The Wharton School, University of Pennsylvania
Operations and Information Management Department
Enabling Technologies
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Course Description
The course provides a broad overview of what is 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) as well as the business drivers of technology in related decisions of firms, and to stimulate thought on new applications. The class provides a comprehensive overview of various emerging technologies and culminates in discussions of potential business impact of these technologies in the near future. 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 is going on in tech (ii) Understand how technology can enable the delivery of new products and create new markets.
Every week, we will choose a specific sector of the tech industry and investigate the technology enablers, the major players in the sector as well as competitive dynamics and future opportunities in the sector. The sectors covered include:

1/13
01 Intro and sneak preview of topics
02 What Are IT Networks?
1/27
03 Optical Networks
04 Access Networks, Data Center Networks
2/3
05 5G Networks
06 5G Business and Applications
2/10
07 CMOS/Semiconductor Industry
08 The Case of Huawei
2/17
09 3D Sensing/ LIDAR
10 IoT Devices and Networks
2/24
11 Energy Industry
12 Carbon Footprint
3/2
13 Electrical Cars
14 Autonomous Vehicles
3/16

15 Machine Learning (Hans-Peter Graf, guest speaker, NEC Lab USA, DH of Machine Learning Research)
16 Artificial Intelligence (Hans-Peter Graf)
3/23
17 Digital Identity (Guest speaker to be confirmed)
18 Biometrics and Identity (Guest speaker to be confirmed)
3/30
19 Cyber security I (guest speaker, to be confirmed)
20 Cyber security II (guest speaker, to be confirmed
4/6
21 Blockchain, Bit-Coin
22 Quantum Computing
4/13
23 Internet Advertising I (Lynn Wu guest speaker)
24 Internet Advertising II (Lynn Wu guest speaker)
4/20
25 Review of 5G/3D Sensing/IoT Projects
26 Review of 5G/3D Sensing/IoT Projects
4/27
27 Review of 5G/3D sSnsing/IoT Projects
28 Review of 5G/3D Sensing/IoT Projects

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

1) Homework assignment 25%
2) Midterm exam 25%
3) Group project 25%.
    a. A group of 4-5 students will work on this project. The goal is to come up with a new application in the space of 5G, IoT or 3D sensing. The projects will be reviewed and presented at the end of the semester.
4) Class participation and attendance 25%.