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**Managing Technology and Innovation
MGMT 480, section 001, 3 credits
Fall 2024**

Email: h Zhang@njit.edu (email is the best way to contact the instructor; students are required to include full name, course, and section number in the email to the instructor)

Office Hours: Tuesday/Thursday 2:30-3:45pm or by appointment (students are recommended to make an appointment with the instructor for a specific time slot for a meeting. The instructor will guarantee to be available during the office hours indicated above; alternative meeting times may be available subject to appointments, online or in person)

Class Time: Tuesday and Thursday 4:00-5:20pm

Class Location: FMH 408

1. Course Overview

This course focuses on the strategic management of technology and innovation in firms. It will take the perspectives of various levels of management in studying value creation and value capture through technological innovation, intrapreneurship, and entrepreneurship. Students will examine and analyze how firms effectively manage activities involved in value creation and value capture.

2. Required Course Materials

Strategic Management of Technological Innovation, 7th edition (or 6th edition)¹

By Melissa Schilling

McGraw-Hill Education (Notes: 7th and 6th editions have different ISBN)

Each student will also need to purchase one case for the case study.

3. Learning Outcomes

Upon successful completion of this course, the student should be able to:

- (a) Describe different types of technological changes and innovation.
- (b) Apply the knowledge of technological changes and innovation to real-world business practices.
- (c) Analyze business situations at various levels of management to create and capture value.
- (d) Evaluate the tradeoffs associated with technological innovation.
- (e) Create a plan for sustainable value creation and capture.

In addition to the course-specific learning outcomes listed above, this course intends to help students:

- (a) demonstrate the knowledge and application of business fundamentals (in the technology/innovation domain)
- (b) demonstrate the ability to deliver effective presentations enhanced by technology

¹ The lectures and coursework are based on the 7th edition. While the two editions have similar content, students who use the 6th edition shall track and study the different content (based on slides on Canvas) of the 7th edition.

- (c) demonstrate the ability to write clear and concise reports based on relevant information
- (d) demonstrate the ability to understand and use team-building behaviors to accomplish group tasks

4. Course Site

Please go to CANVAS. The Canvas site is where most course materials are posted. Make sure you have an NJIT UCID and password so that you are able to access Canvas. The instructor will use Canvas to post materials throughout the semester. Please be sure to check the site (canvas.njit.edu) frequently. Please contact the helpdesk (973-596-2900) for problems associated with Canvas.

5. Tentative Class Schedule - See Appendix C.

6. Course Deliverables/ Grade Components

| Required work | Score | Notes |
|---|------------|--|
| Mini-presentation | 15 | Technological innovation; the presentation is followed by class discussion |
| Close-Book Exam One | 50 | Multiple-choice questions |
| Close-Book Exam Two | 35 | Multiple-choice questions |
| Quizzes | 49 | 7 points/quiz * 7 quizzes = 49 points <i>One quiz with the lowest score will be dropped from final grading: 8 quizzes – 1 dropped quiz = 7 quizzes</i> |
| Final Paper | 35 | Due in the final exam week |
| Serve as a judge for team presentations | 6 | All students serve as a judge across all the presentation days to earn the 6 points; otherwise, 0 point. No in-between (i.e., partial participation leads to 0; no partial credit) |
| In-class Exercises | 25 | Participation is required to earn points. 5 points/exercise * 5 exercises = 25 points |
| Case Study | 30 | Peer evaluation is conducted. Each student's score = team project score x peer evaluation |
| Case Study Presentation | 15 | 50% of grade by students and 50% of grade by the instructor |
| TOTAL | 260 | |

Notes: Students who do not submit peer evaluation by the deadline will receive a penalty of 5% reduction in case study individual grade.

7. Calculation of the Course Grade

| <u>Total Score</u> | <u>Grade</u> | <u>Total Score</u> | <u>Grade</u> |
|--------------------|--------------|--------------------|--------------|
| 90 – 100% | A | 75 – 79.9% | C+ |
| 85 – 89.9% | B+ | 70 – 74.9% | C |
| 80 – 84.9% | B | 60 – 69.9% | D |
| | | < 60% | F |

8. AI Policy

One or more in-class exercises may be integrated with the use of AI to help students understand the role of AI in innovation. However, generative AI (e.g., ChatGPT) is strictly prohibited in all other assignments (i.e., grading components listed in Section 6), so that students' critical thinking is trained and understanding of fundamental knowledge of technological innovation is facilitated.

9. Posted Grades

All grades for course deliverables will be posted on Canvas in a timely manner. Students have two weeks to challenge a grade after it has been posted. When the two-week period is over, the professor will not revisit an assignment, unless an excuse is verified by the office of the Dean of Students. Do not e-mail requests for additional points unless there is an error in grading. Keep in mind that **fairness** is the key to grading.

Grades are not 'given out' by the professor; they are 'earned' by the student. Make sure you 'earn' a grade that you can live with.

10. Mini-presentation: Technological Innovation

Each student is required to give a presentation of today's technology-related innovation in the beginning of the class. After the presentation is a brief class discussion and/or Q&A, where students have an opportunity to interact with the presenters. The order of presentation will be randomly assigned. Each student will present a case of innovation that was **not** previously presented by other students in this course. The presentation should last up to 10 minutes, so students should keep the presentation precise. The presentation is in the format of PowerPoint slides. The presentation includes the following content:

a. Post the topic (2 points)

Notes: Each student is required to post the name of technology-related innovation on Canvas discussion forum **before** the scheduled presentation. As such, other students can always check the discussion forum to ensure their topics are new to the class (i.e. do not overlap with previous topics). Keep in mind that you cannot present an innovation that has been presented in this class.

b. Presentation content

- What is the technology-related innovation? And where do you find it? (3 points)

Notes: This innovation can be goods or services introduced within the past **one** year (cannot be longer than one year) or being developed (if so, it must be close to completion). If a student decides to pursue the latter, please make sure that you can obtain sufficient information about the innovation in progress to give the presentation. Please note that "technology" itself is a broad term, so students should not focus on only those products used on a daily basis, such as smartphone and TV. Innovation can be either tangible goods (e.g. vehicle and phone) or intangible service (e.g. telecommunication and mobile app). It can be in the B2C (for consumers) market or B2B market (for organizations). A good place to look for articles is the Kickstarter, Indiegogo, Wall Street Journal, Business Week, Fortune, Forbes, New York Times - Technology Section, or any trade magazines from an industry you are interested in.

- How did (or will) the innovation impact the company (that develops it) and the industry? (2 points)

Notes: The impacts can be positive and/or negative, from various perspectives.

- How did (or will) the innovation impact its customers? (2 points)

Notes: If the innovation is in a B2C market, customers are individual consumers; if it is in a B2B market, then customers are other companies. The impacts can be positive and/or negative.

c. Presentation style

- Slides readability (2 points)
- Logic flow and organization of the slides (1 point)
- Communication of the presenter (2 points)

d. References (e.g., sources of your information; web links) (1 point)

11. Quizzes

Multiple quizzes will be given throughout this semester. These periodic quizzes will be based on materials covered in lectures. Each question is worth 1 point. Each quiz covers content from prior class(es) and same-day class. If the student misses a quiz and has an excuse approved by the office of Dean of Students, a make-up quiz will be given, so that the student will not receive any penalty. Quizzes are given at the end of the class, and they are paper-based, unless noted otherwise.

At the end of this semester, a quiz with the lowest score will be dropped from the final grading. Only one quiz will be dropped from the final grading. No other required grading components will be dropped from the final grading.

The quiz is given at the end of each class. Students can take bathroom breaks during the class. However, if a student leaves the class for an extended period and rejoins the class towards the end to take the quiz, the student may receive a 0 for the quiz based on the instructor's assessment. If a pattern forms across classes, this behavior may be reported to the office of Dean of Students.

12. Exams

- Exam One will cover the content of Chapters 1-6, slides, and lecture content.
- Exam Two is not cumulative and it will cover all content taught after Exam One. All lectures with new content will be concluded one week before Exam Two. Students shall take advantage of that one week to prepare for Exam Two.

Severe illness or an unplanned emergency situation is the only legitimate reason for not taking a scheduled exam. Legitimate documentation must be presented to the Office of Dean of Students. Only verified excuses by that office will result in makeup exams. All makeup exams will be administered at the convenience of the instructor, and may be scheduled before the regular exam time. For more details, please refer to the section of Class Policies.

13. Case Study

Additional information, such as case study guidelines and policies, will be posted on Canvas in a separate file. Assignments of case studies are teamwork. Each team will study one case in this class. Each time, multiple cases will be given to the class, and each case can only be taken by only one team (first come, first served). The grade is calculated based on two components: team grade and peer evaluation. Each student's grade = team grade * peer evaluation (%). For instance, if your team receives 25 (out of 30 points) for a case study and you receive 92% for peer evaluation, your individual grade is 23 (25*92%) out of 30 points. **Students who do not submit peer evaluation by deadline will receive a penalty of 5% reduction in case study individual grade.** Peer evaluation criteria are listed in Appendix B.

Each team is required to complete PowerPoint slides. Moreover, detailed explanations must be added in the notes section. Each team is required to submit the slides with notes to the instructor for grading. In general, the slides should be brief, but the notes section should include details, explanations, rationales, backgrounds, etc. The notes are considered as "written paper."

Cases will be presented to the class by the team. The order will be decided randomly. Presentation is assessed by both the instructor (50%) and the class (50%). Please refer to the appendices for grading of peer evaluation and team presentation. **A student who misses his or her own presentation without an approved excuse will receive "0" for the presentation and attendance grades.** Class attendance is required on all presentation days throughout the class because every student will serve as a judge to assess other teams' presentations. In other words, attendance is required on all presentation days unless the excuse is approved by the office of Dean of Students. In addition, students are required to stay throughout the class to serve as a judge. **Leaving early without an approved excuse will be counted as missing class, and thus may result in "0."**

Peer evaluation is used to prevent “free riding” in teamwork. A given student’s “free-riding” behavior may sometimes be severe. If a student has not contributed to the team project, other teammates can use the following class policy to “fire” this student. The team should first attempt to communicate with the student who has not contributed to the team project. The communication needs to be, at least, emails, though other methods (e.g., phone calls and text messages) may be used as additional communication tools within the team. In the emails, the team must Cc the instructor. If there is no response from that student after two attempts of email communication (after two business days of waiting for a reply for each communication; at least four business days of waiting in total), the team may ask him or her to leave the team if all other team members vote “yes” for it. In such a case, this student will independently complete the project and is not allowed to join other teams.

14. Serve as a Judge

Each student is required to serve as a judge to assess other teams’ case study presentations. The presentation evaluation criteria are listed in Appendix A. This helps students better understand effective presentations and team-building behaviors. All students serve as judges across all the presentation days to earn the full points; otherwise, 0 point (i.e., partial or no participation). No in-between (i.e., no partial points are given).

15. In-class Exercises

There are several in-class exercises this semester. For each exercise: full participation = full points; no or partial participation = 0 point. There is no in-between.

- Exercise 1: idea generation
- Exercise 2: scoping
- Exercise 3: design and development based on cross-functional communication
- Exercise 4: building a business case
- Exercise 5: new product launch

16. Final Paper

Final Paper is due in the Final Exam week (due date/time to be announced). Each student is required to submit this assignment by the end of the due date/time set by the instructor in the Final Exam week. The Final Paper is considered the “final exam” in this course. It is due in the final exam week (the due date is based on the final exam schedule).

17. Guaranteed Extra Credits

No makeup for any extra credit.

While students are expected to attend classes, attendance in a regular lecture is not checked. However, on any given day when the attendance rate is lower than 70%, the instructor will offer 1-point extra credit (i.e., a quiz including questions mainly based on lectures). The instructor will grade the quizzes, and students may or may not earn the credits; thus, students are recommended to listen to the lectures carefully. This extra-credit opportunity is given only on a regular lecture day (e.g., class without a quiz, exam, team presentation, or in-class exercise). It is given at the beginning of the class. The calculation of 70% is based on the attendance of students in the classroom at the beginning of the class. Students who leave the class after the extra-credit quiz will not receive the extra credit.

A second extra-credit opportunity is the voluntary, anonymous mid-term course evaluation. The instructor would like to hear from students about their evaluations and expectations in this course, so that the instructor can improve his teaching techniques, if needed, to fulfill student needs. Those who complete the mid-term course evaluation, designed as an online survey, will be given extra credit as

an incentive. Please note that the mid-term course evaluation is only for the instructor in this course to help improve his teaching quality.

For some (may not be all) in-class exercises, the winning team(s) will receive extra credit (details will be given in the same day's class). The winning is decided either by class votes or the accuracy of the answer, depending on which exercise is implemented.

18. Class Policies

Class Attendance

- a. Attendance will be taken in the first and/or second classes. After that, attendance is not taken in a given **regular** lecture. A regular lecture is defined as a class with only the instructor's lecture without other required class activities, such as presentation, exam, quiz, etc. However, it likely proves very difficult to pass this class without attendance. This course is a mixture of lectures, class discussion, case study, presentations, quizzes, and exams. Students are responsible for everything that is discussed in class, taken up in class, or handed out in class. If you cannot be in a class, let the instructor know the reason for your absence before class begins.
- b. Although attendance is not taken in a given regular lecture, students are **required** to attend the class when a quiz, project, presentation, exam, meeting, and/or other required activities noticed by the office of Dean of Students. Any missed activities without an excuse approved by the office of Dean of Students will result in a loss of credits for class activities/assignments. Excused absences (see below) will result in make-up assignments (for individual work).
- c. Although attendance is not taken, students are **not** allowed to be late for any classes without an official excuse. Being punctual is required for class attendance. Arriving late or leaving early will disqualify a student from participating in any missed class activities (e.g., quiz and extra credits) and will also be counted as a "0".
- d. Excused Absences. Some absences may qualify as "Excused Absences." Unless otherwise instructed by the instructor, students must contact the office of Dean of Students within one week after returning to the campus. In sum, proof of absence requires documentation in all cases. The instructor expects to receive the notification from the office of Dean of Students if the absence excuse is verified by their office. Athlete students should follow the university policy to provide the instructor with travel schedule for excused absences.
- e. For missed teamwork with an excuse approved by the office of Dean of Students, the instructor will discuss with the individual and the team for makeup.
- f. A student who misses an exam will be given the exam before the scheduled exam date/time, unless noticed otherwise.

Email and Announcements

Students are required to check their NJIT email and Canvas announcements. The instructor sends emails to students frequently for announcements, reminders, etc.

Overall Assignment Guidelines

Written work must be prepared in a professional manner. It is to be typed, with proper grammatical construction and correct spelling. The grade assigned to the work will reflect its analytical soundness. Written work must follow a reasonable outline, assumptions clearly stated, arguments carefully supported, and all secondary sources cited. Oral presentations must adhere to the same criteria.

Communication

a. Teamwork (between students)

Teamwork is not an easy task. It requires students to adapt to the team dynamics, build work relations with each other, follow the policies and rules, resolve issues in an effective and efficient way, etc. All require successful communication and clarification.

b. Email Etiquette (to the instructor)

This is a business course, and the expectation is that you will conform to appropriate business letter-writing practice in all of your emails to the instructor. The following are the basics.

- Put the course number (MGMT 480) and section number (001) in the subject line.
- Identify the subject of the e-mail with a brief but descriptive summary of the topic: include a proper salutation, and the assignment details such as the title, number, quiz, or exam.
- Proofread your e-mail for proper sentence structure, capitalization, spelling, and punctuation.
- Conclude the e-mail message with a proper closing (e.g., Regards, Sincerely) and your full name.

c. Checking email

The instructor frequently sends emails to students' NJIT email accounts for important announcements. Students will take responsibility for any missing information due to not checking their emails.

Academic Integrity

Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at: <http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf>.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu.

Disability accommodation

Educational access is the provision of classroom accommodations, auxiliary aids and services to ensure equal educational opportunities for all students regardless of their disability. If you are in need of accommodations due to a disability please contact the Office of Accessibility Resources & Services (OARS) (email: OARS@NJIT.EDU; website: <https://www.njit.edu/accessibility/meet-staff>), located at Kupfrian Hall 201, to discuss your specific needs. A Letter of Accommodation Eligibility from the OARS authorizing your accommodations will be required. Accommodations need to be requested in advance and will not be granted retroactively.

Classroom behavior

During the lecture time, **NO PHONES** are allowed in class, unless approved by the instructor. Students are expected to be respectful of one another and the professor in classroom discussions. The goal is to foster a learning environment where students feel comfortable discussing concepts and applying them in class. If for any reason your behavior is viewed as disruptive to the class, you will be asked to leave and you will be marked absent.

Final Comments

Students registered for this course assume full responsibility for reading and understanding the course administration stated in this file.

Appendix A. Example of Team Presentation Evaluation Form

1. Communication (To which extent did the team present in class?)
2. Slides readability (To which extent were the slides readable?)
3. Logic flow (To which extent did the slides show a clear logic?)
4. Teamwork (To which extent did team members allocate work evenly for the presentation?)
5. Q&A (To which extent did team members answer the professor's questions?)

Appendix B. Example of Peer Evaluation (It will be distributed via an online survey)

Peer Evaluation is confidential!

1. To which extent are you satisfactory with this student's attendance in group discussion? (including arriving on time, communication via email or phone, etc.)
2. To which extent did this student contribute ideas and viewpoints to group discussion?
3. To which extent did this student contribute to preparation for the project (including report writing, data collection, presentation, etc.)?
4. To which extent did this student respect others' opinions?
5. In general, to which extent did this student work with others as a TEAM?

Appendix C. MGMT 480 Tentative Class Schedule

The instructor reserves the right to change the course schedule, as the need arises.

| Dates (MM/DD) | | Lecture Content | Notes |
|-----------------|----------|---|--|
| 09/03 | Tuesday | Course Introduction | |
| 09/05 | Thursday | Chapter 1 | Mini-presentation order is decided |
| 09/10 | Tuesday | Chapter 2 | Quiz 1: syllabus & chapter 1; team formation initiated |
| 09/12 | Thursday | Chapters 2,3 | Mini-presentation; teams developed |
| 09/17 | Tuesday | In-class Exercise 1 | Exercise: idea generation |
| 09/19 | Thursday | Chapter 3 | Mini-presentation; Quiz 2: chapters 2,3; team formation finalized; case study is given |
| 09/24 | Tuesday | Chapters 4 | Mini-presentation |
| 09/26 | Thursday | Chapters 4,5 | Mini-presentation; Quiz 3: chapters 3,4,5 |
| 10/01 | Tuesday | Chapter 5,6 | Mini-presentation |
| 10/03 | Thursday | In-class Exercise 2 | Exercise: scoping |
| 10/08 | Tuesday | Meeting with the Instructor | Mini-presentation; teams are required to meet with the instructor for updates and Q&A for Case Study; midterm course evaluation (extra credit) distributed |
| 10/10 | Thursday | Chapter 6 | Mini-presentation; Quiz 4: chapters 4,5,6 |
| 10/15 | Tuesday | Team Presentation Day 1 | All case study assignments are due; peer evaluation distributed; No lectures before 10/24 – use this time to prepare for Exam One |
| 10/17 | Thursday | Team Presentation Day 2 | No lectures before 10/24 – use this time to prepare for Exam One |
| 10/22 | Tuesday | Team Presentation Day 3 | No lectures before 10/24 – use this time to prepare for Exam One |
| 10/24 | Thursday | Exam One | Chapters 1-6 and lecture content |
| 10/29 | Tuesday | Chapters 8 | Mini-presentation |
| 10/31 | Thursday | Chapter 8,9 | Mini-presentation; Quiz 5: chapters 8,9 |
| 11/05 | Tuesday | Chapter 9 | Election Day! Class meets online to provide convenience to students who would like to vote; mini-presentation |
| 11/07 | Thursday | Chapter 10 | Mini-presentation; Quiz 6: chapters 9,10 |
| 11/12 | Tuesday | Chapters 10,12 | Mini-presentation |
| 11/14 | Thursday | Chapter 12 In-class Exercise 3 | Mini-presentation; exercise: design and development based on cross-functional communication |
| 11/19 | Tuesday | Chapters 12,11 | Mini-presentation; Quiz 7: chapters 10,11,12 |
| 11/21 | Thursday | Chapters 11 | Mini-presentation |
| 11/26 | Tuesday | In-class Exercise 4 | Exercise: virtual teamwork build a business case; Thursday class meet; class meet online on this day |
| 11/28 | Thursday | No Class | Thanksgiving |
| 12/03 | Tuesday | Chapters 13 | Mini-presentation; Quiz 8: chapters 12,11,13; no new lectures after this date – students use the time to prepare for Exam Two |
| 12/05 | Thursday | In-class Exercise 5 | No more lectures – students take advantage of the time to prepare for Exam Two; exercise: new product launch |
| 12/10 | Tuesday | Exam Two | Chapters 8-13 and lecture content; Final Paper guidelines given |
| 12/12 | Thursday | No Class | Reading Day |
| Final Exam Week | | Final Paper is due (due date based on the final exam schedule ¹) and will be submitted on Canvas | |

¹The final exam schedule will be announced during the semester.