



TECHNOLOGY & NEW PRODUCT DEVELOPMENT

ENTP 6375/BUAN 6375/MIS 6375/MKT 6375/OPRE 6394/ SYSM 6332

SPRING 2025

Class Meeting Thursday: 7:00 - 9:45 PM, JSOM 11.210 Modality: Traditional/Classroom Office Hours: Tue/Wed 1:30 – 3:30 PM Preferred: By appointment	Dr. Rajiv R. Shah SOM 4.204 Email: rajiv.shah@utdallas.edu Phone (UTD office): (972) 883-5904
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COURSE PRE-REQUISITES, CO-REQUISITES AND/OR OTHER RESTRICTIONS

Prerequisites: AIM 6201 and OB 6301 or consent of instructor. (3-0) Y

COURSE OBJECTIVES AND OBJECTIVES

Course Student Learning Outcomes: (1) Students will understand the role, importance and key principles of technology and new product development, including alignment of implementation with strategy and new product portfolio management, and (2) Students will learn decision-making associated with organizational, deployment and execution issues as they relate to technology and new product development. More specifically, this course addresses the strategic and organizational issues confronted by firms in technology-intensive environments. The course reflects six broad themes: (a) managing firms in technology-intensive industries; (b) forecasting key industry and technology trends; (c) linking technology and business strategies; (d) using technology as a source of competitive advantage; (e) organizing firms to achieve these goals; and (f) implementing new technologies in organizations. Students will analyze actual situations in organizations and summarize their findings and recommendations in an in-depth term paper. Case studies and class participation are stressed.

Upon successful completion of this course, students should have achieved the following objectives:

- Understand the process of technological innovation
- Identify technology opportunities that are best exploited through the formation of new firms
- Analyze the feasibility of technology opportunities
- Understand the internal management of the innovation process

REQUIRED COURSE MATERIALS

- **Schilling, Melissa A., *Strategic Management of Technological Innovation*. 2nd, 3rd, or 4th, Edition. ISBN 978-0-07-321058-2. McGraw-Hill Irwin.**
- **Case Pack:** Case Pack available at the link below at Harvard Business Publishing -

Case Pack Link: <https://hbsp.harvard.edu/import/1240804>

- **Other Suggested Course Material** -The Wall Street Journal, the Economist, Forbes, Fortune, Inc., Entrepreneur Magazines, and other readings recommended in class.

CASE DISCUSSION LEADER

Teams of about 3-4 students will be assigned (sign-up sheet) as the discussion leaders for each case. Each student, or a team of students, will be the discussion leader (s) (using MS-PPT) at least twice during the semester, and (a) will also provide a written 10 to 12 page case analysis (MS-DOC, in outline format, single-spaced, 10-11 size font, 1 inch margins) and (b) will also submit their slides (MS-PPT), before the class session, for these to be graded by the instructor. *Sample questions for the case will be provided by the instructor in a prior class session, although by no means should the case discussion be confined to these questions - students are expected to determine the key issues in the case.* The job of the discussion leader will be to highlight the key issues, key decisions and key points of interest that need to be discussed and debated in the case. The discussion leader(s) will be expected to be prepared to engage all of the students in the course in the examination of the case. In essence the discussion leaders will be leading a board meeting. Ideas that may be useful to consider in preparing might be assigning students to play roles, small group break out assignments, or assigned pro and con positions or devil's advocates. These assignments can be pre-arranged or setup at the time of the class.

ANNOTATED BIBLIOGRAPHY

At least twice during the semester (sign-up sheet) each student, or a team of students, will be asked to provide an annotated bibliography of articles [(a) no more than 1-page per article, MS-DOC, in outline format, single-spaced, 10-11 size font, 1 inch margins, as well as (b) MS-PPT which will be used in class discussion], to be graded by the instructor, on the topic of the session and lead a brief discussion of these articles using MS-PPT. The bibliography will include a minimum # of articles (determined at the beginning of the semester) on the topic to be covered in that particular session.



The articles should be drawn from The Harvard Business Review, California Management Review, Sloan Management Review, Strategic Management Journal, Journal of Business Venturing, McKinsey Quarterly, Administrative Science Quarterly, The Academy of Management Executive and Long-Range Planning. Other sources may be used but need to be cleared in advance with the professor. Articles can be found in Schilling's suggested further readings, by using The Business Source Premier Database and asking the instructor. The annotated bibliography will include a 1-page (single spaced) summary of each article that summarizes the major thesis of the article, major findings, empirical basis for the findings, and implications for the practice of management. The student should provide .pdf files of the articles, if available, and electronic copy of the annotated bibliography. These will be posted on eLearning and made available to all class members.

CLASS PARTICIPATION

Advance preparation and enthusiastic participation in class discussions is an important part of the learning experience in this course and each student will be evaluated on their preparation and contribution to the discussion. *Sample questions for the case will be provided by the instructor in a prior class session, although by no means should the case discussion be confined to these questions - students are expected to determine the key issues in the case.* If a student is absent from the course his participation and preparation cannot be evaluated and they will therefore receive a zero for that session.

FINAL EXAM

The Mid-term and Final Exams will be handed out about 2 weeks before they are due. The mid-term and final exams are individual assignments and students are expected to work independently. The exams will require essays, in outline format (12-15 pages including figures, single-spaced, 10-11 size font, 1-inch margins), integrating some of the topics from the course.

COURSE REQUIREMENTS & GRADING

Components of Course Grade are summarized in the table below:

Component:	% Total Grade
1. Case Discussion Leader (at least twice during the semester) Team Activity	20 % @
2. Annotated Bibliographies (at least twice during the semester) Team Activity	20 % @
3. Mid-term Exam (case analysis done individually) Individual Activity	20 %
4. Class Participation and contribution (all sessions) Individual Activity	15 %
5. Final Exam (case analysis done individually) Individual Activity	25 %
@ → Peer Evaluations will impact all team assignments Total	100 %

GRADE SCALE:	A - = 90 to 92%	A = 93% or greater	
	B - = 80 – 82%	B = 83 to 86%	B+ = 87 to 89%
	C - = 70 to 72%	C = 73 to 76%	C+ = 77 to 79%
	D - = 60 to 62%	D = 63 to 66%	D+ = 67 to 69%

The midterm and final examinations will be take-home long-answer tests or case analyses in which students must demonstrate (i) their understanding of the key frameworks, perspectives, concepts, ideas and tools introduced in the course, (ii) their ability to relate these frameworks, perspectives, concepts, ideas and tools to one another, and (iii) their ability to creatively apply these frameworks, perspectives, concepts, ideas and tools in differing contexts. **The mid-term will cover material from the first half of the course, while the final will cover the entire course.**

The individual/team case and annotated bibliography presentations are oral individual/group presentations. All cases are in the course pack, and specific cases are presented on the date indicated in the course outline below. **An outline to guide your case presentation will be provided in class or via e-mail.**

Team Projects - Team members will be collectively responsible for completing each of the team projects listed in this Syllabus. The grades earned on team projects will be assigned equally to each team member, subject to adjustment based on the Peer Evaluation. More information on Team Projects is provided on the eLearning Discussion page.



Peer Evaluation - A peer evaluation process will be utilized to adjust individual grades on all team assignments. The peer evaluation form (Guidelines are provided on the eLearning Discussion page) should be completed individually, sealed in an envelope and turned in with the final written assignment on or before the last day of class.

Written Assignments/Team Projects – **For instructions refer to separate attachment with that title**

Academic Integrity and Honor Code: Please refer to the Syllabi Addendum, posted separately

ATTENDANCE AND CLASS PARTICIPATION

- Attendance is required. Fifteen percent (15%) of your grade will be based on attendance and active participation in class discussions and exercises. Attendance and class participation will be tracked.
- Advance preparation and enthusiastic participation in class discussions is an important part of the learning experience gained by each of your peers in this course and will be evaluated.
- Each student is expected to have read all assigned materials prior to the start of class and be prepared to discuss the ideas, concepts and issues they raise. If it is determined that students are not prepared for class, pop quizzes may be instituted and factored into the individual's grade as part of class participation.
- Absence means you are taking away from the class dynamic and evolving culture of the class. From time to time, it may be necessary to miss a class due to illness or personal matters. Please inform instructor of these absences.
- A maximum of two unexcused absences will be allowed. Missing more than this total will mean the forfeiture of class participation grade.

LECTURE NOTES

- The MS PowerPoint slides used in lectures and case discussions and other course-related materials will be posted on eLearning (<http://eLearning.utdallas.edu>) under course ID ENTP 6375.501. You should be able to access eLearning with your UTD UNIX ID and password. Call computer services at (972) 883-2911 if you need assistance.

SELF INTRODUCTION

- Each student should post a Self-Introduction in the Discussion area of eLearning prior to the first class. Guidelines are provided on the eLearning Discussion page.

COURSE OUTLINE

Date	Topic	Readings/Assignments/Deliverables
S01 - 01/23	Introduction	Schilling Chapter 1
S02 - 01/30	Sources of Innovation AB – Team-1	Schilling Chapter 2 Case: Bank of America DL – Team-2
S03 - 02/06	Types & Patterns of Innovation AB – Team-4	Schilling Chapter 3 Case: Kodak and the Digital Revolution DL – Team-3
S04 - 02/13	Standards Battles & Design Dominance AB – Team-5	Schilling Chapter 4 Case: Adobe Systems DL – Team-7
S05 - 02/20	Timing of Entry AB – Team-6	Schilling Chapter 5 Case: Zoll Medical Corporation (A) DL – Team-1
S06 - 02/27	Defining the Organization's Strategic Direction AB – Team-7	Schilling Chapter 6 Case: Apple 2006 DL – Team--6
S07 – 03/06	Choosing Innovation Projects AB – Team-3	Schilling Chapter 7 Case: Guidant Radiation Therapy DL – Team-5
Mid-term Exam Handed out		
S08 – 03/13	Collaboration Strategies AB – Team-2	Schilling Chapter 8 Case: Millennium Pharmaceuticals DL – Team-4



03/20	Spring Break	
S09 – 03/27	Framework for Product Management AB – Team-7	Case: Medtronic Cardiac Pacemaker Business DL – Team-2
	Forecasting Methods, Technology Diffusion, Adoption and Experience Curve	<u>Mid-term Exam Due</u>
S10 – 04/03	Protecting Innovation AB – Team-5	Schilling Chapter 9 Case: Novell Open-Source Software Strategies DL – Team-3
S11 – 04/10	Organizing for Innovation AB – Team-3	Schilling Chapter 10 Case: USA Today: Pursuing the Network Strategy (A) DL – Team-4
S12 – 04/17	Managing the New Product Development Process AB – Team-6	Schilling Chapter 11 Case: Mission to Mars DL – Team-5
S13 – 04/24	Managing New Product Development Teams AB – Team-1	Schilling Chapter 12 Case: Teradyne Corporation: The Jaguar Project DL – Team-6
		Final Exam Handed out
S14 – 05/01	Crafting a Deployment Strategy-1 AB – Team-4	Schilling Chapter 13 Case: XM Satellite Radio (A) DL – Team-1
S15 – 05/08	Crafting a Deployment Strategy-2 AB – Team-2	Case: Healthymagination at GE DL – Team-7
	Final Discussion	<u>Final Exam & Peer Evals. Due</u> Video: Stanford Executive Briefing Series Henry Chesbrough: Open Business Models

This course schedule is not absolute. While every effort will be made to follow the schedule as listed, changes may be made as needed. It is the student's responsibility to track changes that are announced.

UNIVERSITY POLICIES <https://go.utdallas.edu/syllabus-policies>

Off-campus Instruction and Course Activities-Off-campus, out-of-state, and foreign instruction and activities are subject to state law and University policies and procedures regarding travel and risk-related activities. Information regarding these rules and regulations may be found at the website address http://www.utdallas.edu/BusinessAffairs/Travel_Risk_Activities.htm. Additional information is available from the office of the school dean. Below is a description of any travel and/or risk-related activity associated with this course.

Student Conduct & Discipline- The University of Texas System and The University of Texas at Dallas have rules and regulations for the orderly and efficient conduct of their business. It is the responsibility of each student and each student organization to be knowledgeable about the rules and regulations which govern student conduct and activities. General information on student conduct and discipline is contained in the UTD publication, *A to Z Guide*, which is provided to all registered students each academic year.

The University of Texas at Dallas administers student discipline within the procedures of recognized and established due process. Procedures are defined and described in the *Rules and Regulations, Board of Regents, the University of Texas System, Part 1, Chapter VI, Section 3*, and in Title V, Rules on Student Services and Activities of the university's *Handbook of Operating Procedures*. Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations (SU 1.602, 972/883-6391).

A student at the university neither loses the rights nor escapes the responsibilities of citizenship. He or she is expected to obey federal, state, and local laws as well as the Regents' Rules, university regulations, and administrative rules. Students are subject to discipline for violating the standards of conduct whether such conduct takes place on or off campus, or whether civil or criminal penalties are also imposed for such conduct.

Academic Integrity- The faculty expects from its students a high level of responsibility and academic honesty. Because the value of an academic degree depends upon the absolute integrity of the work done by the student for that degree, it is imperative that a student demonstrate a high standard of individual honor in his or her scholastic work.

Scholastic dishonesty includes, but is not limited to, statements, acts or omissions related to applications for enrollment or the award of a degree, and/or the submission as one's own work or material that is not one's own. As a general rule, scholastic dishonesty involves one of the following acts: cheating, plagiarism, collusion and/or falsifying academic records. Students suspected of academic dishonesty are subject to disciplinary proceedings.

Plagiarism, especially from the web, from portions of papers for other classes, and from any other source is unacceptable and will be dealt with under the university's policy on plagiarism (see general catalog for details). This course will use the resources of turnitin.com, which searches the web for possible plagiarism and is over 90% effective.



Email Use- The University of Texas at Dallas recognizes the value and efficiency of communication between faculty/staff and students through electronic mail. At the same time, email raises some issues concerning security and the identity of each individual in an email exchange. The university encourages all official student email correspondence be sent only to a student's U.T. Dallas email address and that faculty and staff consider email from students official only if it originates from a UTD student account. This allows the university to maintain a high degree of confidence in the identity of all individual corresponding and the security of the transmitted information. UTD furnishes each student with a free email account that is to be used in all communication with university personnel. The Department of Information Resources at U.T. Dallas provides a method for students to have their U.T. Dallas mail forwarded to other accounts.

Withdrawal from Class- The administration of this institution has set deadlines for withdrawal of any college-level courses. These dates and times are published in that semester's course catalog. Administration procedures must be followed. It is the student's responsibility to handle withdrawal requirements from any class. In other words, I cannot drop or withdraw any student. You must do the proper paperwork to ensure that you will not receive a final grade of "F" in a course if you choose not to attend the class once you are enrolled.

Student Grievance Procedures- Procedures for student grievances are found in Title V, Rules on Student Services and Activities, of the university's *Handbook of Operating Procedures*.

In attempting to resolve any student grievance regarding grades, evaluations, or other fulfillments of academic responsibility, it is the obligation of the student first to make a serious effort to resolve the matter with the instructor, supervisor, administrator, or committee with whom the grievance originates (hereafter called "the respondent"). Individual faculty members retain primary responsibility for assigning grades and evaluations. If the matter cannot be resolved at that level, the grievance must be submitted in writing to the respondent with a copy of the respondent's School Dean. If the matter is not resolved by the written response provided by the respondent, the student may submit a written appeal to the School Dean. If the grievance is not resolved by the School Dean's decision, the student may make a written appeal to the Dean of Graduate or Undergraduate Education, and the dean will appoint and convene an Academic Appeals Panel. The decision of the Academic Appeals Panel is final. The results of the academic appeals process will be distributed to all involved parties.

Copies of these rules and regulations are available to students in the Office of the Dean of Students, where staff members are available to assist students in interpreting the rules and regulations.

Incomplete Grade Policy- As per university policy, incomplete grades will be granted only for work unavoidably missed at the semester's end and only if 70% of the coursework has been completed. An incomplete grade must be resolved within eight (8) weeks from the first day of the subsequent long semester. If the required work to complete the course and to remove the incomplete grade is not submitted by the specified deadline, the incomplete grade is changed automatically to a grade of **F**.

Disability Services- The goal of Disability Services is to provide students with disabilities educational opportunities equal to those of their non-disabled peers. Disability Services is located in room 1.610 in the Student Union. Office hours are Monday and Thursday, 8:30 a.m. to 6:30 p.m.; Tuesday and Wednesday, 8:30 a.m. to 7:30 p.m.; and Friday, 8:30 a.m. to 5:30 p.m.

The contact information for the Office of Disability Services is:

The University of Texas at Dallas, SU 22, PO Box 830688, Richardson, Texas 75083-0688, (972) 883-2098 (voice or TTY)

Essentially, the law requires that colleges and universities make those reasonable adjustments necessary to eliminate discrimination on the basis of disability. For example, it may be necessary to remove classroom prohibitions against tape recorders or animals (in the case of dog guides) for students who are blind. Occasionally an assignment requirement may be substituted (for example, a research paper versus an oral presentation for a student who is hearing impaired). Classes enrolled students with mobility impairments may have to be rescheduled in accessible facilities. The college or university may need to provide special services such as registration, note-taking, or mobility assistance.

It is the student's responsibility to notify his or her professors of the need for such an accommodation. Disability Services provides students with letters to present to faculty members to verify that the student has a disability and needs accommodations. Individuals requiring special accommodation should contact the professor after class or during office hours.

Religious Holy Days- The University of Texas at Dallas will excuse a student from class or other required activities for the travel to and observance of a religious holy day for a religion whose places of worship are exempt from property tax under Section 11.20, Tax Code, and Texas Code Annotated.

The student is encouraged to notify the instructor or activity sponsor as soon as possible regarding the absence, preferably in advance of the assignment. The student, so excused, will be allowed to take the exam or complete the assignment within a reasonable time after the absence: a period equal to the length of the absence, up to a maximum of one week. A student who notifies the instructor and completes any missed exam or assignment may not be penalized for the absence. A student who fails to complete the exam or assignment within the prescribed period may receive a failing grade for that exam or assignment.

If a student or an instructor disagrees about the nature of the absence [i.e., for the purpose of observing a religious holy day] or if there is similar disagreement about whether the student has been given a reasonable time to complete any missed assignments or examinations, either the student or the instructor may request a ruling from the chief executive officer of the institution, or his or her designee. The chief executive officer or designee must take into account the legislative intent of TEC 51.911(b), and the student and instructor will abide by the decision of the chief executive officer or designee.