**Strategic Management of Technological Innovation**

**MASY1-GC 3310** | **102** | **Fall 2024 |** **09/03/2024 - 12/10/2024 | 3 Credit**

**Modality: In-person**

**Course Site URL:** <https://brightspace.nyu.edu/>

**General Course Information**

**Name/Title:** Prof. Amit Patel, Adjunct Instructor, He/Him/His

**NYU Email:** asp13@nyu.edu

**Class Meeting Schedule:** 09/03/2024 - 12/10/2024| Tuesdays | 06:20pm -- 09:20pm

**Class Location:** TBA

**Office Hours:** Zoom Meeting, Wednesday 7:30 PM EST by requesting an appointment via NYU email. The request should be emailed before Tuesday, 10:00 PM EST.

**Description**

This course prepares students to meet the demands of strategic planning in a technology-driven organization. It addresses optimizing the R&D (Research and Development) cycle, smooth transition from design to production, innovation streams, and integration of technology with business strategy. Focusing on case studies, students learn real-world technology decision-making strategies, including allocation of resources, managing complex technology initiatives, and management of technology teams. The course examines the role technological innovations play in the competitive dynamics of industries and the use of metrics to evaluate new product effectiveness and innovation performance. Students create individual proposals for applications of technological innovations to address business needs.

**Prerequisites**

N/A

**Learning Outcomes**

At the conclusion of this course, students will be able to:

* Apply innovation concepts to the management of technological innovation
* Apply analysis tools to determine the success potential of applying an innovation
* Apply an emerging technology to create economic benefit for an organization
* Design intellectual property protection strategies for the created innovations Create metrics to increase the success rate of technological innovation application projects

**Communication Methods**

Be sure to turn on your [NYU Brightspace notifications](https://www.nyu.edu/servicelink/KB0018507) and frequently check the “Announcements” section of the course site. This will be the primary method I use to communicate information critical to your success in the course. To contact me, send me an email. I will respond within 24 hours.

**Structure | Method | Modality**

There are 14 session topics in this course. The session topics are organized into three (3) areas of study: 1) History, 2) Learning Principles, and 3) Instructional Design in Practice.

Active learning experiences and small group projects are key components of the course. Assignments, papers, and exams will be based on course materials (e.g., readings, videos), lectures, and class discussions. Course sessions will be conducted synchronously on NYU Zoom, which you can access from the course site in [NYU Brightspace](https://brightspace.nyu.edu/).

**Expectations**

Learning Environment

You play an important role in creating and sustaining an intellectually rigorous and inclusive classroom culture. Respectful engagement, diverse thinking, and our lived experiences are central to this course, and enrich our learning community.

Participation

You are integral to the learning experience in this class. Be prepared to actively contribute to class activities, group discussions, and work outside of class.

Assignments and Deadlines

Please submit all assignments to the appropriate section of the course site in [NYU Brightspace](https://brightspace.nyu.edu/). If you require assistance, please contact me BEFORE the due date.

Course Technology Use

We will utilize multiple technologies to achieve the course goals. I expect you to use technology in ways that enhance the learning environment for all students.

**Generative AI Use**

**Not permitted**

You can only learn from the work you do. Unless otherwise stated, you should not use generative AI tools to create any part of an assignment in this course; every submission should be entirely your work (for example from an NYU course).

This course assumes that work submitted by students – all process work, drafts, brainstorming artifacts, final works – will be generated by the students themselves, working individually or in groups as directed by class assignment instructions. As will any other class work generated by anyone other than the students (by other students, by a company, or by using generative AI tools), use can be a violation of Academic Integrity policy.

Feedback and Viewing Grades

I will provide timely meaningful feedback on all your work via our course site in NYU Brightspace. You can access your grades on the course site Gradebook.

Attendance

I expect you to attend all class sessions. Attendance will be taken into consideration when determining your final grade.

Refer to the [SPS Policies and Procedures page](https://www.sps.nyu.edu/homepage/student-experience/policies-and-procedures.html) for additional information about attendance.

**NYU SPS Graduate Grading Scale**

|  |  |  |  |
| --- | --- | --- | --- |
| **A** | 95-100 | 4.000 | **Exceptional:** Demonstrates exceptional mastery of all learning outcomes of the course and thorough and complete understanding of all concepts. |
| **A-** | 90-94 | 3.667 | **Excellent:** Demonstrates highly competent mastery of all learning outcomes of the course and strong understanding of all concepts. |
| **B+** | 87-89 | 3.333 | **Very Good; exceeds course standards:** Demonstrates mastery of all learning outcomes of the course and understanding of core concepts. |
| **B** | 83-86 | 3.000 | **Good; meets course standards:** Demonstrates mastery of some learning outcomes; understanding of some core concepts could be improved. |
| **B-** | 80-82 | 2.667 | **Somewhat Satisfactory;** meets some course standards and requires improvement: Demonstrates basic understanding of some learning outcomes; improved understanding of all core concepts is needed. |
| **C+** | 77-79 | 2.333 | **Less than Satisfactory; requires significant improvement:** Demonstrates partial understanding of all learning outcomes and core concepts; requires significant improvement. |
| **C** | 73-76 | 2.000 | **Unsatisfactory; requires substantial improvement:** Demonstrates partial understanding of some learning outcomes and core concepts; requires substantial improvement. |
| **C-** | 70-72 | 1.667 | **Unsatisfactory; requires extensive improvement:** Demonstrates poor understanding of all learning outcomes and core concepts; requires extensive improvement. |
| **F** | Below 70 |  | **Fail:** Demonstrates minimal to no understanding of all key learning outcomes and core concepts; work is unworthy of course credit towards the degree. |
| **P** |  |  | **Passing:** If a Pass/Fail grade is allowed, the choice of pass/fail must be made prior to the completion of the fifth week of the term. |

**Textbooks and Course Materials**

**Required Textbooks:**

* Schilling, M. A. (2021). Strategic Management of Technological Innovation. 7th Edition, McGraw-Hill Education. ISBN: 978-1-26408093-9

This book is a part of the Follett Access program. This is an NYU Bookstore initiative that delivers required course materials digitally at the lowest possible price. The book for this course Strategic Management of Technological Innovation, will be delivered to you digitally through the **CONNECT platform**. Here is the - [link](https://includedcp.follett.com/2015).er

* Yuri B. Aguiar (2020). Digital (R)evolution: Strategies to Accelerate Business Transformation. 1st Edition, John Wiley & Sons, ISBN-13: 978-1119619734, ISBN-10: 1119619734

This book can be purchased from any available sources such as NYU's bookstore, Amazon, or other bookstores.

**Bookstore contact info:**

email - [wsq.text@nyu.edu](mailto:wsq.text@nyu.edu)

phone - 212-998-4656

**Grading | Assessment**

Your grade in this course is based on your performance on multiple activities and assignments. Since all graded assignments are related directly to course objectives and learning outcomes, failure to complete any assignment will result in an unsatisfactory course grade. All written assignments are to be completed using APA format and must be typed and double-spaced. Grammar, punctuation, and spelling will be considered in grading. Please carefully proof-read your written assignments before submitting them for a grade. I will update the grades on the course site each time a grading session has been completed— typically three (3) days following the completion of an activity.

DESCRIPTION PERCENTAGE

Assigned Activities (total of 10) 20%

Discussion (total of 10) 20%

Attendance, Participation, and Ungraded Assignments 10%

Two Industry Case Studies (Team) 20%

Innovative Idea introduction (Individual) 10%

(Why do it 5% Strategy 5%, Timing ROI 5%)

Final Case Study (Individual) 20%

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TOTAL POSSIBLE 100%

See the [“Grades” section of Academic Policies](https://www.sps.nyu.edu/homepage/student-experience/policies-and-procedures.html#Graduate1) for the complete grading policy, including the letter grade conversion, and the criteria for a grade of incomplete, taking a course on a pass/fail basis, and withdrawing from a course.

**Course Outline**

**Start/End Dates:** 09/03/2024 - 12/10/2024 | Tuesday

**Time:** 06:20pm - 09:20pm

**No Class Date(s):** Tuesday – 10/15/2024

**Special Notes:** N/A

**Session 1: 09/03/24**

**Introduction:**

* Introductions of students and instructor
* Review of Syllabus
* Introduction to the Course and Overview of Course Requirements and Assignments

**Topics:**

Strategic Management of Technological Innovation – Chapter 1 - Introduction

Introduction to Technological Innovation

Digital (R)evolution - Chapter 1 – Drivers of Change

* What is discovery-driven digital transformation?
* What’s left for humans?
* Is your company a candidate for digital disruption?
* Why discovery-driven digital transformation is needed?
* How to get from the current state to the digital level

**Reading:**

* Strategic Management of Technological Innovation – Chapter 1 – Introduction
* Digital (R)evolution - Chapter 1 – Drivers of Change

**Session 2: 09/10/24**

**Topics:**

Strategic Management of Technological Innovation – Chapter 2 – Sources of Innovation

* Translating creativity into innovation
* Innovation in collaborative networks

Digital (R)evolution - Chapter 2 – Focus and Discipline

* Who is responsible for transformation?
* How to identify the opportunity to discover specific problems that can be addressed in a digital solution?
* How different are the “Always-on” digital natives?
* What is needed for your immediate survival?
* Does discovery-driven digital transformation need to be micromanaged?

**Reading:**

* Strategic Management of Technological Innovation – Chapter 2 – Sources of Innovation
* Digital (R)evolution - Chapter 2 – Focus and Discipline

**Session 3: 09/17/24**

**Topics:**

* Strategic Management of Technological Innovation – Chapter 3 – Types and Patterns of Innovation
* Types of innovation
* Technology S-Curve
* Technology Cycles

Digital (R)evolution - Chapter 3 – Idea Incubation

* Why innovation is essential for success?
* What’s the challenge with the digital transformation in high-performing organizations?
* How to overcome inclination to risk avoidance?
* Why organizations need empowered champions?
* Why most of the organizations struggle with the transformation?
* How to approach and propose the transformation?

**Reading:**

* Strategic Management of Technological Innovation – Chapter 3 – Types and Patterns of Innovation
* Digital (R)evolution - Chapter 3 – Idea Incubation

**Session 4: 09/24/24**

**Topics:**

Strategic Management of Technological Innovation – Chapter 4 – Standard Battles, Modularity, and Platform Competition

* Why dominant designs are selected?
* Multiple dimensions of value
* Modularity and platform competition

Digital (R)evolution - Chapter 4 – Operational Excellence

* What’s the relationship between operational excellence and customer experience?
* Who are your customers in the “service” economy?
* How to use data and analytics to make a case to executives and others?
* Where to look for the problems and pain points?
* Is the response time or solution time that matter?

**Reading:**

* Strategic Management of Technological Innovation – Chapter 4 – Standard Battles, Modularity, and Platform Competition
* Digital (R)evolution - Chapter 4 – Operational Excellence

**Session 5: 10/01/24**

**Topics:**

Strategic Management of Technological Innovation – Chapter 5 – Timing of Entry

* First-mover advantages
* First-mover disadvantages
* Strategies to improve timing options

Digital (R)evolution - Chapter 5 – Customer-Driven Change

* What’s more important: People or Technology?
* Why organizations struggle and become irrelevant?
* What are the principles of successful transformation?
* Is your digital workforce digitally proficient?

**Reading:**

* Strategic Management of Technological Innovation – Chapter 5 – Timing of Entry
* Digital (R)evolution - Chapter 5 – Customer-Driven Change
* Rita McGrath and Ryan McManus (2020). Harvard Business Review: Discovery-Driven Digital Transformation, Reprint: R2002J, May-June 2020

**Session 6: 10/08/24**

**Topics:**

Strategic Management of Technological Innovation – Chapter 6 – Defining the Organization’s Strategic Direction

* Assessing the firm’s current position
* Identifying core competencies and dynamic capabilities
* Strategic Intent

Digital (R)evolution - Chapter 6 – Strategy vs. Execution

* When is the last time you have communicated the digital strategy?
* What does it mean to be a transformational leader?
* How to set a winning transformation strategy?
* What could and will derail the transformation initiatives?
* How to get the “wagon” back on the track?

**Reading:**

* Strategic Management of Technological Innovation – Chapter 6 – Defining the Organization’s Strategic Direction
* Digital (R)evolution - Chapter 6 – Strategy vs. Execution

**Session 7: 10/22/24**

**Topics:**

Strategic Management of Technological Innovation – Chapter 7 – Choosing Innovation Projects

* The development budget
* Quantitative methods for choosing projects
* Disadvantages of quantitative methods
* Qualitative methods for choosing projects
* Combining quantitative and qualitative information

Digital (R)evolution - Chapter 7 – Hire Captains, Not Kings, or Queens

* Why hiring is so difficult?
* Are people assets or liabilities?
* Who are the most valuable players?
* Is reverse mentoring beneficial to companies?
* Can you teach passion?

**Reading**:

* Strategic Management of Technological Innovation – Chapter 7 – Choosing Innovation Projects
* Digital (R)evolution - Chapter 7 – Hire Captains, Not Kings, or Queens

**Session 8: 10/29/24**

**Topics:**

Strategic Management of Technological Innovation – Chapter 8 – Collaboration Strategy

* Reasons for going solo
* Advantages of collaborating
* Types of collaborative arrangements
* Choosing a mode of collaboration
* Choosing and monitoring partners

Digital (R)evolution - Chapter 8 – Integrated Ecosystems

* Why people think of Digital Transformation as back office processes?
* Why social collaboration is a prerequisite to digital transformation?
* Why it is so difficult for users to adopt new technologies?
* What’s the strategy to deal with knowledge workers?
* How to solve the information overload challenge?

**Reading**:

* Strategic Management of Technological Innovation – Chapter 8 – Collaboration Strategy
* Digital (R)evolution - Chapter 8 – Integrated Ecosystems

**Session 9: 11/05/24**

Strategic Management of Technological Innovation – Chapter 9 – Protecting Innovation

* Appropriability
* Patents, trademarks, and copyrights
* The effectiveness and use of protection mechanisms

Digital (R)evolution - Chapter 9 – Digital Proficiency and Innovation

* Has the advanced technology become commodity?
* Why digital proficiency is more important than transformational technologies?
* How to lead discovery-driven digital transformation?
* Are the robots taking the world over?
* Where do humans fit in the digital revolution?

**Reading:**

* Strategic Management of Technological Innovation – Chapter 9 – Protecting Innovation
* Digital (R)evolution - Chapter 9 – Digital Proficiency and Innovation

**Session 10: 11/12/24**

**Topics:**

Strategic Management of Technological Innovation – Chapter 10 – Organizing for Innovation

* Size and structural dimensions of the firm
* Structural dimensions of the firm
* Modularity and “Loosely Coupled” organizations
* Managing innovation across borders

Digital (R)evolution - Chapter 10 – Are you” Digitally Determined” or “Digitally Distraught”?

* What’s your digital strategy?
* Why digital transformation seems to be confusing?
* What is your definition of digital transformation?
* What are your fundamental digital transformation objectives?
* Determined or distraught?

**Reading:**

* Strategic Management of Technological Innovation – Chapter 10 – Organizing for Innovation
* Digital (R)evolution - Chapter 10 – Are you” Digitally Determined” or “Digitally Distraught”?

**Session 11: 11/19/24**

**Topics:**

Strategic Management of Technological Innovation – Chapter 11 – Managing the New Product Development Process

* Objectives of the new product development process
* Sequential versus partly parallel development process
* Product champions
* Involving customers and suppliers in the development process
* Tools for improving the new product development process
* Tools for measuring new product development performance

Digital (R)evolution - Chapter 11 – Use Case: The Smart City

* What are the boundaries of digital transformation?
* Why system of systems needs digital connectivity?
* What are the areas of smartness?
* Why changing people’s habits is more important than changing the technology?

**Reading:**

* Strategic Management of Technological Innovation – Chapter 11 – Managing the New Product Development Process
* Digital (R)evolution - Chapter 11 – Use Case: The Smart City

**Session 12: 11/26/24**

Strategic Management of Technological Innovation – Chapter 12 – Managing New Product Development Teams

* Constructing new product development teams
* The structure of new product development teams
* The management of new product development teams

Digital (R)evolution - Chapter 12 – Looking Ahead: Runway or Precipice?

* How intelligent is Artificial Intelligence?
* Why will robots not take your job?
* What does “User Experience” mean to humans and robots?
* What happens when great platforms go down?
* Why are people fooled by the look and feel?

**Reading:**

* Strategic Management of Technological Innovation – Chapter 12 – Managing New Product Development Teams
* Digital (R)evolution - Chapter 12 – Looking Ahead: Runway or Precipice?

**Session 13: 12/03/24**

**Topics:**

Strategic Management of Technological Innovation – Chapter 13 – Crafting a Deployment Strategy

* Launching Timing
* Licensing and compatibility
* Pricing
* Distribution
* Marketing

Digital (R)evolution - Chapter 13 – AI: The Elephant in the Room

* What AI is and is not?
* What’s the impact of AI on the workplace?
* Is AI capable to find needles in haystack?
* Is there a difference between AI and Data Science?
* Why Discovery-Driven Digital Transformation is the answer?

**Reading:**

* Strategic Management of Technological Innovation – Chapter 13 – Crafting a Deployment Strategy
* Digital (R)evolution - Chapter 13 – The Elephant in the Room

**Session 14: 12/10/24**

**Topics:**

* Innovative Idea Individual Presentation - Final
* Digital Future
* Course wrap-up

**Reading:** None

**NOTES:**

The syllabus may be modified to better meet the needs of students and to achieve the learning outcomes.

The School of Professional Studies (SPS) and its faculty celebrate and are committed to inclusion, diversity, belonging, equity, and accessibility (IDBEA), and seek to embody the IDBEA values. The School of Professional Studies (SPS), its faculty, staff, and students are committed to creating a mutually respectful and safe environment (*from the* [*SPS IDBEA Committee*](https://www.sps.nyu.edu/homepage/about-us/idbea/about-idbea.html)).

**New York University School of Professional Studies Policies**

1. Policies - You are responsible for reading, understanding, and complying with [University Policies and Guidelines](http://www.nyu.edu/about/policies-guidelines-compliance.html), [NYU SPS Policies and Procedures](http://sps.nyu.edu/academics/academic-policies-and-procedures.html), and [Student Affairs and Reporting](https://www.nyu.edu/about/policies-guidelines-compliance/policies-and-guidelines/student-services.html).

2. Learning/Academic Accommodations - New York University is committed to providing equal educational opportunity and participation for students who disclose their dis/ability to the [Moses Center for Student Accessibility](https://www.nyu.edu/students/communities-and-groups/student-accessibility.html). If you are interested in applying for academic accommodations, contact the [Moses Center](https://www.nyu.edu/students/communities-and-groups/student-accessibility/academic.html) as early as possible in the semester. If you already receive accommodations through the Moses Center, request your accommodation letters through the [Moses Center Portal](https://www.nyu.edu/students/communities-and-groups/student-accessibility.html) as soon as possible ([mosescsa@nyu.edu](mailto:mosescsa@nyu.edu) | 212-998-4980).

3. Health and Wellness - To access the University's extensive health and mental health resources, contact the [NYU Wellness Exchange](https://www.nyu.edu/students/health-and-wellness/wellness-exchange.html). You can call its private hotline (212-443-9999), available 24 hours a day, seven days a week, to reach out to a professional who can help to address day-to-day challenges as well as other health-related concerns.

4. Student Support Resources - There are a range of resources at SPS and NYU to support your learning and professional growth. For a complete list of resources and services available to SPS students, visit the [NYU SPS Office of Student Affairs site](https://www.sps.nyu.edu/homepage/student-experience/resources-and-services.html).

5. Religious Observance - As a nonsectarian, inclusive institution, NYU policy permits members of any religious group to absent themselves from classes without penalty when required for compliance with their religious obligations. Refer to the [University Calendar Policy on Religious Holidays](https://www.nyu.edu/about/policies-guidelines-compliance/policies-and-guidelines/university-calendar-policy-on-religious-holidays.html) for the complete policy.

6. Academic Integrity and Plagiarism - You are expected to be honest and ethical in all academic work. Moreover, you are expected to demonstrate how what you have learned incorporates an understanding of the research and expertise of scholars and other appropriate experts; and thus recognizing others' published work or teachings—whether that of authors, lecturers, or one's peers—is a required practice in all academic projects.

Plagiarism involves borrowing or using information from other sources without proper and full credit. You are subject to disciplinary actions for the following offenses which include but are not limited to cheating, plagiarism, forgery or unauthorized use of documents, and false form of identification

[Turnitin](https://www.nyu.edu/servicelink/KB0018471), an originality detection service in NYU Brightspace, may be used in this course to check your work for plagiarism.

Read more about academic integrity policies at the NYU School of Professional Studies on the [Academic Policies for NYU SPS Students](https://www.sps.nyu.edu/homepage/student-experience/policies-and-procedures.html) page.

7. Use of Third-Party Tools - During this class, you may be required to use non-NYU apps/platforms/software as a part of course studies, and thus, will be required to agree to the “Terms of Use” (TOU) associated with such apps/platforms/software.

These services may require you to create an account but you can use a pseudonym (which may not identify you to the public community, but which may still identify you by IP address to the company and companies with whom it shares data).

You should carefully read those terms of use regarding the impact on your privacy rights and intellectual property rights. If you have any questions regarding those terms of use or the impact on the class, you are encouraged to ask the instructor prior to the add/drop deadline.