

# **BA 380N: OPERATIONS MANAGEMENT**

**Spring 2003**

## ***REVISED SYLLABUS***

**Unique No. 01725: MW 10:00-12:00 in GSB 3.104**

**Unique No. 01735: MW 12:00- 2:00 in GSB 3.104**

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### **COURSE DESCRIPTION**

Operations Management involves the *systematic* design, operation, control and improvement of business processes to achieve organizational goals, most often by providing the customer maximum value with minimum firm resources. Managing operations is critical to every type of organization, for it is only through operations that the firm interacts with the customer. Strategy and marketing are not enough. As globalization eliminates the “fat” from all industries, firms with poor operations will end up with either no customers or no cash. By integrating operations into the firm’s business model, however, firms such as Dell, Cisco, and Toyota have shown that good operations make good business sense.

The objective of this course is to provide you with an understanding of operations and the role that they play within an organization. By the end of the course, you should have developed an appreciation for the challenges in providing world-class products and services and the ability to use some analytical tools and conceptual frameworks to guide your thinking about operations. In particular, you should leave this course able to:

- Integrate operational perspectives into your overall business toolkit;
- Analyze key business processes;
- Understand how variability impacts processes;
- Rigorously improve business processes (including identifying the likely impact of information technology);
- Discuss recent operations trends at a high level.

### **TEACHING/LEARNING METHODOLOGY**

This course is a mixture of lectures and case-discussions. The readings for the class consist of a reading packet available from the University Co-op and 2 books available from Amazon.com or BN.com.

*The Goal: A Process of Ongoing Improvement* by E. Goldratt and J. Cox.

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*. We will discuss the book in class on Mar. 20.

*The Memory Jogger: A Pocket Guide of Tools for Continuous Improvement.*

(This pocket guide has been used for employee education by many companies. All the tools, with the exception of control chart, are easy to learn. We shall encounter many of the tools during the semester. Focus particularly on flow chart, check sheet, Pareto chart, cause & effect, run chart, histogram, scatter diagram, and stratification. You may want to spend a few minutes on these tools as soon as you can. But, no later than April 5.)

**plus** there will on most days be copies of class overheads downloadable from the course website. You should always bring the appropriate overheads to each class to mark up. The homework assignments are also on the web.

We will be using the web for most distribution purposes. The documents will be posted in Acrobat Portable Document Format (PDF). A free copy of Acrobat Reader (at least version 4.0) can be downloaded from [www.adobe.com](http://www.adobe.com) under the heading “Free Plug-ins and Updates.” There is also a link on my website.

The detailed course outline following lists, for every class session, the readings, case, questions, assignment, and anything else of importance. Please read this outline carefully before every session. Because class time is our most precious and inelastic resource, **please come to every class prepared. Essential preparation includes reading the assigned readings and case, doing the assignments, and bringing these resources and materials to each class.**

**Teamwork** An important element of this class is teamwork. To maximize learning, you are strongly encouraged to work in study groups. Suggested questions to help you prepare for each case can be found in the detailed course outline. These questions should serve only as a starting point. You are encouraged to pursue your own line of thought, and decide what the key operations issues are, and how they can be addressed.

**Homework** The purpose of homework assignments, both individual and group, is to provide learning reinforcement and promote class preparedness. You will find that the homeworks provide excellent learning feedback and are a confidence-building tool. The assignments will also help with your preparation for the exams.

**Class Participation** To foster a productive learning environment, it is important that everyone come to class prepared and willing to contribute to discussion. Ideally, you will make concise, insightful, and eloquent comments in every class. However, I also recognize the importance of making smaller contributions, including asking good questions. I believe that the learning environment is best when the discussion is not dominated by a few, but moved along incrementally by all of us. Do not be afraid to make points that you may regard as minor, ask clarifying questions, or otherwise contribute in small ways.

**Feedback** You and I will work together to create the best learning environment we can. Your informal feedback is very important to me. Please let me know throughout the semester if there is anything I can do to make this class better for you.

## PERFORMANCE EVALUATION

The performance criteria are weighted as follows:

|                     |      |
|---------------------|------|
| Midterm Exam        | 30%  |
| Final Exam          | 30%  |
| Homework            | 20%  |
| Class Participation | 10%  |
| Group Project       | 10%  |
| Total               | 100% |

The expected course grade distribution is:  $A \leq 30\%$ ; grades lower than B  $\leq 10\%$ . Grades lower than B will be assigned on a case by case basis.

### Exams

In past years both the midterm and the final exam were open note, open book. However, since this seems to have lead to poor test preparation and a “match the homework to the test problem” mentality. Hence, you will be allowed to bring in *one (1)* sheet of 8 ½”x11” paper to each exam with your formulas and notes. Any probability distribution or queueing tables will be provided with the exam, so you needn’t waste your sheets on these details.

Each exam will consist of multiple questions – each question typically consisting of multiple parts. The exams will require both quantitative and qualitative responses. The questions for the most part are not multiple choice or true/false. The quantitative versus qualitative split on each exam will reflect the topics covered on the exam. For example, the first section of the course is largely quantitative whereas the latter two sections are more evenly balanced; this split will be reflected in the exam questions.

### Homework

For your homework assignments, you are encouraged to work with other students. However, the solution that you turn in must be your own – photocopies are not accepted. Note that attendance at certain functions listed on your course outline, such as the semester plant trip, will count as a homework assignment. Homeworks are downloadable off our website.

Each homework question will be graded on a scale of from 0 to 2 points. A solution showing evidence of an effort at completeness will earn 2 points. An incomplete solution will earn 1 point. However, all homework assignments will be normalized at the end of the semester, so that they each count equally towards your grade.

Homework is due at the beginning of class and **no late homework will be accepted**. However, your lowest homework grade will be dropped for purposes of computing your semester grade.

### Logistics

Attendance at each class session is expected unless otherwise noted. If you are unable make a class on a given day, please check with your classmates to find out whether any in-class announcements were made.

Please use e-mail for questions wherever feasible versus the telephone.

### HONOR CODE

By teaching this course, I observe all of the faculty responsibilities with regard to the Honor System. By enrolling in this class, you have agreed to observe all the student responsibilities with regard to the Honor System

**Please do not use any materials (packet of overheads, homeworks, course notes, handouts, exams, homework solutions, case summaries) from previous semesters or from other sections of the course being offered in this semester unless the same has been made available by me to every one of your fellow students in this class.** If the application of the Honor System to this class and its assignments is unclear in any way, it is your responsibility to ask me for clarification. Many thanks in advance for your cooperation and assistance.

### ADDITIONAL POLICIES

The University of Texas at Austin provides upon request appropriate academic accommodations for qualified students with disabilities. If you have a condition (e.g. learning disability, chronic medical condition, etc.), of holiday that needs accommodation, please see me early in the semester so that we can take appropriate step. For additional information about the University's policies, contact the Office of the Dean of Students at 471-6259 or 471-4641.

**The following is a detailed outline of the readings assigned for each class session.**

# BA380N: READING ASSIGNMENTS

*Due dates for homework assignments are listed **separately** in the course outline.  
Readings are in Course Packet unless otherwise noted.*

|                   |   |
|-------------------|---|
| SESSION 1         | INTRODUCTION TO OPERATIONS MANAGEMENT   |
| <b>Notes:</b>     | We will fill out information cards in class. If you cannot attend this class for some reason, please e-mail me your name, phone number, and e-mail address immediately.   |
| SESSION 2         | PROCESS FLOW DIAGRAMS AND TERMINOLOGY   |
| <b>Notes:</b>     | 1) Read the syllabus carefully; procure the two books; and procure the reading packet from Paradigm. Begin downloading overheads.<br>2) We will play the face game.<br>4) Read first 2 articles below verrry carefully!                                       |
| <b>Readings:</b>  | <b>"Process Fundamentals."</b><br><b>"Types of Processes"</b>   |
| SESSION 3         | INTRODUCTORY PROCESS ANALYSIS   |
| <b>Notes:</b>     | 1) Do not forget to bring the Kristen's Cookie overheads to class.<br>2) Also, look over the course outline in the syllabus for homework assignments to be turned in for today's and subsequent classes.<br>Homework assignments can be found on our website. |
| <b>Readings:</b>  | <b>"A Note on Gantt Charts"</b>   |
| <b>Case:</b>      | <b>KRISTEN'S COOKIE COMPANY (A)</b>   |
| SESSION 4         | PROCESS COST STRUCTURE  |
| SESSION 5         | BASIC PROCESS DESIGN  |
| <b>Readings :</b> | "State Automobile License Renewal"  |
| <b>Notes:</b>     | We will work on the License Renewal exercise in class. Please read it carefully. Make sure to bring your overheads to class today!  |
| SESSION 6         | SERVICE PROCESS ANALYSIS AND DESIGN   |
| <b>Case:</b>      | <b>BENIHANA OF TOKYO</b>  |
| SESSION 7         | INTRODUCTION TO SUPPLY CHAIN MANAGEMENT   |
| <b>Notes:</b>     | <b>Do Beer Distribution Game exercise in class.</b>   |
| SESSION 8         | INTRO TO SUPPLY CHAIN MANAGEMENT (cont.)  |
| <b>Readings:</b>  | <b>"The Bullwhip Effect in Supply Chains"</b><br><b>"Supply-Chain Hero"</b>   |
| <b>Video:</b>     | "Beer Game Video from MacNeil/Lehrer Report"  |

|                   |  |
|-------------------|--|
| SESSION 9         | CAPACITY AND INVENTORY BUILDUP ANALYSIS  |
| <b>Readings :</b> | <b>"Capacity"</b>  |
| <b>Notes:</b>     | In class, we shall work on the Fishing fleet and cannery exercise. Read the exercise carefully, consider the questions, and bring the exercise to class.   |
| SESSION 10        | PROJECT MANAGEMENT—CPM & PERT  |
| <b>Readings:</b>  | <b>"Project Management"</b><br><b>"What Every Manager Needs to Know About Project Management"</b>  |
| <b>Notes:</b>     | Read the "Project Management" very carefully.  |
| SESSION 11        | TBD  |
| SESSIONS 12-13    | MANAGEMENT OF WAITING LINES  |
| <b>Readings:</b>  | <b>"Note on the Management of Queues" ***Please ignore the note in your packet, and instead download the "Note on Managing Waiting Lines" off the webpage***</b><br><b>"The Psychology of Waiting Lines"</b> |
| <b>Notes:</b>     | <b>We will work on the Waiting Line Analysis Exercise in class.</b><br><b>You will find a table of <math>L_q</math> values in your overhead packet.</b><br><b>Please bring it to class</b>                   |
| SESSION 14        | SYNCHRONOUS PRODUCTION   |
| <b>Readings:</b>  | <b><i>The Goal</i></b>   |
| SESSION 15        | INVENTORY MANAGEMENT POLICIES  |
| <b>Readings:</b>  | <b>"A Note on Inventory Management"</b>  |
| SESSION 16        | INVENTORY MANAGEMENT POLICIES (cont.)  |
| <b>Notes:</b>     | <b>Today we will get into the nitty-gritty of determining an inventory policy.</b>   |

|                   |   |
|-------------------|---|
| SESSION 17        | PRODUCTION PLANNING AND CONTROL   |
| <b>Readings:</b>  | "A Note on Push Systems", "A Note on Pull Systems", "Push the Plan, Pull the Work"<br>"Getting Control of Just-in-Time"   |
| <b>Exercise</b>   | The Candy Game  |
| SESSION 18        | LEAN PRODUCTION: TOYOTA PRODUCTION SYSTEM   |
| <b>Case :</b>     | TOYOTA MOTOR MANUFACTURING, USA, INC.   |
| SESSION 19        | GUEST SUPPLY CHAIN SPEAKER  |
| <b>Readings :</b> | TBD   |
| SESSION 20        | PRODUCTION LINE APPROACH TO SERVICE   |
| <b>Readings:</b>  | "Putting the Service-Profit Chain to Work"<br>"Production Line Approach to Service"<br>"Why Service Stinks?"<br>"The Man Who Put the Valley on the Map"   |
| <b>Case:</b>      | SHOULDICE HOSPITAL LIMITED  |
| SESSION 21        | TOTAL QUALITY MANAGEMENT & PROCESS IMPROVEMENT (PART 1)   |
| <b>Readings:</b>  | "A Bluffer's Guide to TQM"<br>"Competing on the Eight Dimensions of Quality"<br>"Designing for Six-Sigma Capability"<br><i>The Memory Jogger: A Pocket Guide of Tools for Continuous Improvement</i> (Note: Only look at the following tools: Pareto Charts, Scatter (Correlaion) Diagrams, Run Charts, Cause-and-effect (aka Ishakawa or Fishbone) Diagrams, Histograms, and Flowcharts. |
| SESSIONS 22       | TQM & PI (PART 2)   |
|                   | "Reengineering a Business Process"<br>"Putting the Enterprise into Enterprise System"   |
| SESSION 23        | COURSE SUMMARY  |

## Anderson BA 380N Course Outline Spring 2003 (REVISED)

(Reading Assignments for each session can be found in the attached syllabus)

|             | Session                                      | Homeworks<br>DUE | Topic  | Case/Book/Exercise                             |                                |
|-------------|--|------------------|--|--|--------------------------------|
| <b>Jan.</b> | 13   | 1                | Introduction to Operations Management                |  |                                |
|             | 15   | 2                | 1  | Process Flow Diagrams and Terminology          | Face Game                      |
|             | 20   | ***              | <b>***No Class, MLK Day***</b>                       |  |                                |
|             | 22   | 3                | 2  | Introduction to Process Analysis               | <b>Kristen's Cookie Case</b>   |
|             | 27   | 4                | 3  | Process Cost Structure                         | Dell vs. Microsoft             |
|             | 29   | 5                | 4*   | Basic Process Design                           | License Renewal Ex.            |
| <b>Feb.</b> | 3  | 6                | 5  | Service Process Analysis and Design            | <b>Benihana Case</b>           |
|             | 5  | 7                | 6*   | Intro to Supply Chain Management               | Beer Game                      |
|             | 10   | 8                | 7  | Intro to Supply Chain Management (cont.)       | Bullwhip Effect                |
|             | 12   | 9                |  | Capacity and Inventory Buildup Analysis        | Fishing Fleet/Cannery          |
|             | 17   | 10               | 8 <sup>a</sup>                                       | Project Management – CPM & PERT                |                                |
|             | 19   | 11               | 9 <sup>a</sup>                                       | TBD  |                                |
|             | 21   | *MT*             | <b>Mid-Term Rooms UTC 1.144 and 1.146</b>            |  |                                |
|             | 24   | 12               |  | Management of Waiting Lines                    |                                |
| <b>Mar.</b> | <b>***No Class Texas Plus March 3-21 ***</b> |                  |  |  |                                |
|             | 24   | 13               | 10   | Management of Waiting Lines (cont.)            |                                |
|             | 26   | 14               | 11   | Synchronous Production                         | <b>The Goal</b>                |
|             | 31   | 15               | 12   | Inventory Management Policies                  |                                |
| <b>Apr.</b> | 2  | 16               |  | Inventory Management Policies (cont.)          |                                |
|             | 7  | ***              | <b>***No Class in compensation for Mid-term***</b>   |  |                                |
|             | 9  | 17               | 13*  | Production Planning and Control                | Candy Game                     |
|             | 14   | 18               | 14   | Lean Production                                | <b>Toyota Case</b>             |
|             | 16   | 19               |  | Guest Speaker on Supply Chains                 |                                |
|             | 21   | 20               | 15   | Production Line Approach to Service            | <b>Shouldice Hospital Case</b> |
|             | 23   | 21               |  | Total Quality Management & Process Improvement |                                |
|             | 28   | 22               | 16 <sup>a</sup>                                      | TQM & PI (Part 2) and Class Summary            |                                |
|             | 30   | 23               | *GP*   | Review for Final ( <b>Group Project Due</b> )  |                                |
| <b>May</b>  | 12   |                  | <b>Final Exam (2:00-5:00 in GSB 3.104 and 3.106)</b> |  |                                |

\* Indicates that students in the past have found this homework especially lengthy

<sup>a</sup> Keep a copy of this homework for yourself, as it will not be returned in time to study for exams