

# **OPERATIONS MANAGEMENT (OM335, 03885)**

## **SYLLABUS, SPRING 2012**

### **MEETING TIME & LOCATION:**

Tuesdays and Thursdays, 3:30PM-4:45PM, UTC 4.104

### **INSTRUCTOR:**

Guoming Lai, Assistant Professor

Office Hours: Mondays 4:00PM-5:00PM, Wednesdays 3:00PM-4:00PM

Office Location: CBA 3.448; Mailbox Location: CBA 5.202

Contact Information: [guoming.lai@mcombs.utexas.edu](mailto:guoming.lai@mcombs.utexas.edu), 471-5818

### **TEACHING ASSISTANT:**

Seung-Jae Park

Office Hours: Tuesdays 11:00AM-12:00PM, Thursdays 11:00AM-12:00PM

Office Location: CBA 5.334D; Mailbox Location: CBA 5.202

Contact Information: [parksj@mail.utexas.edu](mailto:parksj@mail.utexas.edu), 471-1671

### **COURSE DESCRIPTION:**

Operations management involves the integration of numerous activities and processes to produce products and services in a highly competitive global environment. Many companies have experienced a decline in market share as a result of their inability to compete on the basis of responsiveness, cost or quality. Most now agree that world class performance in operations is essential for competitive success and long-term survival. We 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. At the end of the course, students will have a fair understanding of the role that operations management plays in business processes. Emphasis is given both to familiarization of various production processes and service systems, and to quantitative analysis of problems arising in the management of operations.

### **COURSE OBJECTIVES:**

The course seeks to both improve your understanding of operations management and enhance your analytical skills. The course will present several analytical techniques which would aid you in making decisions in the real world. In the meanwhile, the course will introduce you various aspects, issues, and initiatives in nowadays business operations. At the end of this course, you should have

- Understanding of the importance of operations management and the challenges;
- Understanding of various production processes and service systems;

- Acquired analytical capability to uncover problems and improvement opportunities in production or service processes and recommend process improvement along the dimensions of efficiency, quality and speed;
- Working with others to solve business operations problems.

**COURSE MATERIALS:**

- Textbook: Matching Supply with Demand: An Introduction to Operations Management, 2<sup>nd</sup> Edition. Authors: Gerard Cachon and Christian Terwiesch. Publisher: McGraw-Hill/Irwin, New York, NY. ISBN: 9780073525167.
- Book: The Goal, 3<sup>rd</sup> Edition. Authors: Eliyahu Goldratt and Jeff Cox. Publisher: North River Press, Inc. Great Barrington, MA. ISBN: 0884271781. (This international best seller is a novel that captures many of the concepts and issues addressed in the course. According to *Financial Times*, “The only book that [managers] have actually read right through over the years is THE GOAL.” The book is funny yet deep, *requiring careful reading.*)
- Course packet with 4 cases: It is available at the GSB Copy Center. Group assignments are based on these cases. We will discuss the cases in class.
- Course website: All materials available in electronic format (lecture slides/notes, homework assignments, homework solutions, sample exams, exam solutions, etc.) will be posted at Blackboard course website (<http://courses.utexas.edu>). Lecture slides/notes will be posted before the class. Homework solutions will be posted the next morning after the due date.

**COURSE EVALUATION:**

Exam I	18%
Exam II	18%
Final Exam	45%
Homework Assignments	14%
Class Participation	5%

Exams: A final comprehensive exam will be given during the University assigned period and two regular exams will be given periodically throughout the semester.

- The exams may contain true/false, multiple choice, short answer, or analytical problem solving.
- The exams are closed-book and closed-note. Do remember to bring your calculator.
- No makeup exams unless appropriate paperwork is provided for rescheduling.

Homework Assignments: There are 13 homework assignments throughout the semester, with both individual and group assignments (see the “Course Schedule” below). When computing the average grade on homework assignments, the lowest grade will be dropped. In other words, your final score will be the average of your 12 best scores. You are strongly encouraged to hand in all 13 assignments as they constitute the best preparation for the exams. Homework assignments will be graded by the TA on a scale of 0 to 15. Points will be given for effort (especially for the case-based assignments), correctness of your answers and presentation. Each

assignment must be submitted no later than the class on its due day. NO LATE HOMEWORK WILL BE ACCEPTED. A grade of zero will be assigned if you do not turn in the homework. Homework due dates can be found from the "Course Schedule" below. Any concern regarding the grading of the homework assignments should be addressed directly to the TA (not to the instructor).

Individual Assignments: These are skill-building exercises.

- You may discuss the assigned problems with your classmates. But you should write YOUR OWN solutions and you should note on your submissions who you have discussed with.
- You should provide formulas, steps, or reasons to support your solutions. Submissions with only the final solutions will not be given any credit. Submissions can be either typed or hand-written. However, please make sure that they are *readable*.

Group Assignments: These are exercises that will apply the concepts introduced in class to "Real-World" problems.

- It is your responsibility to form your groups (**in principle 3-4 members per group**) and email them to the TA (see the email address above). **Since the first group assignment is due on Tuesday Jan 31, your groups should be formed as soon as possible.** Not having a group is NOT a reason for late submission of group assignments. NO LATE CASE ASSIGNMENTS WILL BE ACCEPTED.
- For each group assignment, a single grade will be assigned to each group. Therefore, only one submission is required per group per assignment. For each submission, please remember to write full names of all the group members who contribute to the answers. No credit will be given if the name is not shown on the submission. The answers can be typed and submitted either electronically through Blackboard or in class.

Regrade Requests: If you wish a regrade of any homework assignment or exam, please appeal it within SEVEN CALENDAR DAYS of the date that I attempt to return it to you. After these seven days, I will consider all grades final. Please realize that there are standard policies for point deductions for each problem with any exam or assignment. Thus, unless the grader has misapprehended your intent or misread your work, any partial credit is unlikely to change.

Class Participation:

- Attendance will be formally taken on the day of the Beer Game (see below) and will constitute 2% of the final evaluation; your attendances and participations in the other class sessions will constitute 3% of the final evaluation. Participation in class, in the form of answering questions and/or commenting on the materials is strongly encouraged.
- In each session, students are asked to pick up their name cards and return them at the end of the session. Students who participate in the class are asked to put their name cards back on the instructor's desk, the others are asked to put the name cards on the first row of student desks.
- Students are expected to prepare before class when a case is to be discussed.

- Students shall not disturb classmates, surf the web, read newspapers or use their cell phones in class.

**Evening Class: Beer Game**

An evening class will be held (tentatively) on *Wednesday April 25 from 5:45PM to 8:00PM* at **CBA 4.348**. “The Beer Game” is a popular, entertaining and educational activity; its purpose is to introduce students to one of most crucial issues in Supply Chain Management (unfortunately it has nothing to do with beer!). Please contact me immediately if there is a scheduling conflict.

**SCHOLASTIC DISHONESTY:**

The McCombs School of Business has no tolerance for acts of scholastic dishonesty. The responsibilities of both students and faculty with regard to scholastic dishonesty are described in detail in the Policy Statement on Scholastic Dishonesty for the McCombs School of Business:

*By teaching this course, I have agreed to observe all of the faculty responsibilities described in that document. By enrolling in this class, you have agreed to observe all of the student responsibilities described in that document. If the application of that Policy Statement to this class and its assignments is unclear in any way, it is your responsibility to ask me for clarification. Policy on Scholastic Dishonesty: 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. You should refer to the Student Judicial Services website at <http://deanofstudents.utexas.edu/sjs/> or the General Information Catalog to access the official University policies and procedures on scholastic dishonesty as well as further elaboration on what constitutes scholastic dishonesty.*

**COURSE WEBSITES & STUDENT PRIVACY:**

Password-protected class sites will be available for all accredited courses taught at The University. Syllabi, handouts, assignments and other resources are types of information that may be available within these sites. Site activities could include exchanging emails, engaging in class discussions and chats, and exchanging files. In addition, class e-mail rosters will be a component of the sites. Students who do not want their names included in these electronic class rosters must restrict their directory information in the Office of the Registrar, Main Building, Rm 1. For information on restricting directory information see:

<http://www.utexas.edu/student/registrar/catalogs/gi02-03/app/appc09.html>.

**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.

**COURSE SCHEDULE:**

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. *Note.* CT: the text book; CP: the course packet; IA#: Individual assignments; GA#: Group assignments. Lecture slides will contain more or less materials than the textbook. Homework assignments and exams are designed according to the materials covered in the lecture slides. Thus, lecture slides are always a part of the materials required.

	Date	Topic	Readings	HW	HW Due
1	Jan 17 T	Introduction to Operations Management	CT: Chapter 1, Slides (always)		
<b>Process Analysis</b>					
2	Jan 19 TH	Process capacity and bottle neck (I)	CT: Chapter 3	IA1, GA1	
3	Jan 24 T	Process capacity and bottle neck (II)			
4	Jan 26 TH	Labor cost and line balancing	CT: Chapter 4		
5	Jan 31 T	Kristen’s Cookie case study	CP: Kristen's Cookie	GA2	IA1, GA1
6	Feb 2 TH	Little’s law and inventory	CT: Chapter 2		
7	Feb 7 T	Setup times and batching	CT: Chapter 6.1-6.3, 6.6-6.8	IA2	
8	Feb 9 TH	CRU Rental case study	CP: CRU Rental		GA2
9	Feb 14 T	Review for exam I	Sample exam I		IA2
10	Feb 16 TH	<b>Exam I</b>			
11	Feb 21 T	Debrief exam I; Introduction to queueing system	CT: Chapter 7		
12	Feb 23 TH	Managing queueing system (I)			
13	Feb 28 T	Managing queueing system (II)		IA3	
<b>Inventory Management and Quality Control</b>					
14	Mar 1 TH	Economic order quantity (I)	CT: Chapter 6.4-6.5	IA4	
15	Mar 6 T	Economic order quantity (II)		GA3	IA3
16	Mar 8 TH	University Healthcare Service	CP: UHS; The GOAL		
	Mar 13 T	[Spring Break]			
	Mar 15 TH				

	Date	Topic	Readings	HW	HW Due
17	Mar 20 T	Newsvendor model (I)	CT: Chapter 11	IA5	IA4
18	Mar 22 TH	Newsvendor model (II)			GA3
19	Mar 27 T	Review for exam II	Sample exam II		IA5
20	Mar 29 TH	<b>Exam II</b>			
21	Apr 3 T	Debrief exam II	Book: The Goal	GA4	
22	Apr 5 TH	Quick response, Risk pooling	CT: Chapter 12.4, Chapter 14		
23	Apr 10 T	Supply chain management	CT: Chapter 16.3-16.5	IA6	
24	Apr 12 TH	Revenue management	CT: Chapter 15		
25	Apr 17 T	Cambridge case study	CP: Cambridge SC	IA7	IA6, GA4
26	Apr 19 TH	Quality management and control	CT: Chapter 9		
27	Apr 24 T*	No daytime class; Beer game played on Wed Apr.25, evening			
28	Apr 26 TH	Bullwhip effect; Statistical process control	CT: Chapter 16.1-16.2	IA8	IA7
29	May 1 T	Review for final exam (I)			IA8
30	May 3 TH	Review for final exam (II)	Practice final exam		
31	TBA	Final exam			

\* Mandatory evening class on Wed Apr 25, 5:45PM-8:00PM at CBA 4.348