Managing Technological Innovation

SECTION I: Course Overview

Course Code: MGMT343DUB
Subject Area(s): Management
Prerequisites: None
Language of Instruction: English
Total Contact Hours: 45
Recommended Credits: 3

COURSE DESCRIPTION

The history of technological innovation and the developments in the science of computing have been nothing short of remarkable; it has affected our lives, the effectiveness of organizations, the profitability of industries, the well-being of societies, and the prosperity of nations. However, many established businesses and industries have struggled to fully commercialize their breakthrough innovations and are therefore not maximizing their true value. This is in part due to a lack of understanding of the processes involved in the emerging discipline of technological innovation management.

Statistically, modern organizations that consistently succeed in managing innovation outperform their peers in terms 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 crucial to the business and must be managed as such.

This course examines technological innovation from a management perspective, specifically in the context of contemporary organizations. Students will be introduced to the strategic concepts, models of innovation, technology lifecycles, data management techniques, and challenges that large companies are regularly confronted with in managing technological innovations. The course will provide industry examples of large corporations that have overcome these challenges with careful and effective management as well as illustrate how some of the best practices from the startup world are being applied in large companies operating at the frontier of innovation.

LEARNING OBJECTIVES

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

- Analyze the concepts and models associated with the management of technological innovation within the context of modern organizations.

- Evaluate the different forms of innovation, their implementation, and the role of learning environments.
- Identify the tensions and relationships that emerge as an innovation grows from its conception to its market commercialization.
- Articulate the key environmental factors and situations that are conducive to creativity and innovation.
- Appraise the dynamic nature of technology and innovative environments with relation to future trends in national and international organizations.

SECTION II: Instructor & Course Details

INSTRUCTOR DETAILS

Name: TBA
Contact Information: TBA
Term: SUMMER

ATTENDANCE POLICY

This class will meet four times weekly for 150 minutes each session. 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		
Courses Meeting X day(s) Per Week	**Allowed Absence(s)**	**Automatic Failing Grade at Xth absence**
Courses meeting **4** day(s) per week	**1** Absence	**4th** 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	**1st**	**2nd**	**3rd**	**4th**
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 (20% Presentation + 10% Support Paper): An industry standard case study 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: Innovation Industry (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. Further instructions and resources for this assignment will be provided during 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). Please check the Forms of Assessment section to find out if AICAP activities are related to any specific form of assessment. 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:

Tidd, Joe, 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).

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

Drucker, Peter, (2002). "The Discipine of Innovation", Harvard Business Review, Harvard business school press, Boston, MA, USA.

Dryer, Jeffery H., Gregersen, Hal, & Christensen, Clayton M., (2009) "The Innovator's DNA" Harvard business school press, Boston, MA, USA.

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

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

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

Osterwalder, Alexander, (2014) "Business Generation Design", John Wiley & Sons Inc, New Jersey, USA.

Osterwalder, Alexander, et al. (2014). "Value Proposition Design", John Wiley & Sons Inc, New Jersey, USA.

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

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

RECOMMENDED READINGS

The recommended reading(s) and/or text(s) for this course are below. These recommended readings are not mandatory, but they will assist you with research and understanding course content.

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

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

Osterwalder, Alexander, and Yves Pigneur, (2010). "Business model Generation", John Wiley & Sons Inc, Hoboken, New Jersey, USA.

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

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

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.

- **CEAClassroom – 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 *Managing Technological Innovation*			
SESSION	**TOPICS**	**ACTIVITY**	**READINGS & ASSIGNMENTS**
I: MANAGING INNOVATION			
1	**Course Introduction:** Review Syllabus, Classroom Policies **Analysis of Defining Concepts:** History of innovation, Innovation what it is and why it matters Four dimensions of innovation space **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	Course Overview Lecture & Discussion	Locate and prepare course reading materials **Readings:** Chapter 1 &2: Tidd and Bessant *Managing Innovation* **Additional Reading:** Article "The Discipline of Innovation" by Peter Drucker (HBR). Furr, Nathan, and Jeff Dyer, (2014) "The Innovators Method", Harvard Business School Publishing. Boston. USA.
II: CONTEXT OF INNOVATION			
2	**Context & 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 **Building the Innovative Organization:** Organization structure Key individuals Effective team working Creative climate for innovation High involvement in innovation	Lecture & Discussion	**Readings:** Chapter 3: Tidd and Bessant *Managing Innovation* **Additional Reading:** Johnson, Steven, (2010) "Where good ideas come from". Amabile, Teresa, (1996) "Creativity In Context: Update To The Social Psychology Of Creativity" Saval, Nikil, (2015) "Cubed: A Secret History of the Workplace"

The instructor reserves the right to make changes or modifications to this syllabus as needed

III: SEARCH FOR INNOVATION			
3	**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 **Innovation Networks:** No man is an island The spaghetti model of innovation Innovation networks Networks at the start-up Learning networks Managing innovation networks	Lecture, Discussion, & Practical exercise	**Readings:** Chapter 4 &6: Tidd and Bessant *Managing Innovation* **Additional Reading:** Dryer, Jeffery H., Gregersen, Hal, & Christensen, Clayton M., (December 2009) "The Innovator's DNA"
4	**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 **Guest Speaker**	Lecture & Discussion Guest Speaker Q & A	**Reading:** Chapter 7: Tidd and Bessant *Managing Innovation* Prepare Questions for Q & A **Topic:** Innovation and Implementation of Innovation
IV: SELECTION OF INNOVATION			
5	**Building the Innovation Case:** Developing the business plan Forecasting innovation Estimating the adoption of innovation Anticipating the resources	Lecture & Discussion	**Reading:** Chapter 8: Tidd and Bessant *Managing Innovation* **Additional Reading:** Roger, Everett M., (1995) "Diffusion of Innovation"
V: IMPLEMENTING INNOVATION			

6	**Creating New Products & 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	Lecture & Discussion	**Reading:** Chapter 9: Tidd and Bessant *Managing Innovation* **Additional Reading:** Osterwalder, Alexander, et al. (2014) "Value Proposition Design" Moore, Geoffrey A., (2014) "Crossing the Chasm"
7	**Field Study:** Innovative Businesses	Field Study: Facility Tour Q & A	--
8	**Exploiting New Ventures:** What is a venture? Internal corporate venture Joint venture and corporate alliances Spin-outs and new ventures	Lecture & Discussion	**Reading:** Chapter 10: Tidd and Bessant *Managing Innovation* **Additional Reading:** Osterwalder, Alexander, (2014) "Business Generation Design"
9	**Midterm Case Study Analysis Presentations** Prepare PowerPoints/Presi & support notes + support paper		
VI: LEARNING & CAPTURING INNOVATION			
10	**Capturing the Benefit of Innovations:** Creating value through innovation Innovation and firm performance Exploiting knowledge and intellectual property Broader and economic and social benefits	Lecture & Discussion	**Reading:** Chapter 11: Tidd and Bessant *Managing Innovation*
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: Tidd and Bessant *Managing Innovation* **Additional Reading:** A growing mindset Case Study by Microsoft
12	**Field Study:** Innovation walking tour	**Field Study**: Walk/Meet with Local Businesses	--

13	**Group Project Presentations** Prepare PowerPoints/Presi & support notes		
14	**Developing Business Plans & 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 new ventures	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	**FINAL EXAM** ***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