



Managing Technological Innovation

SECTION I: Course Overview

Course Code: MIT360DUB

Subject Area(s): Technological Information and Innovation

Prerequisites: See Below

Language of Instruction: English

Total Contact Hours: 45

Recommended Credits: 3

COURSE DESCRIPTION

The history of technological innovation has been nothing short of remarkable, affecting our lives, the effectiveness of organizations, the profitability of industries, the well-being of societies and the prosperity of nations.

For decades, established businesses have struggled to lead the commercialization of breakthrough innovations and to transform their organizations and industries to capture the value that can be enabled by these new technologies and innovations.

According to research (1) organizations that are consistently successful at managing innovation outperform their peers in term of growth and financial performance.

The pace of change during the last decade has been staggering, and today's executives recognize that leading innovation is no longer a "side project" to be managed outside the core business—it is now the business and must be managed as part of the core.

While most executives recognize that the ability to lead innovation is a key strategic driver of their firms' success in the future, the capabilities required to execute this are woefully lacking.

This course is designed to introduce students to the challenges that large companies have consistently confronted in this area, provide examples of large companies that have overcome these challenges with careful and effective management, and illustrate how some of the best practices from the startup world are being applied in large companies operating at the frontier of innovation.

Understanding the processes that underpin technological innovation is therefore crucial, whether you are a user or producer of technological innovation. Furthermore if you are involved in managing innovation processes, an understanding of the overall process of innovation and its variations is a core professional competence.

This course examines innovation from a management perspective, enabling you to improve how you contribute to the process and management of technological innovation.

The rapid pace of the field's evolution has brought an increase in multi-disciplinary approaches and skills, while expanding the available tool kit and pushing the boundaries of possibility forward.

This course provides expert navigation through the abundance of new data, new methods, new concepts, and approaches — but it is designed to encourage and support tailored experimentation, not replace it.

Equipped with a strong foundation and a productive innovation management mindset, today's students will be equipped to bring about the era's next great advances. This course will be differentiated from others by its own unique characteristics:

- Strong evidence-based approach to understand and practice the management of innovation with using current academic research to support the in-class learnings.
- Practical, expert-tested process model and tools including case-studies from leading international organizations.

The course will be delivered following these 6 key topics:

- Part I: Managing Innovation
- Part II: Context of Innovation
- Part III: Search for Innovation
- Part VI: Selection of Innovation
- Part V: Implementing Innovation
- Part VI: Learning and Capturing Innovation

LEARNING OBJECTIVES

Upon successful completion of this course, students will be able to:

- Analyze the strategic concepts and models of innovation and technology management within the context of modern organizations.
- Evaluate the different alternatives of innovation implementation and learning environments.
- Explain the complexities of learning and adopting innovation and the resulting commercial relationships that emerge and exist between innovation and its commercialization.
- Search for Analysis and assess the best context for creativity and innovation.
- Appraise the dynamic nature of technology and innovative environments with relation to future trends in national and international organizations.

PREREQUISITES

Prior to enrollment, this course requires you to have completed either one 200-level course **or** two 100-level courses in any of the following subject areas: Business, Management, **or** (Services) Marketing.

SECTION II: Instructor & Course Details

INSTRUCTOR DETAILS

| | |
|-----------------------------|-----|
| Name: | TBA |
| Contact Information: | TBA |
| Term: | TBA |

ATTENDANCE POLICY

This class will meet four times per week, each session is 2.5 hours, for a total of 15 sessions for four weeks. All students are expected to arrive on time and prepared for the day's class session.

CEA enforces a mandatory attendance policy. You are therefore expected to attend all regularly scheduled class sessions, including any field trips, site visits, guest lectures, etc. that are assigned by the instructor. The table below shows the number of class sessions you may miss before receiving a grade penalty.

| ALLOWED ABSENCES – SUMMER TERM | | |
|-----------------------------------|--------------------|--|
| Courses Meeting X day(s) Per Week | Allowed Absence(s) | Automatic Failing Grade at Xth absence |
| Courses meeting 5 days per week | 1 Absence | 4 th Absence |

For every additional absence beyond the allowed number, your final course grade will drop down to the subsequent letter grade (ex: A+ to A). As a student, you should understand that the grade penalties will apply if you are marked absent due to tardiness or leaving class early. In the table below, you will find the grade penalty associated with each excessive absence up to and including automatic course failure.

| ATTENDANCE DOCKING PENALTIES | | | | |
|---|-----------------|------------------|-----------------|-------------------|
| Absence | 1 st | 2 nd | 3 rd | 4 th |
| Penalty | No Penalty | 0.5 Grade Docked | 1 Grade Docked | Automatic Failure |
| HIGHEST POSSIBLE GRADE AFTER ATTENDANCE PENALTIES | | | | |
| Grade | A+ | A | A- | F |

CEA does not distinguish between excused and unexcused absences. As such, no documentation is required for missing class. Similarly, excessive absences, and the grade penalty associated with each, will not be excused even if you are able to provide documentation that shows the absence was beyond your control. You should therefore only miss class when truly needed as illness or other unavoidable factors may force you to miss a class session later on in the term.

GRADING & ASSESSMENT

The instructor will assess your progress towards the above-listed learning objectives by using the forms of assessment below. Each of these assessments is weighted and will count towards your final grade. The following section (Assessment Overview) will provide further details for each.

| | |
|---|------------|
| Class Participation | 10% |
| Case Study analysis | 30% |
| Group Project: Innovation Industry | 30% |
| Final Exam | 30% |

The instructor will calculate your course grades using the CEA Grading Scale shown below. As a CEA student, you should understand that credit transfer decisions—including earned grades for courses taken abroad—are ultimately made by your home institution.

| CEA GRADING SCALE | | | |
|-------------------|-----------------|------------------|----------------|
| Letter Grade | Numerical Grade | Percentage Range | Quality Points |
| A+ | 9.70 – 10.0 | 97.0 – 100% | 4.00 |
| A | 9.40 – 9.69 | 94.0 – 96.9% | 4.00 |
| A- | 9.00 – 9.39 | 90.0 – 93.9% | 3.70 |
| B+ | 8.70 – 8.99 | 87.0 – 89.9% | 3.30 |
| B | 8.40 – 8.69 | 84.0 – 86.9% | 3.00 |
| B- | 8.00 – 8.39 | 80.0 – 83.9% | 2.70 |
| C+ | 7.70 – 7.99 | 77.0 – 79.9% | 2.30 |
| C | 7.40 – 7.69 | 74.0 – 76.9% | 2.00 |
| C- | 7.00 – 7.39 | 70.0 – 73.9% | 1.70 |
| D | 6.00 – 6.99 | 60.0 – 69.9% | 1.00 |
| F | 0.00 – 5.99 | 0.00 – 59.9% | 0.00 |
| W | Withdrawal | N/A | 0.00 |
| INC | Incomplete | N/A | 0.00 |

ASSESSMENT OVERVIEW

This section provides a brief description of each form of assessment listed above. Your course instructor will provide further details and instructions during class time.

Class Participation (10%): Student participation is mandatory for all courses taken at a CEA Study Center. The instructor will use the rubric below when determining your participation grade. All students should understand that attendance and punctuality are expected and will not count positively toward the participation grade.

| CLASS PARTICIPATION GRADING RUBRIC | |
|---|----------------------------|
| Student Participation Level | Grade |
| You make major & original contributions that spark discussion, offering critical comments clearly based on readings, research, & theoretical course topics. | A+ (10.0 – 9.70) |

| | |
|---|-------------------------------|
| You make significant contributions that demonstrate insight as well as knowledge of required readings & independent research. | A/A- (9.69 – 9.00) |
| You participate voluntarily and make useful contributions that are usually based upon some reflection and familiarity with required readings. | B+/B (8.99 – 8.40) |
| You make voluntary but infrequent comments that generally reiterate the basic points of the required readings. | B-/C+ (8.39 – 7.70) |
| You make limited comments only when prompted and do not initiate debate or show a clear awareness of the importance of the readings. | C/C- (7.69 – 7.00) |
| You very rarely make comments and resist engagement with the subject. You are not prepared for class and/or discussion of course readings. | D (6.99 – 6.00) |
| You make irrelevant and tangential comments disruptive to class discussion. You are consistently unprepared for class and/or discussion of the course readings. | F (5.99 – 0.00) |

Case Study Analysis (30%): An industry standard case study, for example, “What 3 Words” <https://what3words.com/about-us/> will be distributed and discussed in class. It will focus on how an international company has managed and utilized a technological innovation. Your task, in the form of an individual presentation (20%) and support paper (10%) will be to address how the innovation could be applied in the host country, both domestically and industrially.

Group Project 30% (10% Presentation + 20% Written Strategy Document):

- Oral: Using the innovations displayed in the “Shift Happens (2018) video, watched in class, as your starting point, you will discuss a range of industries: Pharma, Agri-food, Tourism, Logistics, Tech, Software and Manufacture. You must select one and then, as a team, analyze the impacts, positive and negative, of Technological Innovation on that industry and its main players and consumer groups and present your findings to the class and professor.
- Written: Following the presentation, your professor will ask you to formulate your oral proposals into an industry standard report that addresses the issues raised by the feedback you receive from the professor and the class.

Final Exam (30%): The final cumulative exam will cover all material studied during the course, including: theory, worksheets, case studies, guest speakers and visits, and final projects. It is designed to test your individual knowledge and application thereof to corporate and civic scenarios.

EXPERIENTIAL LEARNING ACTIVITIES (AICAP)

CEA courses are designed to include a variety of experiential learning activities that will take you out of the classroom and allow you to explore your local, host city. These activities may include field studies, guest lectures and/or activities offered through our Academically Integrated Cultural Activities Program (AICAP). The following experiential learning activities are recommended for this course:

- **Field Study/Guest Speaker:** The course will include a guest speaker session as well as a field study visit to a large retail distribution center. You will also participate in an interactive city walking tour.

REQUIRED READINGS

Reading assignments for this course will come from the required text(s) and/or the selected reading(s) listed below.

All required readings—whether assigned from the text or assigned as a selected reading—must be completed according to the due date assigned by the course instructor.

- I. REQUIRED TEXT(S):** You may purchase the required text(s) prior to departure or upon program arrival. The required text(s) are listed below:

Joe Tidd and John Bessant, (2018). “Managing Innovation”, 6th Ed., John Wiley & Sons, Ltd, West Sussex, England.

- II. SELECTED READING(S):** The selected readings for this course are listed below. You will not need to purchase these readings; the instructor will provide these selected readings to you in class (either in paper or electronic format).

Clayton M. Christensen, (2000). “The Innovators Dilemma”: When New Technologies Causes Great Firms to Fail: Harvard business school press, Boston, MA, USA.

Nathan Furr and Jeff Dyer, (2014) “The Innovators Method”, Harvard Business School Publishing. Boston. USA.

Steven Johnson, (2010) “Where good ideas come from”. The natural History of Innovation. Riverhead Books Group. New York, USA.

Teresa Amabile, (1996) “Creativity in Context: Update To The Social Psychology Of Creativity” Routledge; USA.

Everett M. Roger, (1995) “Diffusion of Innovation” The Free Press, New York, USA.

Tim Harford, (2011) “Adapt” Little Brown, London, UK.

Geoffrey A Moore, (2014) “Crossing the Chasm”, 3rd Edition: Marketing and Selling Disruptive Products to Mainstream Customers. Collins Business Essentials. New York, USA.

David Rowan, (2019) “Non-Bullshit Innovation” Bantam Press, London. UK.

Alexander Osterwalder, (2010) “Business model Generation”, John Wiley & Sons Inc, Hoboken, New Jersey. USA

Alex Osterwalder, (2014) “Value Proposition Design”, John Wiley & Sons Inc, New Jersey. USA.

Nikil Saval, (2015) “Cubed: A Secret History of the Workplace”. Anchor Books. New York. USA.

Michaele A Roberto, (2019) “Unlocking Creativity”: How to Solve Any Problem and Make the Best Decisions by Shifting Creative Mindsets. John Wiley & Sons. USA

ADDITIONAL RESOURCES

In order to ensure your success abroad, CEA has provided the academic resources listed below. In addition to these resources, each CEA Study Center provides students with a physical library and study areas for group work. The Academic Affairs Office at each CEA Study Center also compiles a bank of detailed information regarding libraries, documentation centers, research institutes, and archival materials located in the host city.

- **UNH Online Library:** As a CEA student, you will be given access to the online library of CEA’s School of Record, the University of New Haven (UNH). You can use this online library to access databases and additional resources while performing research abroad. You may access the UNH online library [here](#) or through your MyCEA Account. You must comply with UNH Policies regarding library usage.
- **CEA Classroom – Moodle:** CEA instructors use Moodle, an interactive virtual learning environment. This web-based platform provides you with constant and direct access to the course syllabus, daily schedule of class lectures and assignments, non-textbook required readings, and additional resources. Moodle includes the normal array of forums, up-loadable and downloadable databases, wikis, and related academic support designed for helping you achieve the learning objectives listed in this syllabus.

During the first week of class, CEA academic staff and/or faculty will help you navigate through the many functions and resources Moodle provides. While you may print a hard copy version of the syllabus, you should always check Moodle for the most up-to-date information regarding this course. The instructor will use Moodle to make announcements and updates to the course and/or syllabus. It is your responsibility to ensure that you have access to all Moodle materials and that you monitor Moodle on a daily basis in case there are any changes made to course assignments or scheduling.

To access Moodle: Please log-in to your MyCEA account using your normal username and password. Click on the “While You’re Abroad Tab” and make sure you are under the “Academics” sub-menu. There you will see a link above your schedule that says “View Online Courses” select this link to be taken to your Moodle environment.

COURSE CALENDAR
Supply Chain Management

| SESSION | TOPICS | ACTIVITY | READINGS & ASSIGNMENTS |
|---------|---|--|---|
| 1 | <p style="text-align: center;">Course Introduction: Review syllabus, classroom policies</p> <p style="text-align: center;">Analysis of Defining Concepts: Introduction: History of innovation. Innovation what it is and why it matters Four dimensions of innovation space</p> <p style="text-align: center;">Innovation as a Core Business Process A process view of innovation, exploring different aspect of innovation Can we manage innovation? What do we know about successful innovation management? Measuring innovation success</p> | <p>Course Overview</p> <p>Lecture & Discussion</p> | <p>Locate and prepare course reading materials</p> <p>Readings: Chapter 1: Managing Innovation by Joe Tidd and John Bessant 6th Ed.</p> <p>Readings: Chapter 2: Managing Innovation by Joe Tidd and John Bessant 6th Ed.</p> <p>Additional Reading:</p> <p>Article “The Discipline of Innovation” by Peter Drucker (HBR).</p> <p>Nathan Furr and Jeff Dyer, (2014) “The Innovators Method”, Harvard Business School Publishing. Boston. USA.</p> |
| 2 | <p style="text-align: center;">Context and Sources of Innovation. From Where Good Ideas Come From? Knowledge push Need pull Users as innovators A framework for looking at innovation source How an idea is different from an opportunity</p> <p style="text-align: center;">Building the Innovative Organization: Organization structure Key individuals</p> | <p>Lecture & Discussion</p> | <p>Readings: Chapter 3: Managing Innovation by Joe Tidd and John Bessant 6th Ed.</p> <p>Additional Reading:</p> <p>Steven Johnson, (2010) “Where good ideas come from”. The natural History of Innovation. Riverhead Books Group. New York, USA.</p> <p>Teresa Amabile, (1996) “Creativity In Context: Update To The Social Psychology Of Creativity” Routledge; USA.</p> |

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|---|---|---|---|
| | <p>Effective Team Working Creative climate for innovation High Involvement in innovation</p> | | <p>“Cubed: A Secret History of the Workplace”. Anchor Books. New York. USA.</p> |
| 3 | <p>Developing an Innovation Strategy: Rationalist or Incrementalistic strategy for Innovation The dynamic capabilities of the firm Technological trajectories Developing firm specific competencies Globalization of Innovation</p> <p>Innovation Networks: No man is an island The spaghetti model of innovation Innovation networks Networks at the start-up Learning networks Managing innovation networks</p> | <p>Lecture, Discussion & Practical exercise</p> | <p>Readings: Chapter 4: Managing Innovation by Joe Tidd and John Bessant 6th Ed.</p> <p>Reading: Chapter 6: Managing Innovation by Joe Tidd and John Bessant 6th Ed.</p> <p>Additional Reading: The Innovator’s DNA: Jeffrey H. Dyer Hal Gregersen & Clayton M. Christensen. HBR. December 2009.</p> |
| 4 | <p>Decision Making Under Uncertainty: Meeting the challenges of uncertainty The funnel of Uncertainty Decision making for incremental innovation Building coalitions Building the business case Spreading the risk</p> <p>Guest Speaker</p> | <p>Lecture & Discussion & Guest Speaker Q & A</p> | <p>Reading: Chapter 7: Managing Innovation by Joe Tidd and John Bessant 6th Ed</p> <p>Prepare Questions for Q & A</p> <p>Topic: Innovation and Implementation of Innovation</p> |
| 5 | <p>Building the Innovation Case: Developing the business plan Forecasting innovation Estimating the adoption of innovation</p> | <p>Lecture & Discussion</p> | <p>Reading: Chapter 8: Managing Innovation by Joe Tidd and John Bessant 6th Ed</p> <p>Additional Reading:</p> |

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| | Anticipating the resources | | Everett M. Roger, (1995) “Diffusion of Innovation” The Free Press, New York, USA. |
| 6 | <p>Creating New Products and Services: Process for new product development Influence of technology and markets on commercialization Differentiating products Building architectural products Commercializing technological products Implementing complex products Service innovation</p> | Lecture & Discussion | <p>Reading: Chapter 9: Managing Innovation by Joe Tidd and John Bessant 6th Ed</p> <p>Additional Reading:</p> <p>Alex Osterwalder, (2014) “Value Proposition Design”, John Wiley & Sons Inc, New Jersey. USA.</p> <p>Geoffrey A Moore, (2014) “Crossing the Chasm”, 3rd Edition: Marketing and Selling Disruptive Products to Mainstream Customers. Collins Business Essentials. New York, USA.</p> |
| 7 | Field Study: | Field Study: Facility Tour & Q & A | Visit: To an Innovative business Ice cream Lab 320, South William St. Dublin 2 |
| 8 | <p>Exploiting New Ventures: What is a venture? Internal corporate venture Joint venture and corporate alliances Spin-outs and new ventures</p> | Lecture & Discussion | <p>Reading: Chapter 10: Managing Innovation by Joe Tidd and John Bessant 6th Ed</p> <p>Additional Reading:</p> <p>Alex Osterwalder, (2014) “Business Generation Design”, John Wiley & Sons Inc, New Jersey. USA.</p> |
| 9 | <p>30% Mid Term Case Study (What3Words) Analysis Presentations Prepare PowerPoints/Prezi & support notes + support paper</p> | | |
| 10 | <p>Capturing the Benefit of Innovations: Creating value through innovation Innovation and firm performance</p> | Lecture & Discussion | Reading: Chapter 11: Managing Innovation by Joe Tidd and John Bessant 6 th Ed |

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| | Exploiting knowledge and intellectual property Broader and economic and social benefits | | |
| 11 | Capturing Learning from Innovation: What have we learned about managing innovation? How can we continue to learn to manage innovation? Learning to manage innovation Tools to help capture learning Innovation auditing Developing innovation management capabilities | Case Study & Discussion | Reading: Chapter 12: Managing Innovation by Joe Tidd and John Bessant 6 th Ed Additional Reading: A growing mindset Case Study by Microsoft |
| 12 | Field Study: Retailing Walking Tour | Field Study: Walk/Meet with Local Businesses | |
| 13 | Group Project Presentations Prepare PowerPoints/Prezi & support notes | | |
| 14 | Developing business plans and pitching opportunities: Developing and Using Business Plans Pitching a Business Plan Identifying resources for Financing the new venture Developing cash flow and financial projections for the new venture | Lecture, Activity & Discussion | Activity: Reviewing, evaluating and developing business plans from examples. Developing financial metrics and cash flow template Provide Study guide for next session – Test & practice quiz |
| 15 | Content review, Exam techniques practice quiz FINAL EXAM (1.5HRS) | Activity Base & Discussion | Submission Deadline: Group Project Presentation follow-up report |

SECTION III: CEA Academic Policies

The policies listed in this section outline general expectations for CEA students. You should carefully review these policies to ensure success in your courses and during your time abroad. Furthermore, as a participant in the CEA program, you are expected to review and understand all CEA Student Policies, including the academic policies outlined on our website. CEA reserves the right to change, update, revise, or amend existing policies and/or procedures at any time. For the most up to date policies, please review the policies on our website.

Class & Instructor Policies can be found [here](#)

General Academic Policies can be found [here](#)