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## OM 335H: OPERATIONS MANAGEMENT (Spring '10)

(Last updated on January 11, 2010)

#03890 : M-W 12:30am-2:00pm in CBA 4.330

#03895 : M-W 2:00pm-3:30pm in CBA 4.330

Instructor : Edward G. Anderson Jr. E-Mail : [edward.anderson@mcombs.utexas.edu](mailto:edward.anderson@mcombs.utexas.edu)

Office : CBA 3.430 Phone : 512-471-6394

Mailbox : CBA 5.202

Office Hours : by appointment Web : Blackboard or [www.EdAnderson.org](http://www.EdAnderson.org)

TA<sup>†</sup> : Burcu Tan Email : [burcu.tan@phd.mcombs.utexas.edu](mailto:burcu.tan@phd.mcombs.utexas.edu)

Mailbox : CBA 5.202 Phone : 512-471-1673

Mailbox : CBA 5.202

Office hours : Wednesdays 4:00-5:30 pm\*

\*Note: This is potentially subject to change. If I do have to change it, you will be notified via e-mail and blackboard during the first two weeks of class.

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### COURSE DESCRIPTION:

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Operations Management (OM) is the cost effective management of resources to achieve organizational goals. OM focuses on the systematic planning, design, operation, control, and improvement of the processes which produce goods and deliver services. Managing operations is vital to every type of organization, for it is only through effective and efficient utilization of resources that an organization can be successful in the long run. This is especially true today, when we see that significant competitive advantages accrue to those firms that manage their operations effectively.

This course is the “foundations course” for our new major in Supply Chain Management. This class can also be useful to students with other majors because every business has an operations component.

Prerequisites: credit or registration for BA 324 (or credit for MIS 324) and credit or registration for STA 309.

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## COURSE OBJECTIVES:

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The main objectives of this course are:

- To provide you with an understanding of the crucial importance of operations management in today's business environment.
- To familiarize you with the basic concepts, techniques, methods and applications of operations management.
- To enhance your analytical skills and ability to uncover problems and opportunities for improvement in production and service processes.

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## COURSE MATERIALS:

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### 1. Required Readings

- Course Packet: Available at the University Coop. It contains a set of readings and cases we will discuss in class.
- Book: "The Goal" by Goldratt and Cox, 3<sup>rd</sup> Revised Edition. Great Barrington, MA: North River Press, Inc. 2004. If you have an older edition, that will be fine for purposes of this class.

### 2. Recommended Readings

- Textbook: "Matching Supply with Demand: An Introduction to Operations Management" by Cachon, G. and C. Terwiesch. New York, NY: McGraw-Hill / Irwin, 2nd edition (June 2008)

**3. 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 web site. If you need more information or tutorials, go to <http://www.utexas.edu/cc/blackboard>. If you have problems using blackboard, you can call the ITS help desk at 475-9400. You will find the following on Blackboard:

**(a) Course Notes:** Before each lecture, a pdf version of the slides will be posted under "Course Documents". Most of the time, these slides will be incomplete and you will be expected to fill in the blanks in class. Partially completed slides will be posted on Blackboard within 24 hours of class.

**(b) Assignments and Solutions:** The purpose of homework assignments is to provide learning reinforcement and promote class preparedness. You will find that the homework provides excellent learning feedback and is a confidence-building tool. The assignments will also help you prepare for the exams.

**(c) Practice exams:** Practice exams and sample problems are posted on the website.

**(d) Forums:** You are invited to further discuss topics brought up in class on the forum. You can also post any comments you have about the material and ask questions. Finally, you can post comments, criticisms and suggestions anonymously regarding the course.

**(e) 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 (for exams) or the TAs (for assignments) as soon as possible in case of a discrepancy.

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## **PERFORMANCE EVALUATION:**

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Your grade will be assessed through homework assignments, exams and class participation. Below is a description of how the various types of assignments and tests contribute to your grade, as well as a description of each type of graded work.

	<b>Grade</b>
Midterm Exam I	20%
Midterm Exam II	20%
Final Exam	35%
Homework assignments	20%
Class Participation	5%
<b>Total</b>	<b>100%</b>

Extra credit work will not be given under any circumstance.

### **Exams**

The two Midterm exams will each concentrate upon the material taught during that section of the class. The Final Exam will be comprehensive but with a greater focus on the materials from the final section of the class.

Exams may contain true/false, multiple choice, short answer, essay, or analytical problem solving questions. The exams are closed book and closed notes. Do remember to bring two (2) calculators as well as at least 2 pencils and a pen for writing short answers and essays. A formula sheet will be provided during the exam.

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 can request to take make-up exams.

A solution set will be made available after the graded exams are returned. Students must read this file before coming to the instructor to discuss their grade. Any concern regarding the grading of exams should be addressed directly to the instructor, no later than two weeks after the graded exam was returned in class.

## **Homework Assignments**

There are approximately 10-12 homework assignments throughout the semester. You may do the homework assignments in teams but in this case, each student must hand in a separate handwritten copy and indicate the names of the people they worked with on the front page. If you do the assignment individually, then you may (and in fact are encouraged to) type it.

Homework assignments have to be turned in in class at the beginning of the class session listed on the schedule or sent by email as one PDF, DOC or DOCX file (no JPG or XLS please!) to the instructor (not the TA), within 5 minutes of the starting time of the class session. They can also be put in the instructor's mailbox or under the instructor's office door but then you need to send an email to the instructor immediately to let her know that you have done so. The solutions to the homework will be provided at the end of the day when it is due; therefore no late homework assignments will be accepted.

When computing the average grade on homework assignments, the two lowest grades will be dropped. However you are strongly encouraged to hand in all assignments as they constitute the best preparation for the exams.

Homework assignments will be graded by the TAs on a scale of 0 to 2 for each question. At the end of the semester, each homework will be turned into a percentage prior to averaging to determine the semester homework grade. For example, 22 out of a maximum of 24 points for a homework will be translated into a 91.6% prior to averaging. Points will be given for effort (especially for the case-based assignments) and presentation. Any concern regarding the grading of homework assignments should be addressed directly to the TA and not to the instructor, no later than one week after the graded assignment was returned in class. Do remember to check your returned homeworks against the solution sets (which will be posted within a day of the homework's due date) because a high grade does not mean that the problems were completed correctly.

The students are asked to fill out the form at the end of this syllabus and submit it as part of homework 1 (for two points on homework 1).

## **Class Participation**

Regular attendance at all class meetings is expected. Attendance will be formally taken on the day of the Beer Game (see below) and will constitute 2% of your final grade.

Students are expected to prepare before class when a case is to be discussed. Participation in class, in the form of answering questions and/or commenting on the material is strongly encouraged. Participation on the Blackboard forum will also be counted towards the class participation grade, as long as the posted comments are relevant.

In each session, students are asked to pick up their name card and return it at the end of the session. Students who participated in class are asked to put their name card back on the instructor's desk, the others are asked to put it on the first row of student desks.

Students may 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 22<sup>rd</sup> from 6:30 to 8:30pm*. “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.

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**SCHOLASTIC DISHONESTY**

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I take honesty and integrity very seriously. I will follow up on issues according to university rules. You can refer to the website at <http://deanofstudents.utexas.edu/sjs/> for more information. 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.

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**STUDENTS WITH SPECIAL NEEDS**

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

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**SCHEDULE**

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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.

OM 335H Tentative Schedule				
	Date	Topic	Readings	HWs
1	Jan 20 W	Introduction to Operations Management		
<b>PROCESS ANALYSIS</b>				
2	Jan 25 M	Process Flow diagrams & Vocabulary	“Process Fundamentals”; MSWD: 3.1-3.2	HW1
3	Jan 27 W	Process Metrics	MSWD: 2.1-2.2; 3.4-3.6, 4.1-4.3	
4	Feb 1 M	Process Scheduling & Bottlenecks	Case: “Kristen’s Cookies”;	HW2
5	Feb 3 W	Process Design Principles	“Types of Processes”; MSWD: 2.6; 4.2-4.5	
6	Feb 6 M	Process Batching & Costing	“Breakeven Analysis & Operating Leverage” MSWD: 6.1-6.3	HW3
7	Feb 10 W	Process Costing (cont.)		
8	Feb 15 M	Process Design Application	<b>Case: “Benihana”</b>	HW4
9	Feb 17 W	Review session		
10	Feb 22 M	Midterm I		
<b>PROJECT &amp; PROCESS RISK</b>				
11	Feb 24 W	Project Management: Critical path analysis	“Project Management”	
12	Mar 1 M	Project Management: Managing project risk		
13	Mar 3 W	Process Coordination: The Goal	“Just-in-time Production” <b>Book: <i>The Goal</i></b>	HW5
14	Mar 7 M	Process Risk: Waiting time analysis	“Note on Managing Waiting lines”; MSWD: 2.3; 7.1-7.2 ; 7.4-7.6	
15	Mar 10 W	Process Risk: Applying queueing principles	MSWD: 7.8-7.11	HW6
	Mar 15 M	[Spring Break]		
	Mar 20 W	[Spring Break]		
16	Mar 22 M	TBD		
17	Mar 24W*	Process Risk: Supply Chain Mgt.—Beer game		
18	Mar 29 M	Process Risk: Supply Chain Mgt—Bullwhip effect	“Bullwhip Effect in Supply Chains” MSWD: 16.1-16.2	HW7
19	Mar 31 W	Review session		
20	Apr 5 M	Midterm II		
<b>REDUCING RISK</b>				
21	Apr 7 W	Hedging Process Risk: Economic Order Quantity	“Note on Inventory Mgt”*** MSWD: 6.4-6.5;	
22	Apr 12 M	Hedging Process Risk: Order-up-to inventory policy	MSWD: 13.1, 13.2, 13.5, 13.7	HW8
23	Apr 14 W	Hedging Process Risk: Newsvendor inventory policy	MSWD: 11.1- 11.5 <sup>†</sup> , 11.6-11.7	
24	Apr 19 M	Process Improvement: Exploiting the learning curve	“Note on the Use of Experience Curves” <b>Case: Shouldice</b>	HW9
25	Apr 21 W	Process Improvement: Quality targets	“Statistical Quality Control for Process Development” MSWD: 9.1-9.5 <b>Case: “Quality Wireless (A) &amp; (B)”</b>	HW10
26	Apr 25 M	Process Improvement: 6-Sigma Quality Tools		
27	Apr 27 W	Process Improvement: Toyota Production System	“Decoding the DNA of the Toyota Production System” MSWD: 10.1-10.10 <b>Case : Toyota</b>	HW11
28	May 2 M	Reducing Global Risk: Sustainability & OM	<b>Case: Wal-Mart</b>	HW12
29	May 5 W	Review session		
30	TBD	Final exam		

<sup>†</sup> You may skip from the 2<sup>nd</sup> last paragraph of p224 to the 2<sup>nd</sup> last paragraph of page 230.

\* mandatory evening class.

\*\*To be distributed on blackboard



## OM 335H: Course contract (Spring 2010)

Please initial every rule then sign and date.

I ..... have read and understood the Spring 2010 syllabus for OM335H. Specifically, I am aware of the following rules:

- I can only discuss my grade on a homework assignment with the TA for one week after the graded assignments have been returned in class.
- I can only discuss my grade on a midterm exam with the instructor for two weeks after the graded assignments have been returned in class or—in the case of the final—after the last day of the semester. Before I do so, I need to take a look at the “grading scheme” file. Additionally, I realize that there are standard deduction policies, so any partial credit is unlikely to change.
- On a day when a homework assignment is due, I have to hand it in within 5 minutes of the starting time of the lecture. If I put it in the instructor’s mailbox or under her door, I have to email her and the TA immediately after I do so. If I choose to email my homework I have to send it to the instructor and the TA before the start of the lecture.
- No late homework assignments will be accepted.
- Attendance to the beer game is required and worth 2% of my final grade.
- I understand extra credit work will not be given under any circumstance.
- I should pick up my name card at the start of each lecture. If I participated during the class session, I should put it back at the end on the instructor’s desk (honor system).
- I have to let the instructor know well in advance if I cannot come to the beer game.
- I have to return this form back to the instructor signed and initialed with homework 1 (for one point).

Date and Signature

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Signature

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Date