Dalhousie's approved originality checking software and Google to check the originality of any work submitted for credit, in accordance with the Student Submission of Assignments and Use of Originality Checking Software Policy. Students are free, without penalty of grade, to choose an alternative method of attesting to the authenticity of their work, and must inform the instructor no later than the last day to add/drop classes of their intent to choose an alternate method. (read more: https://cdn.dal.ca/content/dam/dalhousie/pdf/dept/university_secretariat/policy-repository/OriginalitySoftwarePolicy.pdf).

Student Use of Course Materials

These course materials are designed for use as part of the CSCI courses at Dalhousie University and are the property of the instructor unless otherwise stated. Third party copyrighted materials (such as books, journal articles, music, videos, etc.) have either been licensed for use in this course or fall under an exception or limitation in Canadian Copyright law. Copying this course material for distribution (e.g. uploading material to a commercial third party website) may lead to a violation of Copyright law.

Learning and Support Resources

Please see https://www.dal.ca/campus_life/academic-support.html.