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

OIDD 615: Operations Strategy, Spring 2010 Syllabus
[December 3, 2019. Subject to revision]

Course Instructor:
Professor Senthil Veeraraghavan
545 Jon M. Huntsman Hall, Tel: 215 898 0792
Email: senthilv@wharton.upenn.edu
Office Hours: Wednesday 10-12noon and by Appt.,

Course Classroom Time and Location:
Tuesdays and Thursdays
OIDD 615 005 (1030 am-1150 am)   JMHH 245
OIDD 615 001 (130 pm-250 pm)   JMHH 370
OIDD 615 003 (300 pm-420 pm)   JMHH 370

Course Teaching Assistants (TA):
Mr. Ronak Mehta.
Office hours: TBA

Course Website:

https://canvas.upenn.edu/courses/1487105

Course Description:
Operations strategy is about organizing people and resources to gain a competitive advantage in the delivery of products (both goods and services) to customers. This course approaches this challenge primarily from two perspectives: (1) how should a firm design their products so that they can be profitably offered; (2) how can a firm best organize and acquire resources to deliver its portfolio of products to customers. This course provides a foundation of analytical methods to make these high level choices, focusing on plan and execution. These methods give students a conceptual framework for understanding the linkage between how a firm manages its supply and how well that supply matches the firm's resulting demand.

This course is a mixture of both theory and class discussions. Both factors are important for a complete learning experience.

Pre-requisites: An interest in operations/quantitative understanding of business decisions. Some exposure to Statistics (what is covered in the first year Q1 is sufficient).

Classroom Device Policy:

In the past few years, I have implemented the following policy with very positive feedback from the students every year. My policy just predates its wide adoption in the MBA program.

o No electronic devices in class, unless specifically pre-announced and requested by your instructor.

o While I understand that everyone's personal learning needs/preferences vary, I have found the implementation of this policy is beneficial for (i) maximal collective learning through focus and extended deliberation, (ii) my teaching design, and (iii) setting norms when individual learning styles clearly disagree. Recent academic research also supports this approach. In fact, student feedback has largely been quite supportive.

o Curious about how such policy influences learning and retention

o http://mediashift.org/2014/09/why-clay-shirky-banned-laptops-tablets-and-phones-from-his-classroom/

o Here is a recent study that looked at tablets for note-taking. https://www.brookings.edu/research/for-better-learning-in-college-lectures-lay-down-the-laptop-and-pick-up-a-pen/

o I am actually fairly interested in Technology Operations. Nevertheless, I do not see the classroom device policy and our interests in technology to be in conflict.

o In fact, we will heavily use some of the latest classroom learning technologies (for example *Qualtrics, ForClass,* etc).

Classroom Expectations:

For transparency and clarity of rules, here are the classroom expectations. The expectations codified in the design are high. In fact, I am continually *amazed* at extraordinary folks who meet these expectations by managing their professional and academic responsibilities. The expectations have been designed with respect towards everyone's pursuit of progressing our learning goal, when we share the class time together.

o We will use seating charts. Given the brevity of quarter classes, this structure is principally to help me to know you better.
o Please be ready to participate at the start of the class session.
o Please do not use electronic devices (incl. phones, tablets) unless specifically asked by me.
o Please remain in the classroom during the *entire* session.
o Please bring up your questions to the entire class (i.e., no parallel discussions).

Course Grading

Each student's final numerical score for the course is based on the following items and weights:

- o Class Attendance, Class Preparation and Participation (30%)
- o Three Individual Assignments (30%)
- o Final exam (40%)

Your grade is based on your ranking across sections of the class, subject to MBA grading requirements. I expect roughly according to the following distribution: 12% A and A+, 21% A-, 33% B+, 21% B, 10% B-, 3% C+ or lower. This distribution may vary. A failing grade is received when class performance on a class component is particularly poor (for example, 35% or less correct answers on the final exam).

Class Attendance, Class Preparation and Participation Grades: (30%)

Class participation and qualitative reasoning is important to do well in class.

Class Attendance - 10%
- o The first session is mandatory. If you are on waitlist, you are encouraged to attend.
- o Late arrivals will be registered as absences. (However, you earn participation grades).
- o To allow for scheduled and unanticipated personal events at your end, the following policy is followed.
    - o 0-2 Late/Absences. 10 points. Missing upto 2 classes do not result in any penalty.
    - o 3-5 Late/Absences. 5-7 points.
    - o 6 or more Late/Absences. No points.
- o Be at your seat when the class session begins and stay through the class.
- o Please use your name tent in each class.

Case Preparation -10%:
- o On the days of case discussion, you answer a short poll that is due on Canvas by 9am. This due-time allows me to read your responses before class.
- o The questions are multiple-choice type or short answers.
- o "Incorrect"prep answers are not penalized. (In fact, they help with classroom learning).
- o By submitting the answers, you affirm that you are prepared to discuss the case in-class.
- o You should do case prep for at least 5 out of 7 discussions. You can miss up to 2 case preps without penalty. (See syllabus outline on Page 5 for due dates).

Class Participation – 10%

- o Class participation is scored based on the *consistency* in participation.
- o Be a good listener to others' comments. I will often ask you to add or respond to your colleagues' comments. `More Airtime' ≠ High Participation.
- o To improve equity and opportunities, I will call on students.

Individual Homework assignments: (30%)

- o There are three graded homework assignments. All assignments are weighed equally.
- o Assignments are due at 11:59pm EDT on the due date. Late assignments are not accepted; i.e., late assignments will receive zero credit.
- o Submissions must be submitted electronically through the Canvas course website.
- o Each student must complete his or her own assignment. However, to promote learning, students are allowed to discuss questions with other students. Use collaboration _judiciously_, and only for learning purposes.
- o No partial credit will be given.

Final exam: (40%)

- o The final exam is based on the complete contents of the course: analytical tools, lectures, in-class case discussions, etc.
- o The final exam is <u>open book - open notes</u> and contains both quantitative and qualitative questions.
- o Exam in on FRIDAY, MARCH 6, 9-11 AM.
- o The administration (and your instructor) is very strict about ensuring all students take the exam on the assigned date. Please mark your calendars! If you have a course conflict, resolve it before you begin the course.

Readings and Handouts

I will distribute key handouts in class and also post them on Canvas. I have also linked to the supplemental reading material on Canvas.

When should one read the class material?
- o Cases: Read _before_ class as preparation. Cases define the _minimum_ information necessary for class discussion.
- o Articles: Recommended. Read them to maximize your classroom learning experience and improve your class participation. Any relevant class discussion can be on the exam.
- o Text chapters: Read before or after the class session.

Recommended Text: Selected chapters from Cachon, G. P. & Terwiesch, C. _Matching supply with demand: An introduction to operations management._ Third Edition. 2012. Boston, MA: McGraw Hill.

These chapters are also available as a custom _Coursebook_ at the Penn Bookstore.

Notes:
- o The text readings listed in the syllabus follow the third edition.
- o If you are using earlier editions of the textbook, please note that there are many differences, including the chapter numbers.

Syllabus Outline

#	Date	DUE	Topic and Readings
1	Tue, Jan 21	Mini-prep	What is Operations Strategy? Forecasting under Uncertainty.
2	Thu, Jan 23		Betting on the Unknown – Newsvendor Model.
3	Tue, Jan 28	**9 AM Prep #1**	Applying the Newsvendor model for Demand planning. Case: Le Club Français du Vin.
	Wed, Jan 29	**11:59pm**	**Assignment #1**
4	Thu, Jan 30	**9 AM Prep #2**	Speculative and Reactive Strategies. Case: Sport Obermeyer.
5	Tue, Feb 4		Make to Stock vs. Make to Order Strategies. The Order Upto Model
6	Thu, Feb 6	**9 AM Prep #3**	Mass Customization and Product Design Case: Timbuk2
7	Tue, Feb 11		Operational Risk Management Strategies
8	Thu, Feb 13	**9 AM Prep #4**	Sourcing Case: Fuyao Glass America
9	Tue, Feb 18	**9 AM Prep #5**	Operations on the Internet, Clock Speed Case: Amazon
	Wed, Feb 19	**11:59pm**	**Assignment #2**
10	Thu, Feb 20	**9 AM Prep #6**	Revenue management: Pricing Strategies. Article: Uber
11	Tue, Feb 25	**9 AM Prep #7**	Service Operations and Managing/Motivating People Case: Trouble at Tessei
12	Thu, Feb 27		Automation & Course Review
	Thu, Feb 27	**11:59pm**	**Assignment #3**
	Fri, March 6	**9-11 am**	**Core Class Final Exam at JMHH F95 and G06.** Exam Date or Location _not_ subject to change. **Please Mark Your Calendars! Resolve your schedules to attend the exam.**

Course Ethics / Code of Conduct Summary

OPIM 615: Operations Strategy	Materials							People				
	Approved calculator	Laptop / other electronics	Summary sheet	Book / class notes/ Canvas materials	Past notes / summaries	Past exams / assignments	Outside materials	Learning team / approved work team	Other student(s) in same section	Student(s) in other sections (same term)	Wharton student not taking the class this term	Person outside of Wharton
Readings & Cases	A	A	A	A	A	A	A	W	W	W		
Assignments	A	A	A	A	A	A	A	W	W	W		
Final Exam Prep	A	A	A	A	A	A	A	W	W	W		
Final Exam	A		A	A	A	A	A					
In-Class	A		A	A	NA	NA	A					

A = Allowed material Shaded Cell = Not allowed NA = Not Applicable	W = Allowed to work together D = Discussion of general concepts and procedures is allowed but no sharing of specific answers. Shaded Cell = Not allowed

The information above covers many common situations but will not cover every circumstance. Remember:
The Wharton MBA Code of Ethics that you accepted requires, among other things, that you represent yourself and your work honestly, don't try to gain unfair advantage over other students, follow the instructor's guidelines and respect confidentiality of your work and the work of others.

Should you have questions, please contact your ethics liaison or professor.

Operations Strategy: Detailed Course Description

Session 615.1 Tuesday, January 21

What is Operations Strategy? Forecasting and Uncertainty.

I will set up the course motivation and discuss perspective we will take on Operations Strategy. We will then cover course expectations, and syllabus. We conclude with a framework of quantifying uncertainty for new and innovative products.

Readings: Text: Appendix A. Chapter 12 (sections 0 to 3).

Session 615.2 Thursday, January 23

Betting on the Unknown: Newsvendor Model

In this session, I will introduce the newsvendor model framework to make operational decisions under uncertainty.

Readings: Text, Chapter 12: sections 4-8.

Session 615.3 Tuesday, January 28

Newsvendor Applications.

In this session, we will use the newsvendor framework to solve for forecasting and procurement challenges for a wine catalog retailer.

Case: Forecasting and Procurement at Le Club Français du Vin

Case preparation:

- o   What are the costs to Le Club for ordering too many or too few bottles of a €10 wine?
- o   How should Le Club forecast demand for each wine? (Would you forecast differently than they do?)
- o   How would you choose an order quantity for each bottle of wine? Would it differ from the profit maximizing quantity recommended by the newsvendor model? If so, how would it differ and why?

<p style="text-align:center; color:red;">**Thursday, January 28 11:59pm EST**

Assignment #1 is due on Canvas.</p>

Session 615.4 Thursday, January 30

Speculative and Reactive Capacities

We study how to use early sales information to increase supply chain flexibility.

Reading: *Text, Chapter 13: sections 0-4.*

Case: *Sport Obermeyer (HBS, 9-695-022)*

Case preparation:

- o Contrast Sport Obermeyer's forecasting process with Le Club's forecasting process. Does their approach make sense for their market? Why or why not?
- o What is the value of having two opportunities to make a production decision?
- o Look at Exhibit 10. Which styles should be produced in the first production run and where should they be produced (Hong Kong or China)? (Give qualitative arguments.)
- o How would you modify their current system to better match supply to demand?

Session 615.5 Tuesday, February 4

Make to Stock vs. Make to Order

This session we discuss two operational approaches: Make to stock and Make to Order. We will introduce a *framework* to understand which business process to choose based on how operational parameters align with market demand.

Reading: *Skim Text, Chapter 14.*

Session 615.6 Thursday, February 6

Make to Order: Mass Customization and Assemble to Order

This session explores the pros and cons of this strategy and also discusses issues involved in outsourcing of manufacturing operations to low-cost countries.

Case: Where in the World is Timbuk2? Outsourcing, Offshoring, and Mass Customization. Wharton Case.

Case Preparation Questions:

- o What channels does Timbuk2 sell through and which one is the most profitable?
- o How should Timbuk2 go about deciding which mass-customization options to offer customers? Brennan talks about a very vague process based on management intuition. For instance, discuss the analysis for different buckle vs. changing the dimensions of panels?
- o What are the costs and benefits of moving production to China? If so, what are the issues? Also, think about the need for San Francisco factory and its utilization, based on outsourcing decision and inventory needs.

Session 615.7 Tuesday, February 11

Managing Risk in Operations

This session explores several operations strategic tools for reducing and hedging uncertainty.

Reading: *Text, Chapter 15*

Session 615.8 Thursday, February 13

Global Supply Chains: Sourcing, Insourcing and Offshoring.

We examine Fuyao Glass Company's decision to locate a production facility in the US, to explore (i) location choice (ii) labor arbitrage and (iii) structuring global supply chains.

Case: Fuyao Glass America: Sourcing Decision

(Related: American Factory. Documentary Film 2019).

- o Look at bill of materials in Exhibit 16. Why are percentages for each category so different for the Ohio Factory versus the one in Tianjin?
- o Think about Risks and Opportunities for each of factors.
- o If you were the factory manager in Ohio (or Tianjin) and you wanted to be the source, what would you do?
- o What should Wen Li recommend to the chairman?

Session 615.9 Tuesday, February 18

Internet Business Operations

Case: Amazon.com Trickle to Torrent (Wharton Case).

Case Preparation:

Think about following questions, focusing on the excel sheet on the course Canvas.

- o Discuss the complexity associated with Amazon's fulfillment process. Specifically, how does Amazon tackle product variety?
- o Think about back-end technology costs of selling on the internet. Are there savings from scale? How has Amazon gone about scaling their size of their business? What are Amazon's prospects going forward? Specially, examine (in 50 words)
  - o Amazon's Physical store strategy
  - o Explore Amazon's challenges in the digital space.
- o Make the bear case. What are the key global growth challenges for Amazon?

Wednesday, February 13, 11:59pm EST

Assignment #2 is due on Canvas.

Session 615.10 Thursday, February 20

Pricing and Revenue Management

In this session, I will introduce and discuss Operational Strategies in markets with expensive fixed capacities and volatile demand. We will cover Revenue Management concepts and implementation challenges, and consider operational strategies using (dynamic) pricing. We will discuss ramifications of share economy and gig-labor.

Reading: Text, Chapter 16

Article: Uber

Prep Questions: TBA. See Canvas.

Session 615.11 Tuesday, February 25

Service Operations: Motivating Teams and Employees

In this session, we will discuss service economies and explore how to think about motivating teams to make service jobs meaningful.

Case: Trouble at Tessei

Prep Questions: TBA. See Canvas.

- o   Answer the prior job related question on Canvas.
- o   Can customer service be "efficient"?
- o   Describe the last poor service experience you had. How could the firm have efficiently addressed your problem?

Session 615.12 Thursday, February 27

Course Review.

We will explore the impact of Automation and review Course Concepts.

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Thursday, February 27 11:59pm EST

Assignment #3 is due on Canvas.

Final Exam

March 6, Friday 9AM – 11 AM (open notes, open book)

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