MBA 730-001
Management of Technology and Innovation Processes
Fall 2013

Syllabus

Course Instructor: Professor Cheryl Druehl
Office: Enterprise Hall 152
Telephone: Office: 703-993-9760
Office Hours: Before class and by appointment
Email: cdruehl@gmu.edu

Course Meeting Times: Tuesday 7:20-10:00 pm
Fairfax Robinson Hall B113

Course Materials:
For all books, ebooks, rental, used or new are fine.
1) Book – buy online or I made an ebook (only chapters on syllabus) at McGraw-Hill ebooks:
   • Note that this is from the UK, make sure you purchase from a US seller. Feel free to buy used.
   • Amazon link: http://www.amazon.com/EXPLORING-INNOVATION-David-Smith/dp/0077121236
     Search by ISBN 9781121974142 or by Druehl
   • Amazon link: http://www.amazon.com/Innovation-Tournaments-Selecting-Exceptional-Opportunities/dp/1422152227/ref=sr_1_1?ie=UTF8&qid=1376540089&sr=1-1&keywords=innovation+tournaments
3) Course Reader with cases. Available at Harvard Business School Link: https://cb.hbsp.harvard.edu/cbmp/access/20459303
4) Course Simulation available at Harvard Business School Link: https://cb.hbsp.harvard.edu/cbmp/access/20457410
5) Articles from library

**Course Web Page:** On Blackboard (BB).

**Course Description:**
The aim of this course is to help students develop a strong conceptual foundation for managing technological innovation. It introduces concepts and frameworks for analyzing how firms can create, commercialize and capture value from products and services. We cover the formulation of innovation strategies, the process of developing new products and services, and how to create and manage an innovative organization to drive revenue growth. We discuss traditional internal R&D, as well as the concepts of open innovation and innovation tournaments as ways to create and select new opportunities for innovation.

**Program Learning Goals:**
1. **Teaming & Leading:** Our graduates will demonstrate the team leadership and interpersonal skills needed to form, lead, and work effectively on diverse organizational teams.
2. **Analytical Decision Making:** Our students will demonstrate the ability to analyze uncertain complex management situations using appropriate tools, techniques and information systems for decision-making.
3. **Knowledge of Functional Business Disciplines:** Our graduates will demonstrate the ability to integrate knowledge from all functional areas of business into a meaningful firm-level perspective.
4. **Global Understanding:** Our graduates will demonstrate a perspective on how businesses operate in the global environment.
5. **Communication Skills:** Our graduates will demonstrate written, oral and presentations skills necessary to explain problems and solutions effectively and persuasively.
6. **Ethics and Social Responsibility:** Our graduates will have a sense of professional and social responsibility in the conduct of managerial affairs.

**Specific Course Objectives:**
Students should understand and apply concepts to address the following questions:
- Why are corporations so concerned with innovation?
- How do countries and corporations foster innovation? Specifically, what is the role of country, university and corporate R&D, what innovation strategies are commonly employed, and how are innovations classified? When is open innovation applicable?
- How do we take ideas or technologies and end up with at least one successful product/service?
- How do we forecast new and uncertain technologies?
- What will the future bring for hot topics within innovation and technology such as green/sustainable design?

**Prerequisites:**
Admission to MBA program.
It is assumed that each student is familiar with EXCEL.
**Special Needs:**
Any student with special needs should bring them to the instructor’s attention no later than the second week of class. For students with any disabilities, please also contact the Office of Disability Services (ODS) at 703-993-2474. All academic accommodations must be arranged through the ODS. For more information, please visit ODS’s home page: [http://www.gmu.edu/student/drc/index.html](http://www.gmu.edu/student/drc/index.html)

**Academic Integrity**
George Mason University shares in the tradition of an honor system that has existed in Virginia since 1842. The Honor Code is an integral part of university life. On the application for admission, students sign a statement agreeing to conform to and uphold the Honor Code. Students are responsible, therefore, for understanding the provisions of the code. In the spirit of the code, a student's word is a declaration of good faith acceptable as truth in all academic matters. Cheating and attempted cheating, plagiarism, lying, and stealing of academic work and related materials constitute Honor Code violations. To maintain an academic community according to these standards, students and faculty must report all alleged violations of the Honor Code to the Honor Committee. Any student who has knowledge of, but does not report, an Honor Code violation may be accused of lying under the Honor Code. All students are expected to adhere to this code. All acts of academic dishonesty will be dealt with in accordance with the provisions of this code. For more information on the University’s Honor Code, please visit [http://honorcode.gmu.edu/](http://honorcode.gmu.edu/).

For practical purposes, the meaning of the code for this class is:
- Cheating on exams is not allowed.
- Case, project, and simulations comprise original ideas from the team members. No use of Internet or previous semester(s) papers/presentations.

**Safe Assign:**
In order to develop student writing skills, and teach students more about plagiarism, SafeAssign will be used in this class. Students are expected to submit their assignments to SafeAssign prior to submitting their assignments to the professor.

**Attendance:**
It is expected that each student be prepared for class including having prepared assigned material. In addition, it is expected that each student be in attendance at each class session. Missing classes and tardiness will negatively affect your class participation grade. Let the instructor and your case study teammates know in advance, should you have to miss a class.

**Class Procedure:**
The class can be described as a mix of lectures, cases, and games. Students are encouraged to discuss their own work experience when relevant to the class material, even during lectures. Please bring and use your name tents for each class. Please read the assigned articles and chapters before class. In addition, there will be several case studies during the semester for which you should come fully prepared. See the section on case studies. This course includes both quantitative and qualitative content.

**Examinations:**
During the semester, there will be one take home final.
**Project:**
A book report project, involving a short written report and a short oral report, will be assigned. Details will be handed out in class.

**Questions:**
All students are encouraged to bring questions, concerns and comments to my attention as soon as they arise. *Please do not wait!* Once final grades are submitted, changes to grades will only be made to correct errors in tallying scores. In addition, there is a feedback section on BB under Discussion Board that allows anonymous comments to encourage your feedback.

**Case Studies:**
Case studies provide excellent hands-on opportunities for students to apply skills learned in this course, as well as others from your MBA. For each case you should read it, attempt the analysis and come prepared with your recommendation. I may cold call students to ask them to present solutions. In preparing a case, students may neither use notes from any sources (such as the Internet and previous classes) nor obtain help from anyone other than your classmates.

Cases can be found the reader from Harvard Business Publishing. There will be two individual case write-ups over the semester. You may choose from the following cases:
- Amtran Case
- In-Q-Tel Case
- Kelly Slater’s Pro Surfer
- Herman Miller

Signups will be posted on BB, with a limit on how many students per case. Please review the cases, choose two, and sign up by 9/3. Your analysis is due through SafeAssign and the BB assignment feature before class and is worth 100 points. A report should include (but is not limited to) sections such as introduction, problem statement, case analysis, recommendations, and implementation issues. Questions to guide case preparation will be provided on BB two weeks before each case class session. A good report would avoid extensive reiteration of case content and would thoroughly address the case issues, providing concrete recommendations. A case report may not be longer than 6 pages, 1½ spaced, 12-point font (including exhibits).

**Simulation:**
The simulation will be done in teams. Please group yourselves into teams of size 2 by the third week of class. Please email me your team list so I can create groups on BB and possibly assign others to your group if necessary. Every team member should contribute equally to its preparations, analysis, and simulation. Successful teamwork needs intensive communication and close coordination among team members. Respect your teammates at all times and be prepared for every group meeting. An opportunity for peer review of team members will be available at the end of the semester and will be taken seriously.

**Class Participation:**
Class Participation is taken seriously. I expect all class members to come to class, be prepared, and to discuss the cases or material assigned. Class participation is a large part of your grade so please come to class prepared and contribute.
**Virtual Class Participation:**
There will be an online portion of class participation as well. You are required to post at least 4 articles over the semester and comment (seriously and in a useful manner) on at least 4 more. Posting should include a 1-2 paragraph summary of the article, another paragraph on why it’s interesting and/or useful and the link/source information to the article. The idea is to get a lot of exposure to innovation and technology management without having to read every news source personally! The first article must be posted by 10/22 and the second and all comments by 11/26 to receive credit.

**Grading:**
The course grade will be out of 1000 points. The breakdown is as follows. Your total point score out of 1000 determines your final letter grade. There will be no extra credit.

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<thead>
<tr>
<th>Component</th>
<th>Points</th>
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<tr>
<td>Group Simulation</td>
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<td>Class Participation</td>
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<td>Online Participation</td>
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<td>Individual Case Analyses (2, 100 each)</td>
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<td>Final</td>
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<td>Book Report</td>
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<td><strong>Total:</strong></td>
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**GRADING SCALE:** A = 90–100; B = 80–89.x; C = 70–79.x; D = 50–69.x; F = 0–49.x. (+/- system used)
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<tr>
<th>CLASS</th>
<th>DAY</th>
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<tr>
<td>1</td>
<td>T</td>
<td>8/27</td>
<td>Introduction, Innovation Theory, Innovative Organizations</td>
<td>Resume and picture via BB</td>
<td>Smith Chapters 1,2</td>
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<td>Case signups start</td>
<td><strong>“Fabric of Creativity”</strong></td>
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<td><strong>“3M’s Seven Pillars of Innovation”</strong></td>
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<td>9/3</td>
<td>Innovative Organizations</td>
<td>Case signups end</td>
<td>Google (on BB)</td>
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<td>Microsoft articles (on BB)</td>
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<td>Apple Articles (on BB)</td>
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<td>“Skunkworks”</td>
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<td>“Clearing the path to innovation”</td>
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<td>Schilling Chapter 2</td>
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<td>3</td>
<td>T</td>
<td>9/10</td>
<td>Technology Management, Architecture, Transitions, Disruption</td>
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<td>Smith Chapters 2-4</td>
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<td>Am Tran Case</td>
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<td>Note on Competency-Destroying Technology Transitions</td>
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<td>*“When is a Disruptive Innovation Disruptive”</td>
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<td>9/17</td>
<td>Sources of Innovation</td>
<td>Innovation Tournaments Book, Introduction, Chapters 1-3</td>
<td>Innovation Tournaments</td>
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<td>User Led Innovation, Innovation Tournaments, Open innovation, crowd sourcing</td>
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<td>Chapter 5</td>
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<td>*“Bringing Open Innovation to Services”</td>
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<td>9/24</td>
<td>Sandy Lerner, co-founder of Cisco, sustainability talk 6-8, Mason Inn</td>
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<td><strong>“The Biosphere Rules”</strong></td>
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<td>Meet in bar/lobby after Sustainability and Innovation</td>
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<td>Herman Miller Case</td>
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<td>Challenge.gov</td>
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<td>Sources of innovation</td>
<td>InQTel Case</td>
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<td>Open innovation Corporate venturing</td>
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<td>“The Bake-off”</td>
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<td>MONDAY CLASSES MEET ON TUESDAY</td>
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<td><strong>9</strong> T 10/22</td>
<td>The NPD Process, IDEO Video Brainstorming Concept Generation, exercise</td>
<td>Smith Chapter 6, Smith Chapter 11 *“Seven steps to better brainstorming” *<em>“Sparking creativity in teams</em></td>
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<td><strong>10</strong> T 10/29</td>
<td>NPD Concept Testing and Rapid Prototyping Screening and Selection Stage/Gate Process Kelly Slater’s Pro Surfer case</td>
<td>Innovation Tournaments Chapter 4 Kelly Slater’s Pro Surfer *“Affordable 3D” **“The secret to true service innovation” Prototyping a quick introduction</td>
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<td><strong>11</strong> T 11/5</td>
<td>Innovation Strategy/Portfolio Management</td>
<td>Innovation Tournaments Book, Chapters 5,6,7,8,9 (skim 6) *“Creating Bold Innovation in Mature Markets”</td>
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<td><strong>12</strong> T 11/12</td>
<td>BBB Simulation Preparation National innovation systems</td>
<td>BBB prereading Smith Chapters 12-14</td>
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<td><strong>13</strong> T 11/19</td>
<td>Simulation</td>
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<td><strong>14</strong> T 11/26</td>
<td>Forecasting Technology, Bass Model, Moore’s Law Potential Guest Speaker</td>
<td>**“Evolution of Technological Generations. The Law of Capture” Forecasting the adoption of a new product</td>
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<td><strong>15</strong> T 12/3</td>
<td>Oral book reports Wrap up</td>
<td><strong>Written book report</strong></td>
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<td>T 12/10</td>
<td>Take home final exam</td>
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In case pack:
- Amtran Case
- Note on Competency-Destroying Technology Transitions
- InQTel Case
- Kelly Slater’s Pro Surfer
- Forecasting the adoption of a new product
- Herman Miller

* Obtain articles from the library web site or link.
  - Miller, P., T. Wedell-Wedellsborg. 2013. “Clearing the path to innovation.” *IESE Insight*, First
Quarter.


Other books in which you may be interested:
1. *New Products Mgmt* by Merle Crawford and Anthony DiBenedetto
2. *The Sources of Innovation* by Eric von Hippel
3. *The Innovator’s Solution* by Clayton Christensen and Michael Raynor
4. *Product Design and Development* by Karl Ulrich and Steve Eppinger
5. *Open Innovation* by Henry Chesborough
6. *Design Rules* by Carliss Baldwin and Kim B. Clark (available online at GMU library)
7. *Closing the Innovation Gap*, by Judy Estrin
8. *Clock Speed* by Charles H. Fine
9. *The Design of Business* by Roger L. Martin