

The Wharton School, University of Pennsylvania
Operations, Information, and Decisions Department

Enabling Technologies

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Course Description

The course provides a broad overview of what's going on in the tech industry. Conducting business in a networked economy invariably involves interplay with technology. The purpose of this course is to improve understanding of technology (what it can or cannot enable), the business drivers of technology-related decisions in firms, and to stimulate thought on new applications. The class provides a comprehensive overview of various emerging technologies and culminates in discussion of potential business impact of these technologies in the near future. In Spring 2023, our focus will exclusively be on Cloud Computing, Mobile, Data/AI, and Web3. No prior technical background is assumed but some interest in (and exposure to) technology is helpful. Every effort is made to build most of the lectures from the basics. That said, students with prior background in tech will find it easier.

Objectives: The course has two main objectives: (i) Provide a broad overview of what's going on in tech (ii) Understand how technology can enable the delivery of online products & services (cloud computing, analytics) and in marketing of these products or services.

Every week, we will choose a specific sector of the tech industry and investigate the technology enablers, the major players in the sector, competitive dynamics and future opportunities in the sector. The sectors covered include:

Calendar (each lecture below is an 90-minute lecture)

01. Introduction + Internet Industry Structure (Jan 17)
02. Cloud Computing (Jan 19)
03. Wireless/Cellular Markets I (Introduction + 3G/4G/5G) (Jan 24)
04. Wireless/Cellular Markets II (Platforms: iOS, Android) (Jan 26) (**Quiz 01 covers sessions 1-3**)
05. Big Data & data infrastructure (Jan 31)
06. Guest talk (Feb 02) (**Homework 01 due**)*
07. Intro to AI & Machine Learning (Feb 07 at noon) (**Quiz 02 covers sessions 4-6**)
Reading: Chap 04+05 of *A Human's Guide to Machine Intelligence* (uploaded on Canvas)
08. Generative AI and Business Applications (Feb 09)
09. Intro to Web 3 (limited focus on DeFi; more on applications in music/film/gaming) (Feb 14)
10. Decentralization and Custody (Feb 16) (**Quiz 03**)
11. Launching tech products/services (Feb 21)
12. Project Presentations (Feb 23)

Intended Audience and Prerequisites

Anyone interested in understanding the various technologies fundamental to business in a networked world. No prerequisite or technical background is assumed. Class lectures are built from the basics and are self-contained. Students with a limited technical background will find the course a useful primer on technology from a managerial perspective. Students with moderate to advanced technical backgrounds may find the course a useful survey of emerging technologies. The course is highly recommended for students with interest in any of the following areas: **entrepreneurial management, venture capital, new media, consulting/strategy, and product management/business development in the tech sector.**

Requirements and Grading

There are 4 parts that contribute to the final grade in the course. One of these is based on group work.

- 1) Project (Group)
25%. A group of 4 students can work on a class project. Students will select the semester project from one of 3 options.
- 2) 3 in-class Quizzes (Individual)
45%
- 3) Homework (Individual)
20%. Your answers should reflect your own thoughts on the subject and cannot be based on discussions with classmates. Homework submitted late (i.e. after they have been discussed in class) will not be graded. Unfortunately, I cannot help you make up missed homeworks through other assignments/readings. It is not easy to create new assignments for individual students. Please do not email the professor or TA regarding this.
- 4) Class participation
10%. To minimize subjectivity, class participation will be primarily (though not entirely) based on attendance. If you miss up to 2 sessions, there will be no penalty. We understand that things come up (interviews, weddings, fevers/flu) and everyone has a buffer of two 90-minute classes for this. You are NOT expected to notify the professor or TA about your absence. For every missed class beyond the first two, points will be deducted. If you miss more than a third of the classes, you will get 0% for class participation.

Guidelines for Project Presentations

1. No required length (slide limit). The reports will be judged on content.
2. Please prepare slides that can be read and interpreted independently by TAs and myself (i.e. they are not just for your presentations but also designed for independent consumption). I will evaluate the reports for the following (the latter two will be weighted more):
 - a. Quality of information gathered (“research”)
 - b. Structured information on your own (“writing; structure; logical presentation”)
 - c. Analysis (conclusions are well justified and based on sound logical reasoning).
3. On the last day, I will ask some teams to present their project (it is in your best interest to have 1 person present because time management is usually better achieved with one person presenting).
4. The goal of the presentation would be convey the basic idea in under 5 minutes. I realize this is insufficient time to showcase all the work you have done (☺), but the other option will be to have an additional class.
5. Additional details regarding the presentation slides and the presentation will be emailed later.

Grading Approach: All team members usually receive the same grade unless there is broad consensus among members of a team that effort has been disproportionate.