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

OIDD 314: Enabling Technologies

Professor: Lynn Wu
Office: 561 Huntsman Hall
Email: wulynn@wharton.upenn.edu

Teaching Assistant: Amandeep Singh
Email: amansin@wharton.upenn.edu

Teaching Assistant: Xinyu Ma
Email: xinyuma@seas.upenn.edu

Class Information

Class time and location: Tuesday and Thursday: 10:30am-12:00pm or 1:30pm-3:00pm
Office Hours:

Professor Wu: Tuesday, 4:30-5:30pm
TA: Amandeep Singh, TBD
TA: Xinyu Ma, TBD

Format:

The class will be taught virtually in blended approach using both synchronous and asynchronous teaching.

Course Description

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 for commerce (including disruptive technologies). The class provides a comprehensive overview of various emerging technology enablers and culminates in discussion of potential business impact of these technologies in the near future. No prior technical background is assumed and hence every effort is made to build most of the lectures from the basics. However, the Fall semester class will assume basic understanding of statistics and will focus more on big data analytics. Some assignments in the fall will involve data analytics using Python or R.

We will use lectures, class discussion, guest speakers, exercises and team projects to examine a variety of topics including: Artificial intelligence/machine earning, Google trends, online advertising, social networks, social media, people analytics and a variety of other topics. Fundamental economic principles will be illustrated using business case studies. 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.

Course Goals

1. To learn how to respond to new technologies as they arise
2. To understand the business value of artificial intelligence and business analytics
3. To know how to leverage Google and other online advertising platforms
4. To learn how to leverage emerging media to better communicate with stakeholders

Tentative Schedule of Sessions

DATE		SESSION	Due (at 10pm the day before class)
Tue 9/1	1	Introduction	
Thu 9/3	2	Economic Models I	
Tue 9/8	3	Economic Models II	
Thu 9/10	4	Competing in Analytics	
Tue 9/15	5	Google Trends I: Housing	Memo
Thu 9/17	6	Google Trends II: Race, Gender, Social Trends	
Tue 9/22	7	Data Analytics Overview	
Thu 9/24	8	Analytics Dojo	
Tue 9/29	9	GUEST LECTURE	Individual Project #1
Thu 10/1	10	IBM Watson/Deep Q/A	Group & Topic
Tues	11	Deep Learning	Memo
Thu 10/8	12	AI and Organizations, Labor	
Tue 10/13	13	AI and Innovation	Memo
Thu 10/15	14	AI and Decision-making	
Mon 10/20	15	AI Fairness	
Tue 10/22	16	Search Engines	
Tue 10/27	17	Search Advertising	Proposal slides
Thu 10/29	18	Internet Advertising	
Tue 11/3	19	Social Media Analytics	Memo
Thu 11/5	20	Enterprise Social Media	Individual Project #2
Tue 11/10	21	Project Proposals	
Thu 11/12	22	GUEST LECTURE	
Tue 11/17	23	Social & People Analytics	
Thu 11/19	24	Exam Review	
Tues 11/24		Exam	
Thu 11/26	25	Thanksgiving	
Tue 12/1	26	Final Project Presentation	
Thu 12/3	27	Final Project Presentation	

Tue 12/8	28	Final Project Presentation	Group Evaluation & Project write-up (Due 12/15)

Please check the class website before every class for announcements, assignments and schedule changes.

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, although basic statistics is helpful. Some assignments will require programing but instruction will be provided so you only need to modify the code. 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: consulting/strategy, and product management/business development, entrepreneurship and venture capital in the tech sector. The Fall semester will focus more on **big data analytics**.

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) Exam 20%

2) Memos 10% (Individual)
   There will be 4 memos in the class. The lowest memo grade will be dropped.

3) Individual Projects 20%
   There will be two individual projects (2x10%). Both require data analytics. Homework submitted late (i.e. after they have been discussed in class) will not be graded. Unfortunately, I cannot help you make up missed project 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 20%
   To minimize subjectivity, class participation will be primarily based on attendance. Two lowest participating grades will be dropped.

5) Project (Group) 30%
   A group of 4-5 students can work on a class project. The scope of the project can vary from being a data analytics project, business plan, a survey, or a case-based analysis of a problem. Sample projects from previous years will be posted on Canvas.

Undergraduate grades will be determined by the following scale.

A	92-100
A-	87-91
B+	82-86
B	77-81
B-	72-76
C+	65-71
C	60-65
C-	55-59
D	50-54

Guidelines for Project

Project Report

1. No required length (page limit). The reports will be judged on content.
2. 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 and logical presentation")
   c. Analysis (quantitative or based on sound logical reasoning).

Project Presentations

1. All teams must submit presentation slides as well.
2. On the last day, I will ask most of the teams to present the project.
3. The goal of the presentation would be to convey the basic idea under 25 minutes. You will also have a 5-minute Q&A following the presentation.
4. Additional details regarding the presentation slides and the presentation will be emailed later.

Grading Approach

There will be three components to the grades.

1. Presentation and final report assessment by the professor and TAs
2. Team presentation score from peers
3. Individual assessment of team members

As this is a group project, all team members will get the same points irrespective of the person who presents in the first two components. The third component is an individual score, to ensure that each team member has pulled sufficient weight for the team project.

Objective: The idea is to use the project to explore topics of significant interest to you (but ones we did not cover in class in great detail).

Reading Materials for the Course

All readings will be posted online (see course website for updates as we proceed).