

**Course Description**

This course examines the technical and managerial challenges presented by emerging and evolving technologies. Particular consideration is given to the forces affecting the nature and rate of technological innovation and the managerial options available to both established and entrepreneurial organizations.

Time: Tuesday/Thursday 1:30-3:00 p.m.

Place: JMHH G55

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**General Course Organization and Requirements**

This course will be taught in seminar fashion with substantial class discussion. Thorough preparation and active class participation and attendance are essential. Assigned and supplementary readings will be augmented by cases and occasional guest lectures. Students will prepare a variety of **written assignments**, including case analyses and two research papers dealing with selected technologies, firms and industries. Research topics will be selected by students with instructor approval. The final course grade will be based on written assignments (40%), research papers and presentations (45%) and class attendance, participation and quizzes (15%).

**Course Materials**

Text: Strategic Management of Technological Innovation, Melissa A. Schilling, McGraw-Hill Irwin, © 2005. ISBN 0072942983

Bulk Pack (BP): Required readings and cases, Wharton Reprographics

Course Syllabus

1.	T	1/10	<b>TECHNOLOGY MANAGEMENT OVERVIEW</b> <u>Strategic Management of Technological Innovation</u> (Skim Preface, all chapters) This Way to the Future The Unexpected Science to Come Get Creative!	<b><u>PTA</u></b> Text Webcafe Webcafe Webcafe
2.	TH	1/12	<b>THE NATURE OF TECHNOLOGICAL INNOVATION</b> Introduction Innovation in Industry Emerging Technologies 2005	T: 1 BP: 1 BP: 2
3.	T	1/17	<b>THE STRATEGIC IMPACT OF TECHNOLOGICAL CHANGE</b> Timing of Entry Kodak and the Digital Revolution	T: 5 <b><u>BP: 3</u></b>
4.	TH	1/19	<b>EMERGING VS. ESTABLISHED TECHNOLOGIES</b> Types and Patterns of Innovation (Pgs. 35-41) Timex Corporation (A) and (B) Cases (373-080 and 9-376-102)	<b><u>AB #1</u></b> T: 3 BP: 4
5.	T	1/24	<b>INNOVATION PATTERNS AND TECHNOLOGY FORECASTING</b> Types and Patterns of Innovation (Pgs. 41-54) Darwin and the Demon Technology in Economy	<b><u>RP #1 Proposal</u></b> T: 3 BP: 5 BP: 6
6.	TH	1/26	<b>PERSPECTIVES ON EMERGING TECHNOLOGY</b>	Review AB #1
7.	T	1/31	<b>TECHNOLOGY ADOPTION FACTORS</b> <u>Guest Resource</u> : John Moran, Past President, Synthes Spine Solutions Synthes	<b><u>BP: 7</u></b>
8.	TH	2/2	<b>TECHNOLOGICAL INNOVATION AND STRATEGIC MANAGEMENT</b> Defining the Organization's Strategic Direction The Dynamics of Technology and Strategy Managing Technology as a Strategic Asset Building Breakthrough Businesses within Established Organizations Technology Leadership Can Pay Off	T: 6 BP: 8 BP: 9 BP: 10 BP: 11
9.	T	2/7	<b>TECHNOLOGY AND COMPETITIVE ADVANTAGE</b> Standards Battles and Design Dominance The Browser Battles -- Netscape vs. Microsoft	T: 4 BP: 12
10.	TH	2/9	<b>WINDOW ON TECHNOLOGICAL INNOVATION</b> <u>Guest Resource</u> : Dr. Graham Mitchell, formerly U.S. Assistant Secretary of Commerce for Technology Policy, U.S. Department of Commerce Office of Technology Policy report "Global Context of the U.S. Technology Policy"	Webcafe
11.	T	2/14	<b>INNOVATION SOURCES</b> Source of Innovation (Pgs 13-19) IDEO Product Development The Ten Faces of Innovation The Six Myths of Creativity Building an Innovation Factory	T: 2 BP: 13 BP: 14 BP: 15 BP: 16

12.	TH 2/16	<b>INNOVATION NETWORKS</b> Sources of Innovation (Pgs 20-29) The Era of Open Innovation R&D 2005	T: 2 BP: 17 BP: 18
13.	T 2/21	<b>EMERGING TECHNOLOGIES--PAST, PRESENT, FUTURE</b>	<b><u>RP #1</u></b>
14.	TH 2/23	<b>MANAGING TECHNOLOGICAL INNOVATION</b> EMI and the CT Scanner (B) Case, Background Note-The EMI CAT Scanner	<b><u>RP #2 Proposal</u></b> BP: 19
15.	T 2/28	<b>MANAGING INNOVATION</b> Choosing Innovation Projects Managing the New Product Development Process Managing Technological Change: A Box of Cigars for Brad Managing Real Options	T: 7 T: 11 BP: 21 BP: 22
16.	TH 3/2	<b>STRATEGIC CHOICES IN R&amp;D</b> Silicon Valley Specialists Case	<b><u>BP:20</u></b>

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**SPRING BREAK 3/3/06 - 3/13/06**

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17.	T 3/14	<b>EFFECTING CHANGE—TECHNOLOGY, STRATEGY, ORGANIZATION</b> Cisco Systems, Inc.: Acquisitions Integration for Manufacturing (A) Thinking of Buying a High-Tech Start-up? Read This First	BP: 24 BP: 25
18.	TH 3/16	<b>WINDOW ON TECHNOLOGICAL INNOVATION</b> <u>Guest Resource:</u> Terry Fadem, Director, Corporate Alliances University of Pennsylvania School of Medicine Consultant and Senior Fellow, Mack Center for Technological Innovation	
19.	T 3/21	<b>MANAGING EMERGING TECHNOLOGY</b> <u>Guest Resource:</u> Dr. William F. Hamilton Collaboration Strategies FMC Corporation Case A (skim for background) and B	T: 8 <b><u>BP:23</u></b>
20.	TH 3/23	<b>TECHNOLOGICAL ENTREPRENEURSHIP</b> Making Sense of Corporate Venture Capital	<b><u>AB #2</u></b> BP: 26
21.	T 3/28	<b>WINDOW ON TECHNOLOGICAL INNOVATION</b> <u>Guest Resource:</u> TBD Protecting Innovation (optional, skim)	T: 9
22.	TH 3/30	<b>PERSPECTIVES ON STRATEGIC TECHNOLOGY MANAGEMENT</b>	Review AB #2
23.	T 4/4	<b>TECHNOLOGICAL ENTREPRENEURSHIP</b> Organizing for Innovation Building a Better Skunkworks Hermes Systems	T :10 BP : 27 <b><u>BP:28</u></b>
24.	TH 4/6	<b>LESSONS FROM INNOVATIVE FIRMS</b> Masters of Innovation: How 3M Keeps Its New Products Coming How Google Grows...and Grows...and Grows If He's So Smart The Fabric of Creativity Innovation Scorecard	BP: 29 BP: 30 BP: 31 BP: 32 BP: 33

25. T 4/11 **WINDOW ON TECHNOLOGICAL INNOVATION**  
Guest Resource: Ken Glass (M&T, '82)
26. TH 4/13 **WINDOW ON TECHNOLOGICAL INNOVATION**  
Guest Resource: TBD
27. T 4/18 **COURSE WRAP-UP: KEY ISSUES & OPTIONS IN TECHNOLOGY  
MANAGEMENT** **CWU**
28. TH 4/20 **CLASS CANCELLED**
- XX. F 4/21 **FINAL TEAM PRESENTATIONS (Time TBD)**
- MO 4/24 **Papers due by 5:00pm** **RP #2**