

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

**OIDD 615: Operations Strategy**

**Spring 2020 Q4 Course Syllabus**

**Professor** Ken Moon  
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Office Hours: Mondays 3-5pm

**Lectures** Section 004, Mondays and Wednesdays, 10:30am-12:00pm, JMHH 340  
Section 006, Mondays and Wednesdays, 12:00pm-1:30pm, JMHH 340  
Section 002, Mondays and Wednesdays, 1:30pm-3:00pm, JMHH 340

**Final Exam** Friday, May 8, 3:00pm-5:00pm, Location TBD

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See course website for TA office hours

**Course Website**  
[https://canvas.upenn.edu/courses/\[TBA\]](https://canvas.upenn.edu/courses/[TBA])

**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. To be able to make intelligent decisions regarding these high-level choices, this course also provides a foundation of analytical methods. 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 and a quantitative understanding of business decisions. Some exposure to statistics (what is covered in the first year Q1 is sufficient).

## **Classroom Expectations**

For transparency and clarity, here are the classroom expectations. The expectations codified in this design are high. Nevertheless, I have been *amazed* at the extraordinary folks who have met and continue to meet these expectations by managing their professional and academic responsibilities. The expectations have been designed with respect towards everyone's pursuit of our learning goals when we share class time together.

- We will use seating charts. Given the brevity of quarter-long classes, your assigned seat principally serves to help me get to know you better.
- Please be ready to participate at the start of each class session.
- Please do not use electronic devices unless specifically asked by me. This includes phones, laptops, and tablets.
- Please remain in the classroom during the *entire* session.
- Please bring up your questions to the entire class (i.e., no parallel discussions).

## **Electronic Device Policy**

- No electronic devices in class, unless specifically pre-announced and requested by me.
- While I understand that everyone's personal learning needs / preferences vary, I have found that implementing this policy is beneficial for (i) maximizing our collective learning through focus and extended deliberation, (ii) the teaching design of the course, and (iii) setting norms when individual learning styles clash. Recent academic research also supports this approach, and student feedback has been largely supportive.
- Curious about how such a policy may help?
  - <http://www.pbs.org/mediashift/2014/09/why-clay-shirky-banned-laptops-tablets-and-phones-from-his-classroom/>
  - <https://www.brookings.edu/research/for-better-learning-in-college-lectures-lay-down-the-laptop-and-pick-up-a-pen>
- While I am actually quite interested in the use of technology, I do not perceive the electronic device policy and our interests in technology to be in conflict. In fact, we will use some of the latest classroom learning technologies (e.g., ForClass).

## **Course Grading**

Your final numerical score for the course is based on the following items and weights.

- Class Attendance, Case Preparation, and Participation (30%)
- 3 Individual Homework Assignments (30%)
- Final Exam (40%)

Your final grade is based on your ranking across sections of the class, subject to MBA grading requirements. The grade distribution is expected to roughly follow: 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 performance on a component is particularly poor (for example, 35% or less correct answers on the final exam).

### *Class Attendance, Case Preparation, and Participation (30%)*

Each of the following 3 components is weighted equally.

#### *Class Attendance:*

- To allow for exploration of classes and for scheduled / unanticipated personal events, missing (or being late to) up to 2 classes does not result in any penalty.
- My expectation is that you will be at your seat when the class session begins and stay throughout the class. Hence, late arrivals will be registered as absences (though you may still earn participation credit).
- For fairness to all students, I will only excuse absences for which I receive an email from the MBA Program Office.

#### *Case Preparation:*

- Case preparation consists of your responses to the case prep questions, which are collected via the ForClass tool on Canvas before class. You may submit them as late as 5am on the day of the class session.
- These questions are multiple-choice or short-answer format. To enhance your learning, the syllabus typically lists more questions than you are asked to respond to on ForClass.
- I will use your answers to guide our in-class discussions, so well-reasoned but incorrect answers are not penalized.
- By submitting the answers, you affirm that you are prepared to discuss the case.
- You should submit case prep responses for at least 5 out of the 6 cases we will be discussing. Thus, you can miss up to 1 case prep without penalty.

#### *Participation:*

- At the minimum, **classroom expectations** should be met (see page 2).
- Class participation is scored based on the consistency of participation, your continued engagement in discussions, and finally the degree to which your comments/questions contribute to learning in case discussions and lectures.
- Be a good listener to others' comments, too: 'More Airtime' ≠ High Participation.
- To improve participation opportunities, I reserve the right to call on students. Class preparation is necessary to do well in this course.

### 3 Individual Homework Assignments (30%)

- There are 3 graded homework assignments. Each assignment is weighted equally.
- Assignments are due at 11:59pm ET on the due date. Late assignments are not accepted; i.e., late assignments receive zero credit.
- Submissions must be submitted electronically through Canvas.
- 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.
- No partial credit will be given.

### Final Exam: (40%)

- The final exam is based on the complete contents of the course: analytical tools, lectures, in-class case discussions, etc.
- The final exam is an open book - open notes exam with a mix of quantitative and qualitative questions.
- The administration (and your instructor) is very strict about ensuring that all students take the exam on the assigned date. Please mark your calendars!

## Course Materials

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

### *When should we read the class material?*

- Cases: Read *before* class as preparation. Cases define the *minimum* information necessary for class discussion. Cases are available via Study.net.
- Articles: Recommended. Read to maximize your classroom learning experience and improve your class participation. Any relevant class discussion can be on the exam.
- 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*. 4th Edition. 2019. Boston, MA: McGraw Hill. These chapters are also available as a custom coursebook at the Penn Bookstore.

Note: The text readings listed in the syllabus follow the 4th edition. If you use the 1st, 2nd, or 3rd edition, please note that there are many differences, including chapter numbers.

## Course Ethics / Code of Conduct Summary

	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
OIDD 615: Operations Strategy											
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 <a href="#">Wharton MBA Code of Ethics</a> 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.											

## OIDD 615: Class Sessions and Schedule

Class #	Date	Topic	Readings and Assignments Due
1	Mon 3/16	<b>What Is Operations Strategy? Thinking about Uncertainty</b>	Text: Appendix A, Chapter 14 (sections 0-2, 6)
2	Wed 3/18	<b>Betting on the Unknown: Newsvendor Model</b>	Text: Chapter 14 (sections 3-5, 7)
3	Mon 3/23	<b>Newsvendor Applications: Managing Biases in Operational Decisions</b>	Case: Forecasting and Procurement at Le Club Français du Vin <b>Due: Case prep by 9am</b>
4	Wed 3/25	<b>Second Chances: Speculative and Reactive Strategies</b>	Case: Sport Obermeyer, Ltd. Text: Chapter 15 <b>Due: Case prep by 9am</b>
	Thu 3/26	<i>Assignment #1 Due by 11:59pm</i>	
5	Mon 3/30	<b>More of Less or Less of More: Make to Stock v. Make to Order Strategies</b>	Text: Chapter 16
6	Wed 4/01	<b>Off-shoring and In-sourcing: Sourcing Strategies</b>	Case: Where in the World Is Timbuk2? Article: Managing new product development and supply chain risks – the Boeing 787 case <b>Due: Case prep by 9am</b>
7	Mon 4/06	<b>Managing Risk in Operations</b>	Text: Chapter 17 Article: Predicting holiday sales poses issues for Lego
8	Wed 4/08	<b>Technology: Product Design and Clockspeed</b>	Case: Hewlett-Packard Company DeskJet Printer Supply Chain Article: Dell goes private <b>Due: Case prep by 9am</b>
	Thu 4/09	<i>Assignment #2 Due by 11:59pm</i>	
9	Mon 4/13	<b>Operations on the Internet: Online Strategies</b>	Case: Online Book Retailing: Operational Strategies (Amazon) Article: Why would Amazon want to be the new Barnes and Noble? <b>Due: Case prep by 9am</b>
10	Wed 4/15	<b>Revenue Management: Pricing Strategies</b>	Text: Chapter 18
11	Mon 4/20	<b>Coordination and Information Sharing Strategies</b>	Case: Supply Chain Management at W'Up Bottlery (A) and (B) Text: Chapter 19 <b>Due: Case prep by 9am</b>
12	Wed 4/22	<b>Course Review</b>	<i>Assignment #3 Due by 11:59pm</i>
	Fri 5/08	<b>Final Exam, 3pm-5pm (Location TBA)</b> Exam Date or Location <u>NOT</u> subject to Change. <b>Please Mark Your Calendars!</b>	

## OIDD 615: Session Descriptions

### Session 615.1. Introduction and Thinking about Uncertainty

This session motivates the course and introduces students to some of the perspectives we will take on operations strategy. We then cover course expectations and elements from the syllabus. We conclude with a framework for quantifying uncertainty for new and innovative products.

*Text:* Appendix A, Chapter 14 (sections 0-2, 6)

### Session 615.2. Betting on the Unknown: Newsvendor Model

This session introduces a framework to quantify operational risk. Specifically, we discuss the newsvendor model, which we use in situations in which there is one ordering opportunity while facing uncertain demand. We discuss how it can be used to calibrate operational performance.

*Text:* Chapter 14 (sections 3-5, 7)

### Session 615.3. Newsvendor Applications: Managing Biases in Operational Decisions

This session explores applications of the newsvendor framework. We first explore the challenges of procurement for a wine catalog retailer. We then explore decision-making biases and discuss how managers can use optimal decisions to correct for biases.

*Case:* Forecasting and Procurement at Le Club Français du Vin

*Case Preparation:*

- What is the overage cost incurred by Le Club for ordering one bottle too many of a €10 wine? What is the underage cost incurred by Le Club for ordering one bottle too few of a €10 wine?
- How should Le Club forecast demand for each wine? Would you use a forecasting process different from Le Club's?
- 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?

### Session 615.4. Second Chances: Speculative and Reactive Strategies

This session studies how early sales information can be used to increase supply flexibility.

*Case:* Sport Obermeyer, Ltd.

*Case Preparation:*

- Contrast Sport Obermeyer's forecasting process with Le Club's forecasting process. Does their approach make sense for their market? Why or why not?
- What is the value of having two opportunities to make a production decision?
- Look at Exhibit 10. Which styles should be produced in the first production run? (Choose up to 5.) Why did you choose these styles to produce first? In addition, where (Hong Kong or China) should they be produced, and why?
- How would you modify their current system to better match supply to demand?

*Text:* Chapter 15

**Assignment #1 Due on Canvas by March 26, 11:59pm ET**

### **Session 615.5. More or Less or Less of More: Make to Stock v. Make to Order Strategies**

In this session, we discuss two operational approaches: make to stock and make to order. We introduce a framework to understand which operational approach to choose based on how operational parameters align with market demand.

*Text:* Chapter 16

### **Session 615.6. Off-shoring and In-sourcing: Sourcing Strategies**

This session explores the pros and cons of different sourcing strategies as they relate to mass customization. We discuss issues involved in the outsourcing of manufacturing operations to low-cost countries.

*Case:* Where in the World is Timbuk2?

*Case Preparation:*

- What channels does Timbuk2 sell through, and which one is the most profitable?
- How should Timbuk2 go about deciding which mass customization options to offer customers? Brennan talks about a very vague process based on management intuition. Let's get specific. For example, would you offer changing the dimensions of panels as a choice to customers? Explain why or why not.
- What are the costs and benefits of moving production to China? What are the issues? Think about the need for the San Francisco factory and its utilization, based on outsourcing decisions and inventory needs.

*Article:* "Managing new product development and supply chain risks – the Boeing 787 case."

### **Session 615.7. Managing Risk in Operations**

This session explores several operations strategies for reducing and hedging uncertainty.

*Text:* Chapter 17

*Article:* "Predicting holiday sales poses issues for Lego."

### **Session 615.8. Technology: Product Design and Clockspeed**

We discuss how operational strategies interact with product design and industry clockspeed. We focus on the challenges of adopting new strategies in evolving markets, particularly for technology firms, using HP and Dell as examples.

*Case:* Hewlett-Packard Company DeskJet Printer Supply Chain (A) and (B)

*Case Preparation:*

- What should HP's operational strategy be? Should HP consider air shipments to Europe instead of ocean shipping? Should HP consider a "localize remotely" strategy as discussed in the (B) case?
- Discuss the operational implementation issues that you see for your suggested strategy. What could change the final decision?
  - Note: You can make the following assumptions: HP seeks a 99% in-stock probability, orders weekly, and their lead times are 5 weeks by sea and 1 week by air from Vancouver to Europe. The marginal cost of the product is \$250 and their inventory holding cost is 25% per year. Shipping via sea costs \$5 per printer, whereas air freight costs \$15 per printer.
- Explore reasons for Dell's performance in the recent decade.
- What are Dell's options for operational strategies going forward? Specifically, explore Dell's future in tablet markets and enterprise support.

*Article:* "Dell goes private."

**Assignment #2 Due on Canvas by April 9, 11:59pm ET**

### **Session 615.9. Operations on the Internet: Online Strategies**

Internet retailing requires less inventory and retail space than brick-and-mortar retailing. However, internet retailing introduces additional costs. We compare these two models from an operations perspective.

*Case:* Online Book Retailing: Operational Strategies (Amazon)

*Case Preparation:* Use the case facts as background reading and think about the following questions, focusing on the exhibits and the Excel sheet on Canvas.

- For historical reasons, the Excel sheet starts off comparing Barnes and Noble with Amazon. List some companies that you would compare Amazon to now.
- Discuss the complexity associated with Amazon's fulfillment process. Specifically, how does Amazon tackle product variety?
- What are Amazon's prospects going forward? Specifically, in 50 words or less,
  - Why is Amazon exploring opening physical stores?
  - What are the advantages (and challenges) for Amazon in buying Whole Foods?
  - What are some of Amazon's challenges in the digital space?
- What are the key global growth challenges for Amazon? To compare, explore [www.alibaba.com](http://www.alibaba.com), [www.flipkart.com](http://www.flipkart.com), and [www.redmart.com](http://www.redmart.com).

*Article:* "Why would Amazon want to be the new Barnes and Noble?"

### **Session 615.10. Revenue Management: Pricing Strategies**

In this session, we discuss operational strategies in markets with expensive fixed capacities and volatile demand. We cover revenue management concepts and implementation challenges, and consider operational strategies using (dynamic) pricing. In particular, we focus on how to integrate consumer behavior into operational decisions, so that pricing products and planning capacities can be done optimally.

*Text:* Chapter 18

*Article:* Uber

### **Session 615.11. Coordination and Information Sharing Strategies**

In this session, we discuss operational coordination issues in developing economies, focusing on a bottling plant in India. To conclude, we discuss the bullwhip problem and solutions to coordination issues.

*Text:* Chapter 19

*Case:* Supply Chain Management at W'Up Bottlery (A) and (B)

*Case Preparation:*

- Why does Rajat Mehra want to implement a VMI system in the W'Up supply chain?
- What are the biggest obstacles to implementing a VMI system?
- What should Mehra's team do next? What suggestions do you have for an implementation of VMI throughout Coca-Cola's Indian supply chain?

### **Session 615.12. Course Review**

We will review course concepts and material in preparation for the Final Exam.

**Assignment #3 Due on Canvas by April 22, 11:59pm ET**

**Final Exam on May 8, 3:00pm-5:00pm ET (Location TBA)**