

# OM S335 OPERATIONS MANAGEMENT

**Unique Number: 71860**

**Summer 2010**

**Instructor:** Haoying Sun

**Meeting Time:** MTWTHF 11:30 – 1:00 PM

**Classroom:** UTC 1.118

**Office:** CBA 5.334B

**Office Hour:** MWF 2:00 – 3:00 PM

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## **Course Overview:**

Operations management (OM) involves the integration of numerous activities and processes to produce products and provide services in a highly competitive global environment. Most organizations recognize that world class performance in operations is essential for competitive success and long-term survival. We will consider key performance measures of operations (productivity, flexibility, quality, and response time) as well as important concepts for improving the performance of operations along these dimensions. This course takes a lectures plus cases format. Lectures are about to give you the necessary concepts and tools to identify and analyze operations problems. Cases are about to give you means to apply what you have learned from the course to “real-world” operations problems and to see how these tools and skills can be applied to improve operations performance for organizations.

## **Course Objectives:**

Upon finishing the course, you are expected to achieve the following goals:

- Gain basic concepts of operations management and the challenges faced by today’s firms.
- Understand various production processes and service systems.
- Acquire skills to uncover operational problems and improvement opportunities in production or service processes and apply techniques learned from the course to give useful recommendations to managers.
- Work with people from different background as a team to solve complex real world business operations problems.

## **Prerequisites:**

The following prerequisites assumed for registering this course:

- Credit or registration for BA 324 or credit for MIS 324
- Credit or registration for STA 309

## **Course Materials:**

- **Textbook:** Cachon, G. and C. Terwiesch. 2006. Matching Supply with Demand: An Introduction to Operations Management. 2nd Edition. New York, NY: McGraw-Hill / Irwin.
- **Reading:** Goldratt, E. M. 1992. The Goal, 2nd Edition. Great Barrington, MA: North River Press, Inc.
- **Course Packet:** A course packet including all the cases and articles we are going to use in class is available at the Co-op.
- **Course Website:** This course will use Blackboard substantially. The login page is located at <http://courses.utexas.edu/>. A UT EID is required for accessing the website. If you have problems using Blackboard, you can call the ITS help desk at 475-9400. You will find the followings on Blackboard:
  - **Course Notes:** To support the lectures, I will be posting PowerPoint slides and/or lecture notes on Blackboard as the semester goes on. While these notes would be posted just before the class, they are not intended to be a substitute for attending class.
  - **Assignments and Solutions:** There will be 6 independent problem sets and 4 group homework assignments to be turned in during the semester. The purpose of homework assignments is to provide learning reinforcement and to prepare you for the class participation. You will find that the homework provides excellent learning feedback and is a confidence-building tool too. The assignments will also help you prepare for the exams.
  - **Feedback:** You and I shall work together to create the best learning environment we can. Your informal feedback about the class and the course is very important to me. Please do let me know throughout the semester if there is anything I can do to make the delivery of the course better for you.
  - **Grades:** Grades on exams and assignments will be posted on Blackboard. Please check that the grade posted matches the grade on your paper copy and notify the instructor as soon as possible in case of a discrepancy.

**Performance Evaluation:**

Your grade will be based on the following distribution:

<b>Midterm Exam:</b>	<b>25%</b>
<b>Final Exam:</b>	<b>35%</b>
<b>Individual Homework:</b>	<b>20%</b>
<b>Group Assignment:</b>	<b>12%</b>
<b>Class Participation:</b>	<b>8%</b>
<b>Total:</b>	<b>100%</b>

The requirements and a description for each item are outlined below.

1. **Exams:** The Midterm Exam (27<sup>th</sup> July) will cover the materials through Sessions 1-10 and the final exam would be comprehensive, but with more emphasis on Session 13-24. The exams may contain true/false, multiple choice, short answer, or analytical problem solving questions. The exams are closed book and closed note. You are allowed to bring one page of cheat sheet (formula, etc, anything you deem important). Do remember to bring your calculator. No Laptop allowed. Other necessary tables used throughout the semester will be provided during the exam.
2. **Make-up Exams:** Offering a make-up exam for a missed exam is entirely at the discretion of the instructor. Students with legitimate reasons and **letters of proof** could request to take make-up exams.
3. **Individual Homework:** There will be six individual assignments throughout the semester. You are required to complete them individually. Homework should be turned in, properly stapled if two or more pages, at the beginning of the class session on the due date.
  - a) NO LATE HOMEWORK SUBMISSION WILL BE ACCEPTED because I will post the solution right after the class on the same day when the homework is due.
  - b) If a homework assignment has less than two questions, all of them will be graded based on your performance. If a homework assignment has more than two questions, a randomly selected two questions will be graded based on your performance and the rest will be graded based on your effort. Each performance based question will be graded on a 10-point scale and each effort based question will be graded on a 5-point scale. You have the opportunity to drop the lowest grade if you submit ALL 6 homework. You do not have the choice to drop any grade if you submit only 5 or less homework.
4. **Group Assignment:** There will be three case studies and the discussion of “The Goal” which will be completed in self-formed groups of **five** students. The cases are meant to give you a taste for some “real-world” operational problems. A question set will be provided for each of the case. Each group only need to submit one report and will receive one single grade. In your report, address all the questions posted for the case. All reports need to be typed using 12-point font and 1.5 line space. The only exception to the typing rule is when you want to include diagrams or drawings. Hand drawing is acceptable in your report. NO LATE CASE REPORTS WILL BE ACCEPTED because we will discuss the case in class on the day when it is due.
  - a. Please form your groups before the start of the 2nd day’s class and submit the list of your group members along with your first individual homework.
  - b. “The Goal”: This internationally recognized best seller is a classic piece which captures many of the concepts and issues regarding firm’s operations addressed in the course. It is a fun summer reading and does not require any prior knowledge or mathematical skills. Start to read it now! Do not wait until the day the summary is due.
  - c. At the end of the semester, you will be asked to evaluate every team member of your group. And the peer-evaluation results will be incorporated into the final grades. You need to report to me any serious issues you have with your team members as early as

possible. But do remember that one of the most valuable skills you can develop over your college years is to learn how to be a good team player and solve team conflicts effectively.

5. **Mandatory Class:** The Beer Game

On the day of “Beer Game”, we need to **extend our regular class time by half an hour**, i.e., we need to meet **from 11:30am to 1:30pm on August 10<sup>th</sup>**. “Beer Game” is an incredibly popular, entertaining and educational activity; its purpose is to introduce students to one of most crucial issues in Supply Chain Management. Please contact me **immediately** if there is a scheduling conflict.

**Scholastic Dishonesty:**

I take honesty and integrity very seriously. I will follow up on issues according to university rules. For more information, you can refer to the website at <http://deanofstudents.utexas.edu/sjs/>. Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the university. Since dishonesty harms the individual, all students, and the integrity of the University, policies on scholastic dishonesty will be strictly enforced.

**Students with Disabilities:**

The University of Texas at Austin provides upon request appropriate academic accommodations for qualified students with disabilities. For more information, contact the Office of the Dean of Students at 471-6259, 471-4641 TTY.

If for some reason you need special assistance to take an exam or complete an assignment please notify me ahead of time so that special arrangements can be made in a timely fashion.

The following is a tentative schedule of meetings, readings, and deliverables for the semester. This is subject to change. When there are major changes, you will be notified by email; a current schedule will always be available on the blackboard course website.

## Schedule<sup>†</sup>

	Date	Topic	Readings	HW Due Date
<b>Introduction to Operations Management</b>				
1	7/12 M	Course Introduction: Introduction to Operations Management	Chapter 1	
<b>Process Analysis and Design</b>				
2	7/13 T	Process Analysis: Process capacity and bottleneck analysis, Face game.	2.1-2.3; 3.1-3.3	IHW1: student's info. and group member list
3	7/14 W	Process Analysis: Measures of process performance and Little's Law	2.1-2.3; 3.1-3.3	
4	7/16 Th	Process Analysis, Kristen's Cookie Co. Case	Case: Kristen's Cookie Co.	GHW1: Kristen's Cookie Co.
5	7/16 F	Process Analysis: Resource utilization & labor costs estimation	3.4-3.5, 4.1-4.3	
6	7/19 M	Process Design: Line balancing	4.4-4.5	IHW2, group finalized
7	7/20 T	Process Design: Setup times and batching	6.1-6.3	
8	7/21 W	Process Design: Economic Order Quantity	6.4-6.5	
<b>Project Management</b>				
9	7/22 Th	Project Management: Introduction	Course Packet: "Project Management"	
10	7/23 F	Project Management: Crashing	Course Packet: "Project Management"	IHW3
<b>Midterm I</b>				
11	7/26 M	Review		IHW4
12	7/27 T	Midterm I		
<b>Queueing Theory</b>				
13	7/28 W	Queueing Theory: Introduction	7.1-7.6	
14	7/29 Th	Queueing Theory: Managing queueing systems	7.7-7.11	
15	7/30 F	Queueing Theory: Throughput losses	8.1-8.4	
<b>Quality Management</b>				

16	8/2 M	Quality Management: Statistical Process Control	9.1-9.5	IHW5
17	8/3 T	Quality Management: Toyota Manufacturing Case	10.1-10.4 , Case: Toyota	GHW2: Toyota Case
<b>Inventory Management</b>				
18	8/4 W	Inventory Management: Newsvendor Model	11.1-11.4	
19	8/5 Th	Inventory Management: Newsvendor Performance Measures	11.5-11.7	
20	8/6 F	Inventory Management: Quick Response	12.1-12.4	
<b>The Goal (novel)</b>				
21	8/9 M	The Goal	Book: The Goal Case: Electronic Component Distributor	IHW 6 Group HW3: The Goal
<b>Supply Chain Management</b>				
22	8/10 T	Supply Chain Management: <b>Beer Game</b> This session will be held from 11:30-1:30 pm.	Beer Game Instructions (handout will be given in class)	
23	8/11 W	Supply Chain Management: Bullwhip Effect	16.1-16.2	
24	8/12 Th	Supply Chain Management: Contracts, Case: Electronic Component Distributor	16.3-16.4	Group HW4: Case Analysis - Electronic Component Distributor
25	8/13 F	Review		
	TBD	<b>Final Exam</b>	TBD	

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