



**Carleton University  
Sprott School of Business  
BUSI 4607 - Section A  
Fall Term 2017**

**MANAGEMENT OF TECHNOLOGY AND INNOVATION**

Instructor: Tom Duxbury, P.Eng., MBA, CPA, CMA  
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Office Hours: By appointment (email)  
Email: tom\_duxbury@carleton.ca  
Course meets: SA 517  
Mondays 11:35 am – 2:25 pm

Pre-requisites & precluded Courses: Third-year standing, and BUSI 2204 or BUSI 2208, and BUSI 3103 (with a grade of C- or higher in each).

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**1.0 COURSE CALENDAR DESCRIPTION**

Integration of technology and strategy; design of technological strategy; development of new business around new technology; and management of corporate research and development, including pre-competitive consortia.

**2.0 PREREQUISITES**

Third-year standing, and [BUSI 2204](#) or [BUSI 2208](#), and [BUSI 3103](#) (with a grade of C- or better in each). The School of Business enforces all prerequisites. It is your responsibility to ensure that you meet the prerequisite requirements for this course. Lack of prerequisite knowledge may lead to failure in the course. Only the Undergraduate Program Advisor of the School can waive prerequisite requirements.

### 3.0 COURSE OBJECTIVES

The objective of *BUSI 4607 Management of Technology & Innovation* is to understand how companies can manage technology and innovation for competitive advantage and sustainable growth. The course focuses on the strategic issues posed by emerging new technologies; with implications for pioneering and incumbent firms who are faced with disruptions in their existing business. The course provides details of frameworks and tools critical for managing technology-led industries such as IT, pharmaceuticals and biotechnology. Throughout the course the discussion will deal with strategic and managerial, rather than technical choices – technical expertise is neither expected nor required. The emphasis in the course is on the development and application of conceptual models which clarify the interaction between competition, patterns of technological change, and the structure and development of firm capabilities. Technology and innovation management is a managerial art that requires practice and reflection to master. The course emphasizes practical applications using topical case studies and demands a high degree of interactive participation from the students. With the successful completion of the course, the student will understand the vocabulary and practices of innovation management, and be able to plan and critique innovation strategies for new and existing technology ventures.

### 4.0 READINGS/TEXTBOOK

**Required Text.** The following textbook is a requirement for BUSI 4607:

Trott, Paul. (2017). *Innovation Management and New Product Development (6th Edition)*. Harlow, UK: Pearson Education. ISBN-13: 978-1-292-13342-3

Note that only the 6th edition (2017) will be supported in this course.

**Supplemental Reading Links.** Extra reading material links will be posted on cuLearn; while students will not be tested on them, these papers will provide added depth and may be helpful in preparing project work.

## 5.0 METHOD OF INSTRUCTION

Students will learn key concepts through experiential learning, lectures, simulations, case studies, videos and interactions with practitioners. The format of the course consists generally of one 170-minute class meeting per week. The primary role of the course instructor is to lead discussion and experiential learning in practical applications of course concepts. Class sessions entail a mixture of lecture, videos, problem analysis, case studies and class discussion. The content of any lecture presumes and expects that you have carefully studied the assigned reading. Lectures emphasize major topics and readings, yet you are responsible for all assigned materials. It requires active learning, which means that the student must take responsibility for the learning that takes place. It is critical that students prepare for each class by reading the assigned case studies ahead of time, and are prepared to discuss them thoughtfully. Failure to prepare for weekly case study discussions will be reflected in poor participation grades. Students are encouraged to ask questions and to stimulate discussion on topics that are of interest to the class.

## 6.0 EVALUATION

Participation (class, case discussions)	10%
Mid-Term Test	20%
Final exam (online via cuLearn)	30%
Team Case Project (groups of 2-3)	
Presentation	5%
Final Paper Submission	25%
Innovation Case Simulation	10%
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	100%

**Participation.** Innovation management has many nuances that cannot be gleaned from a textbook alone, and active engagement is essential to the successful completion of this course. You are expected to come to class prepared to learn, ask questions, share your knowledge, and challenge each other every week. Case study discussions are a great tool for bringing innovation concepts to life, but they require preparation to be effective. Many classes

involve short case studies that you must have read and thought about prior to the class. You may expect to be quizzed about the cases on the weeks they are discussed. Case discussions will count towards class participation marks. Your participation mark will be based on a) attendance; b) preparation; c) evidence of supplemental reading, and d) quality of contribution and questions.

**Mid-Term Test.** There will be an in-class test held mid-way through the term, worth 20% of the final grade. Those missing the midterm with medical documentation will be permitted to arrange for a make up test. Further details will be announced in class.

Note (1): To pass the course, individual capability must be demonstrated. Students must achieve a minimum grade in the midterm test of 40%, in addition to other requirements.

Note (2): Satisfactory performance in personal work is required in order to pass the course, see section 18.0 at the end of this outline.

**Final Exam.** The final exam for this course will be held online via cuLearn after classes end. The final exam includes all concepts covered in the course, including case studies, videos, guest lectures and class presentations. The final exam is an assessment of individual learning during this course, and not a "group effort". Exam rules will apply and students are not permitted to communicate in any way with others regarding the exam content. Failure to observe the confidential nature of the final exam will be treated like any other exam violation at Carleton, as a serious academic offence. Further instructions will be posted on the course cuLearn site.

Note (3): To pass the course, individual capability must be demonstrated. Students must achieve a minimum grade in the final exam of 40%, in addition to other requirements.

Note (4): Satisfactory performance in personal work is required in order to pass the course, see section 18.0 at the end of this outline.

**Team Case Project.** The primary objective of the group project in this course is to demonstrate the ability to apply innovation concepts to real-world situations of interest to them. Students may elect to complete the case project in teams of two or three. The deliverables

consist of a written report and an in-class presentation. No late submissions will be accepted. Further instructions will be posted on the course cuLearn site.

**Innovation Case Simulation.** Near the end of the term, one class will be dedicated to running a case simulation from the Harvard Business School. Students will be evaluated based upon their ability to apply course concepts under conditions of uncertainty. Further instructions will be posted on the course cuLearn site.

## 7.0 CONDUCT

Professional conduct is built upon the idea of mutual respect. Such conduct entails (but is not necessarily limited to):

- *Attending the class.* Each class benefits from the attendance and participation of all students. Your grade for participation will be affected by absences. Regular class attendance is important and required. I expect you to attend class and contribute to a quality discussion. Class and team discussion of the materials (e.g., readings, assignments, and cases) are an important part of the learning process. If circumstances prevent attendance at a class meeting, please remember that you are responsible for all materials discussed, handouts distributed, assignments covered, and announcements made.
- *Arriving on time.* Late arrivals are disruptive to both lectures and class discussion, and show disrespect to those who are on time.
- *Minimizing disruptions.* You should not leave and re-enter the class. You should avoid engaging in side conversations after class has begun.
- *Focusing on the class.* While you may take notes on laptops, do not use laptop computers or hand-held devices for other tasks while in class. Activities such as net surfing, and answering email are very impolite and disruptive both to neighbors and the class.
- *Being prepared for class.* You should be ready to discuss any assigned readings and to answer any assigned questions for each day's class, including being ready to open a case assigned for that day.
- *Cellular phones.* The use of cellular phones IS NOT PERMITTED in this class. It is disruptive to the instructor and class members. If you carry a phone to class, please make sure it is turned off. If an emergency situation requires you to keep your cell phone turned on you may wish to keep the silent mode on, please discuss this with the instructor prior to the class starting.

## 8.0 OFFICE HOURS

The course instructor is available for consultation by email daily, and office hours are generally by appointment, either before or after class. Teaching assistants may be available for consultation depending on budget allocation. Days, times and location will be announced in class by the instructor and posted to the course website, if any.

## 9.0 SCHEDULE

## BUSI 4607 - FALL 2017

Week	Date	Topics (Reading)	In-Class Case Discussion
1	Sept 11	Overview & Introduction to Innovation Management (Ch. 1)	
2	Sept 18	Disruptive Change & the Innovator's Dilemma (Ch.16)	Drone Delivery (Trott, p.76)
3	Sept 25	Managing Uncertainty (Ch. 4)	Gore-Tex (Trott, p.145)
4	Oct 2	Innovation Inside Firms (Ch. 4) Intellectual Property (Ch. 6)	Innocent (Trott, p.508)
	Oct 9	<b>No Class - Thanksgiving</b>	
5	Oct 16	Open Innovation (Ch. 11) Ecosystems, Knowledge Networks & Strategic Alliances, (Ch. 6, 7,10)	Proctor & Gamble (CuLearn)
	Oct 23	<b>No Class - Fall Break</b>	
6	Oct 30	<b>Mid-term Test</b>	
7	Nov 6	Managing Research & Development (Ch. 9, 10, 11)	Pfizer Viagra (Trott, p.330)
8	Nov 13	Business Models (Ch. 12) Strategy & Innovation (Ch. 13) New Product Development (Ch. 14)	Cork (Trott, p.251)
9	Nov 20	Entrepreneurship and Innovation (Reading on CuLearn)	TBA (cuLearn)
10	Nov 27	Service Innovation (Ch. 15) Marketing Research & Innovation (Ch. 16) Managing New Product Process (Ch. 17)	3M (Trott, p.612)
11	Dec 4	<b>Term Case Project Presentations</b>	Case Project Reports Due
12	Dec 8	Innovation Case Simulation Final Course wrap-up	

## IMPORTANT ADDITIONAL INFORMATION

### **10.0 Course Sharing Websites**

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

### **11.0 Group work**

The Sprott School of Business encourages group assignments in the school for several reasons. They provide you with opportunities to develop and enhance interpersonal, communication, leadership, follower-ship and other group skills. Group assignments are also good for learning integrative skills for putting together a complex task. Your professor may assign one or more group tasks/assignments/projects in this course. Before embarking on a specific problem as a group, it is your responsibility to ensure that the problem is meant to be a group assignment and not an individual one.

In accordance with the Carleton University Undergraduate Calendar (p 34), the letter grades assigned in this course will have the following percentage equivalents:

A+ = 90-100	B+ = 77-79	C+ = 67-69	D+ = 57-59
A = 85-89	B = 73-76	C = 63-66	D = 53-56
A - = 80-84	B - = 70-72	C - = 60-62	D - = 50-52
F = Below 50			

Grades entered by Registrar:

WDN = Withdrawn from the course

DEF = Deferred

## 12.0 Academic Regulations, Accommodations, Etc.

University rules regarding registration, withdrawal, appealing marks, and most anything else you might need to know can be found on the university's website, here:

<http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/>

## 13.0 Requests for Academic Accommodations

*For Students with Disabilities:*

The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or [pmc@carleton.ca](mailto:pmc@carleton.ca) for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your **Letter of Accommodation** at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (*if applicable*). **Requests made within two weeks will be reviewed on a case-by-case basis.** After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website ([www.carleton.ca/pmc](http://www.carleton.ca/pmc)) for the deadline to request accommodations for the formally-scheduled exam (*if applicable*).

*For Religious Obligations:*

Students requesting academic accommodation on the basis of religious obligation should make a formal, written request to their instructors for alternate dates and/or means of satisfying academic requirements. Such requests should be made during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist, but no later than two weeks before the compulsory event.

Accommodation is to be worked out directly and on an individual basis between the student and the instructor(s) involved. Instructors will make accommodations in a way that avoids academic disadvantage to the student.

Students and instructors can confirm accommodation eligibility of a religious event or practice by referring to the Equity Services website (<http://carleton.ca/equity/accommodation/religious-observances/>) for a list of holy days and Carleton's Academic Accommodation policies. If there are any questions on the part of the student or instructor, they can be directed to an Equity Services Advisor in the Equity Services Department for assistance.



*For Pregnancy:*

Pregnant students requiring academic accommodations are encouraged to contact an Equity Advisor in Equity Services to complete a letter of accommodation. The student must then make an appointment to discuss her needs with the instructor at least two weeks prior to the first academic event in which it is anticipated the accommodation will be required.

#### **14.0 Academic Integrity**

Violations of academic integrity are a serious academic offence. Violations of academic integrity – presenting another’s ideas, arguments, words or images as your own, using unauthorized material, misrepresentation, fabricating or misrepresenting research data, unauthorized co-operation or collaboration or completing work for another student – weaken the quality of the degree and will not be tolerated. Penalties may include; a grade of Failure in the submitted work and/or course; academic probation; a refusal of permission to continue or to register in a specific degree program; suspension from full-time studies; suspension from all studies at Carleton; expulsion from Carleton, amongst others. Students are expected to familiarize themselves with and follow the Carleton University Student Academic Integrity Policy which is available, along with resources for compliance at: <http://carleton.ca/studentaffairs/academic-integrity>.

#### **15.0 Sprott Student Services**

The Sprott student services office, located in 710 Dunton Tower, offers academic advising, study skills advising, and overall academic success support. If you’re having a difficult time with this course or others, or just need some guidance on how to successfully complete your Sprott degree, please drop in any weekday between 8:30am and 4:30pm. Our advisors are happy to discuss grades, course selection, tutoring, concentrations, and will ensure that you get connected with the resources you need to succeed! <http://sprott.carleton.ca/students/undergraduate/support-services/>

**Be in the know with what’s happening at Sprott: Follow @SprottStudents and find us on Facebook SprottStudentsSprott.**

#### **16.0 Centre for Student Academic Support**

The Centre for Student Academic Support (CSAS) is a centralized collection of learning support services designed to help students achieve their goals and improve their learning both inside and outside the classroom. CSAS offers academic assistance with course content, academic writing and skills development. Visit CSAS on the 4th floor of MacOdrum Library or online at: [carleton.ca/csas](http://carleton.ca/csas).

## **17.0 Important Information:**

- Students must always retain a hard copy of all work that is submitted.
- All final grades are subject to the Dean's approval.
- For us to respond to your emails, we need to see your full name, CU ID, and the email must be written from your valid CARLETON address. Therefore, it would be easier to respond to your inquiries if you would send all email from your Carleton account. If you do not have or have yet to activate this account, you may wish to do so by visiting <http://carleton.ca/ccs/students/>

## **18.0 SATISFACTORY IN-TERM PERFORMANCE**

*Students may not rely on group work to pass a course they would have otherwise failed on their own.* The requirement for Satisfactory In-term Performance is set at **50%** of all personal term work combined. The requirements for satisfactory performance does *not* include the Team Case Project. It is the student's responsibility to monitor and maintain their own performance during the course of the term. Unsatisfactory In-term Performance in this course will lead to failure in this course, regardless of test or exam performance.

## **IMPORTANT DATES**

### **Fall Term 2017**

Below is a listing of Academic and Financial dates and deadlines. Please visit the respective office's website for more detailed information on any of the dates and deadlines listed below. To facilitate with this, the financial related dates and deadlines have been linked to the Student Accounts dates and deadlines pages.

#### **September 4**

Statutory holiday. University closed.

#### **September 5**

Academic orientation (undergraduate and graduate).

Orientation for Teaching Assistants.

All students are expected to be on campus. Class and laboratory preparations, departmental introductions for students and other academic preparation activities will be held.

#### **September 6**

Fall term begins.

Fall and fall/winter classes begin.

**September 15-17**

Full and late summer deferred final examinations held.

**September 19**

Last day of registration for fall term and fall/winter courses.

Last day to change courses or sections (including auditing) for fall/winter and fall term courses. Graduate students who have not electronically submitted their final thesis copy to the Faculty of Graduate and Postdoctoral Affairs will not be eligible to graduate in Fall 2017 and must register for the fall 2017 term.

**September 30**

Last day to withdraw from fall term and fall/winter courses with a full [fee adjustment](#) (financial withdrawal). Withdrawals after this date will create no financial change to Fall term fees and will result in a grade(s) of WDN appearing on your official transcript.

**October 6**

December examination schedule (fall term final and fall/winter mid-terms) available online.

**October 9**

Statutory holiday. University closed.

**October 23-27**

Fall break. Classes are suspended.

**November 1**

Application deadline to study at another institution on a [letter of permission](#) for the winter term.

**November 10**

Last day to request formal exam accommodations for December examinations to the Paul Menton Centre for Students with Disabilities. Late requests will be considered on case-by-case basis.

**November 24**

Last day for summative or final examinations in fall term courses before the official examination period (see [Examination Regulations](#) in the Academic Regulations of the University section of the Undergraduate Calendar).

**December 1**

Last day for receipt of applications from potential winter (February) graduates.

Last day for graduate students to submit their supervisor-approved thesis in examinable form to the department.

**December 8**

Fall term ends.

Last day of fall-term classes.

Classes follow a Monday schedule.

Last day for academic withdrawal from fall term courses.

Last day for handing in term work and the last day that can be specified by a course instructor as a due date for term work for fall term courses.

**December 9**

No classes or examinations take place.

**December 10 – 22**

Final examinations in fall term courses and mid-term examinations in fall/winter courses may be held. Examinations are normally held all seven days of the week.

**December 22**

All take home examinations are due.

**December 25-January 1, 2018**

University closed