

**OPIM 220: Introduction to Operations Management**  
Tuesday/Thursday 1030am-1200pm.

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Course Outline:

This course introduces basic concepts of operations management and application of the same in business practice today. We will examine the theoretical foundations of operations management and how these principles or models can be employed in both tactical and strategic decision making in firms. Topics covered in detail are forecasting techniques, planning under deterministic and uncertain demand, operations planning and scheduling, queuing theory, service operations management, newsvendor models, risk pooling strategies in firms, capacity and revenue management, and supply chain coordination. We will conclude by discussing how supply chains evolve under technological change.

This course is highly recommended for students:

- Interested in majoring in operations management and who plan to consult in services industries
- Students majoring in other areas and curious about perspective of Operations Management in marketing, accounting, health care, sports industries and financial services.
- Interested in applying some broad operational ideas when consulting on current business problems.
- Interested in learning how businesses plan their supply chains for a variety of products. (For instance, how firms deal with obsolescence due to new emerging technological innovations in the marketplace).
- Majoring in engineering disciplines to understand the operational issues involved in designing or producing new products and services.

This is an introductory course for students interested in OM track. This course can be followed by other Operations courses in Service Operations Management, Process management, Retail Supply Chain Management or other elective courses in OPIM. Even if you do not plan to major in operations management, this course can be highly useful to you primarily because it provides an overview of theory and practice that provides a different perspective on intriguing business challenges and opportunities of the day. The underlying

theory we learn in this course can be applied to various business contexts that at first seem unrelated to operations management.

Course will be built on theoretical models, but we will analyze significant number of business cases and applications. These cases and articles will provide supportive structure to the theory developed in the course. The cases will demonstrate how real world operations problems can be approached, modeled, and solved in a knowledgeable fashion.

### Course Materials:

Course material will be mostly drawn from two books: *Production and Operations Analysis* by Nahmias; *Matching Supply with Demand, An Introduction to Operations Management* by Cachon and Terwiesch. The *specifically* designed course book contains chapters from the above mentioned textbooks and most of the reading cases are added at the end of the course book. Using class notes and supplementary handouts, I will build on the foundational models and relate it to the present operations practice. We will also have case discussions that are based on the concepts that are taught in the course; this will help address the issues of practice and applications of the concepts covered in class.

### Instructor Office Hours:

My office hours are scheduled on Tuesdays 3-5pm. However as a faculty interested in undergraduate knowledge development, I follow an *open door* policy. This implies that you are welcome to visit my office anytime when I am in my office. Preferably, you could email me before coming to make sure if I am in my office.

### Teaching Assistant Contact Details & Office Hours:

Pnina Feldman  
[pninaf@wharton.upenn.edu](mailto:pninaf@wharton.upenn.edu).  
532.3 Jon M Huntsman Hall  
Phone: (215) 898 9814.

Pnina's office hours will be Thursdays 3-5pm throughout the semester. Exact location of the office hours will be announced in class. We will plan some recitations/help sessions with the TA (also review sessions before exams). The schedule, location and duration of these help sessions will be decided based on the consensus that emerges from class discussions to ensure that schedule works out best for all for the class.

### Course website:

The course website will be on Wharton **webCafé** .  
<https://webcafe.wharton.upenn.edu/eRoom/opim/220-sp08-1>

If you have difficulty accessing the webcafé, please do let me know as soon as you can. All the lecture notes and slides will be posted on webcafé. Further, from time to time, I will also post interesting articles from magazines and journals on the webcafé and discuss them in class (after due notification through email). This will help us discuss and keep abreast of current innovative supply chain ideas. Students are encouraged to send interesting articles to me; I shall post them on webcafé (or discuss them in class) thus recognizing the student's effort. The course webcafé will serve as the course repository for submitted articles, class slides, class communications etc.

### Course Grading Policy:

Each student's final numerical score for each course is based on the following components (with % weights): Assignments (30%), Class participation (12.5%), Two case write-ups (7.5%), Final exam (30%), Midterm exam (20%). A student's grade is based on the ranking of the student's overall numerical score in the course. The grades are in general relative, although there are minimal absolute standards for passing the course. Therefore, minimal performance requirements apply. Please refer Wharton undergraduate handbook for code of conduct and guidelines.

### Individual Problem Sets (Assignments 30%):

The problem sets will focus to ensure that students understand both the basic and advanced concepts taught in the class. It is primarily a way of learning the concepts well and also preparing oneself for the midterm and final exams. All students are encouraged to make ample use of the office hours and contact the Instructor/TA to resolve any doubts or to clear the concepts.

There will be 6 assignments adding up to 30% of the course grade. All individually solved assignments are due on the assignment due date *before* the class begins. Late submissions are strictly not accepted. (If you need more time to turn in your assignment with no penalty, please talk to the instructor and get prior permission for doing so). Electronic submissions will not be accepted.

### Class Participation: (12.5%)

Informed discussions are critical to the learning process; they make the learning process more interesting and enjoyable for all in the class. Students are encouraged to volunteer substantive comments freely. On my part, I shall enable a friendly classroom atmosphere that permeates and promotes good discussion. I perceive quality of comments to be an important factor in enhancing classroom experience. While the evaluation of class participation by its very nature is slightly subjective, I will ensure it to be fair. Following are some (clearly not exhaustive) salient points that characterize good participation. Foremost, the participant is a good listener and pays attention to what was said before and what other participants have to say. He or she makes points relevant to the discussion and links them to others' comments. The

student is willing to analyze the point rigorously and also receptive to any evidence to the contrary from other students.

Not every comment needs to be substantive; willingness to participate is also very important and it enhances the learning for everyone. We will do a class of interesting cases covering the entire gamut of product variety: from *video rental* industry and *cookie* making to *sports business* and *high tech electronics* industry. This will provide ample opportunity for students with diverse backgrounds to participate throughout the course.

Three Group Case write-ups (7.5%):

Students can form teams of 2-3 and submit a two-page case write up on the day of the case discussions. (If any student would like to work on case write ups individually, please do let me know in advance). You can choose to do this for any *three* cases that we cover in class. [This is to facilitate interaction between the students and create ample preparation for the case discussion in the class room]. Cases are required reading: Everyone is expected to be prepared for all cases, regardless of whether their team chooses to submit a report for the case or not.

Midterm and Final Exams:

Midterm exam will be a closed book in-class exam and will count towards (20%) of the grade. However, the Final exam will also be an open book exam and shall account to (30%) of the course grade. The exact location and duration of the exam will be announced during the course.

**OPIM 220 – Spring 2008 - Class Sessions**  
**[Tentative, Check web café or class slides for current updates].**

Session #	Date	Topic and Readings	Assignment Due
1	Thu, 1/17	Introduction	
2	Tue, 1/22	Statistics Reviewer.	
3	Thu, 1/24	Forecasting - Stationary Series	
4	Tue, 1/29	Forecasting – Trend and Seasonality.	
5	Thu, 1/31	Deterministic Demand Planning I	1
6	Tue, 2/5	Deterministic Demand Planning II	
7	Thu, 2/7	Discounts, Multi product inventory planning.	
8	Tue, 2/12	Service Operations – Queuing Theory I	
9	Thu, 2/14	Service Operations – Queuing Theory II	2

10	Tue, 2/19	Little's Law – Applications of Queuing Models.	
11	Thu, 2/21	Project Scheduling [Pert & CPM].	
12	Tue, 2/26	Critical Path – Case: Kristen's Cookie Company.	
13	Thu, 2/28	JIT manufacturing – Toyota	
14	Tue, 3/4	Quality, Reliability issues in Operations Management.	
15	Thu, 3/6	Recap & Mid Term Revision	<b>3</b>
		Spring Break	

16	Tue, 3/18	Managing Inventories under Uncertain Demand	
17	Thu, 3/20	Newsvendor Model.	
18	Tue, 3/25	Mass customization and make-to-order.	4
19	Thu 3/27	Quick response with reactive capacity Case: Sport Obermeyer	
20	Tue, 4/1	The Order Up-to Model	
21	Thu, 4/3	Postponement Case: Hewlett Packard	
22	Tue, 4/8	Managing risk in operations – Risk Pooling	5
23	Thu, 4/10	Internet distribution Case: Barnes and Noble vs. Amazon.Com Push vs. Pull in Supply Chains	
24	Tue, 4/15	Revenue management [Airlines & Baseball].	
25	Thu, 4/17	Supply chain coordination: vendor managed inventory Case: Barilla Spa	
26	Tue, 4/22	Supply chain coordination: contracts Case: NetFlix	6
27	Thu, 4/24	Responding to Consumer Behavior: Some Cases	
28	Tue, 4/29	Summary and review Article: What is the Right Supply Chain for Your Product?	
		<b>Final Exam [Date &amp; Locations TBA]</b>	