

OIDD 611: Operations Management: Quality and Productivity

Faculty Contact Information

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Course Timing

The course will begin Wednesday, September 2 and will consist of 12 class sessions.

The three sections of the course will meet at 9:00 am, 10:30 am, and 1:30pm respectively. The average live class time is 50-60 minutes per session (see below).

Course Format

Due to the Covid-19 pandemic, the class will be delivered online only using a blend of videos to be watched asynchronously (1/3 of the time) and a set of live session (2/3 of the time). Students are expected to spend about seven hours a week on the course. This includes:

- Watching an average of three videos of about 8-10 minute duration before each class (these are averages and the exact number might vary from day to day) => 30 minute preparation per class.
- Preparing an average of one case a week. There is no need to submit a formal case write-up, but students are expected to spend about 1h on case preparation for each case. Detailed instructions on how to prepare each case will be sent out in advance.
- Class time (live) will take about 50-60 minutes per class. Classes will be delivered through BlueJeans and students should expect to spend about 15-20 minutes per class in break-out mode. Again, these numbers are averages, which means that some classes will be done faster and some will take longer.
- Time for reading, reviewing, and preparing for homework assignments and the final exam (about two hours per week, on average).

Canvas will be used to keep track of readings, assignments, and videos.

Course Description

Matching supply with demand is an enormous challenge for firms: excess supply is too costly, inadequate supply irritates customers. In the course, we will explore how firms can better organize

their operations so that they more effectively align their supply with the demand for their products and services. Throughout the course, we illustrate mathematical analysis applied to real operational challenges – we seek rigor and relevance. Our aim is to provide both tactical knowledge and high-level insights needed by general managers and management consultants. We will demonstrate that companies can use (and have used) the principles from this course to significantly enhance their competitiveness.

In this course, the emphasis is on the design of business processes to maximize productivity and to achieve world-class quality. The course details different kinds of business processes and explains how to measure key process parameters like capacity and lead time. The course also covers process improvement and examines classic ideas in quality management and the Toyota Production System.

Grading

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

Homework assignments (20% of final grade). Each student must turn in his or her own assignment through Canvas. We encourage students to attempt to complete the assignments on their own. However, to promote learning, students are allowed to discuss each assignment with other students taking OIDD611 in the same quarter.

Class participation (20% of final grade). The class participation score is based on class contributions throughout the entire course. To contribute during case discussions, students must prepare cases carefully before coming to class and be ready to discuss and defend recommended actions.

Final exam (60% of final grade). There is a final exam based on the contents of the course: analytical tools, case discussions, lectures, etc. The format of the final exam is open book and open notes.

Ethics Matrix

OID 611 Operations Management: Quality and Productivity	Materials							People				
	Approved calculator	Laptop / other electronics	Summary sheet	Current book / class notes	Past notes / summaries	Past exams / assignments	Internet content / other 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
Homework	A	A	A	A				W ⁽¹⁾	W	W		
Cases	A	A		A				W ⁽²⁾	W	W		
Final Exam	A ⁽³⁾		A	A								
	A = Allowed material Shaded Cell = Not allowed							W = Allowed to work together D = Discussion of general concepts and procedures is allowed but no sharing of specific answers. Shaded Cell = Not allowed				
Other comments:												
(1) Students are encouraged to test their understanding of the material by working on the homework individually. Once the student has diagnosed his/her skill level, communication is allowed (2) Students are encouraged to collaborate when preparing for cases or working on the end-of-chapter problems (3) You are not allowed to pre-program any macros or spreadsheet. To state the obvious, you are also note allowed to interact with fellow students during the exam time												
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.												

Course Text, Readings and Handouts

All lectures will follow the textbook by Cachon and Terwiesch very closely:

Cachon, Gerard, Christian Terwiesch, *Matching Supply with Demand: An Introduction to Operations Management*, 4th edition, McGraw Hill (older editions and the international editions are cheaper to purchase and cover all relevant material)

Though the book is a recommended reading, it is not required. All definitions and formula will be provided in the slide decks.

Cases will be made available via Canvas / Study.net.

Use of Electronic Devices

The following states our policy with respect to the usage of electronic devices during class time and during the final exam.

In class, students are allowed to use laptops and tablets only for work directly related to the class (no email, no other work). We will use BlueJeans to stay in touch during the live sessions and students are expected to follow along and be ready to participate

Beyond the BlueJeans screen sharing and the Canvas learning management system, a Google Doc Spreadsheet will be used to quickly organize student input.

Session overview

There are 12 sessions in this course and two homework assignments. Cases and exercises are taken from a broad range of industries, including financial services, hospitality, retailing, manufacturing, and healthcare.

Class	Date	Videos	Other prep	Live session	Live Lecture
1	2-Sep	Introduction 1	Preclass survey, read Mortgage Case	Mortgage exercise	Efficiency frontier, Three system inhibitors
2	9-Sep	Flow 1	Map out your mortgage process	Review mortgage exercise performance	Process lecture (bottleneck and capacity)
3	14-Sep	Flow 2..4, Subway video	WTP drivers for a sandwich restaurant	Subway case	Flow lecture
4	16-Sep	Little 1	Inventory and cogs of your favorite retailer	Inventory turns discussion	Little 2 and 3
5	21-Sep	Multi 1..4	Submit performance measures	Pauld Downs	KPI lecture
6	23-Sep	Lean 1..4	Capital One case	Capital One	
7	28-Sep	Wait 1..3	Radiology case (A)	Radiology exercise	Tq lecture, Improvement strategies
8	30-Sep	Wait 4..6	Call center case	Call center	
9	5-Oct	Loss 1,2	Radiology case (B)	Radiology exercise	Platforms, Uberization
10	7-Oct	Quality 1..3		Six sigma analysis	Innovation vs six sigma
11	12-Oct	Quality 4..6	Toyota case	Toyota case	
12	14-Oct	Conclude		How to prepare for final exam	Review / exam prep
Homework Due dates					
1	28-Sep	Sessions 1..6			
2	19-Oct	Sessions 7..12			

Some of the detailed session planning might change. Please check the Canvas for the final assignments.

Some Personal Thoughts on the Pandemic

The Covid Pandemic has caused a major damage to our life as a community. Rather than coming together in Huntsman Hall, we find ourselves sprinkled all over the world. And, though we are connected through the Internet, time zones, bandwidth, family obligation, health, and many other variables all cause friction and have the potential to reduce our learning experience.

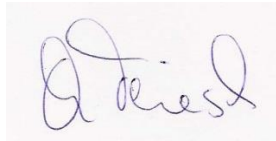
I have spent the better time of this summer to redesign the class for online delivery. This includes producing many hours of videos, building animations, replacing the many inclass exercises that are the signature of this class into online exercises, and much more.

No matter how hard we work, there is nothing like coming together in the class room. But, that doesn't mean we shouldn't try. In addition to the class sessions, I intend to schedule regular sessions for office hours and social time. This is time that we can talk about the course,

Operations Management, and life more broadly. Based on my research and personal interests, a preliminary list of topics includes:

- Healthcare delivery
- COVID-19
- Electric mobility
- German Economy and Politics
- Innovation and disruption
- Connected Strategy
- Working for a business school
- Bike commuting in Philadelphia
- How to train for an Ironman

If you have any suggestions on how to improve the learning experience in the course, please contact me as soon as possible.

A handwritten signature in blue ink, appearing to read "A. Krish". The signature is written in a cursive style with a large initial "A" and a long horizontal stroke.