Course Information and Syllabus

Bus 40000: Operations Management: Business Process Fundamentals

Autumn 2008, Eisenstein

Course description:
This core course focuses on understanding levers for structuring, managing, and improving a firm’s recurring business processes to achieve competitive advantage in customer responsiveness, price, quality, and variety of products and services. These levers are as applicable to banks, hospitals, and brokerage firms, for example, as to traditional manufacturing. Processes within firms, as well as between firms, i.e. supply chains, are explored. The fundamental principles underlying state-of-the-art practices, such as Quick Response, Just-in-Time and Time-Based Competition, are explored so that students learn to critically evaluate these and other operational improvement programs.

Students learn the basics of how to manage the operations of a firm, and how operational issues affect and are affected by the many business decisions they will be called upon to make or recommend in their careers. As such, this course is essential to students aspiring to become consultants, entrepreneurs, or general managers. A working knowledge of operations is also indispensable to those interested in marketing, finance, and accounting, where the interface between these functions and operations is critical. Finally, an understanding of how firms become market leaders through operations is important in investment careers.

Most weeks consist of in-depth case discussion, integrated with theory. As such, the course is good preparation for many cases encountered during interviews for internships and full-time positions.

Prerequisites:
Any previous or concurrent exposure to basic statistics is helpful.

Course Web Page: http://chalk.uchicago.edu

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Office Hours: By appointment

Sections:
• 40000-01: Thursday 1:30pm – 4:30pm, (Campus)
• 40000-81: Thursday 6:00pm – 9:00pm, (Gleacher)
Course Materials:

- The Goal by Goldratt
- 2 course packets
- Littlefield Technologies simulation passcode (purchased from the bookstore).

Grading:

- Homework – 20%
- Littlefield Simulation – 10%
- Class Contribution – 10%
- Midterm Exam – 20%
- Final Exam – 40%

- The midterm is an optional/drop-able exam. That is, the 20% of your course grade allocated to the midterm exam will be determined as the better of your midterm and final exam grades.
- If for any reason you cannot take the midterm exam at the scheduled time, I will shift the 20% onto your final exam (i.e., your final will be worth 60%). I strongly discourage you from using this option unless it is absolutely unavoidable.
- If you expect a provisional grade for graduation before the quarter ends, you MUST take the midterm.
- All grade disputes must be submitted in writing within two weeks of it being returned. I reserve the right to regrade the entire assignment/exam, and possibly lower your grade if I find something that was misgraded.

Littlefield Technologies:

Each team will compete against each other in managing a factory that assembles Digital Satellite System receivers. The team whose factory has the largest cash position at the end of the game wins. More details will be given in class and the assignment writeup, to be posted on the course web page.

- In order to play the game, each student must purchase a passcode from the bookstore. A passcode can only be used by one student. When you log in for the first time, you must enter your full name as it appears on the registrar’s records.
- **YOU MUST REGISTER BEFORE THE SIMULATION BEGINS**
  In fact, you must do so no later that 2 hours before it begins.
- Students who do not purchase a passcode and register their name, even if they participate in the game with their group, will receive a grade of zero for the Littlefield assignment.
- Your grade will be based on a combination of your final cash position, relative to other teams, and a writeup. A good writeup will provide a detailed analysis and justification of the team’s strategy, rather than just an anecdotal description of the actions taken.
- Any group that exerts little or no effort playing the game will receive a grade of zero, regardless of the quality of the writeup.
Homework assignments and group work:

- Homework assignments are indicated on the course syllabus and will be posted on the course website at least one week before they are due.
- Homeworks will be turned in at the start of class in hard copy. Therefore, you should make copies for your use during class and in preparing for exams. I reserve the right to penalize the grade on any assignment turned in after class begins.
- On all assignments you should work in groups of size 4 or 5. Everyone in the group will be expected to know the entire assignment well enough to discuss it in class. You may only put your name on the group write-up if you contributed.
- Submit ONE document per group containing the assignments due each week.
- I will allow you to form groups across sections. However, assignments must be turned in at the first class session attended by any of your group members. For example, if anyone in your group is a Thursday student you must hand in the assignment on Thursday.
- I am looking for work done carefully and thoughtfully, and I expect you to show your work and rigorously defend your answers. Effort will factor heavily into homework grades.
- It is a good idea to periodically check your email and the course web site for updates during each week.

Honor Code:

- Students in my class are required to adhere to the standards of conduct in the *GSB Honor Code* and the GSB Standards of Scholarship. The *GSB Honor Code* also requires students to sign the following GSB Honor Code pledge, “*I pledge my honor that I have not violated the Honor Code during this assignment/examination.*”
- It is not acceptable to review case write-ups from other sections/past quarters of Bus 40000, or the Internet while preparing the assignments.

Attending other sections:
I expect you to attend the section in which you are enrolled. However, on a limited basis I will allow you to attend an alternate section as needed, but subject to the following:

- Students enrolled in the section they are attending have seating priority.
- Assignments must be turned in at the first class session attended by any of your group members. (as illustrated above)
- You must send me an email indicating the alternative section you wish to attend for the week, and why.

Class contribution:

- You should find a seat you are comfortable with and stay there the entire quarter. This will help me in correctly assessing student contribution.
- Use your name card every class.
- Laptop computers and cellular phones must be turned off during class.
- You will be able to make class contributions if you have worked hard on the cases and therefore come to class prepared.
Part I: Introduction to Operations and Strategy


Objective: To characterize the operational capabilities of business processes and their link to corporate strategy.

Topics:
- Strategic operational capabilities
- The Operations Quadrangle
- Introduction to business process flows
- Little’s Law
- Capacity bottlenecks

Read:
- The Goal, Goldratt, through page 62.
- “Competing on Capabilities,” Stalk, Evans, Shulman.
- “Varsity Subs,” Eisenstein.

Part II: Understanding and Managing Business Process Flows

10/2 – Module 2: Capacity Management

Objective: To develop a fundamental understanding of what determines the capacity of an operation, its impact on profits, and how to alter it for operational improvement.

Topics:
- Capacity analysis
- Product mix decisions
- Linear programming

Read:
- The Goal, Goldratt, through page 161.
- Chapter 1, Capacity Management of The Operations Quadrangle.
- “Merton Truck Company,” Harvard Case 9-189-163. (Do not do the “Problems” on page 4 of the case.)

Prepare individually and hand-in:
- Assignment: Concept Check #1

Prepare with your group and hand-in:
- Assignment: National Cranberry Cooperative
- Assignment: Merton Truck Company I
10/9 – Module 3: Cycle-Time Management

Objective: To explore how firms increase profitability through cycle-time reduction.

Topics:
- Operational focus
- Profit drivers and the Operations Quadrangle
- Scheduling and capacity
- Re-engineering
- Critical paths

Read:
- The Goal, Goldratt, through page 246
- Chapter 2, Sections 2.1 and 2.2, Cycle-Time Management of The Operations Quadrangle
- Linear Programming Note: Merton, GSB Faculty.
- “Shouldice Hospital,” Harvard Case 9-683-068.

Prepare individually and hand-in:
- Assignment: Concept Check #2

Prepare with your group and hand-in:
- Assignment: Shouldice Hospital

10/16 – Module 4: Capacity Management Under Uncertainty

Objective: To examine how enterprises manage capacity in business processes that are subject to uncertainty in supply and demand.

Topics:
- Service operations, call center management
- Queueing phenomena: balking, jockeying, reneging
- Levers for improving queueing costs
- M/M/1, G/G/1 queueing models

Read:
- Finish The Goal, Goldratt
- Finish Chapter 3, Cycle-Time Management of The Operations Quadrangle
- “Merchants Mull the Long and the Short of Lines,” Gibson.

Prepare individually and hand-in:
- Assignment: Concept Check #3

Prepare with your group and hand-in:
- Assignment: Sof-Optics, Inc.
10/23 – Module 5: Lean Production, Quality Management

Objective: To explore how resources are deployed and processes organized to achieve effective operations for meeting market requirements. To introduce basic concepts in quality management.

Topics:
- Process design: Craft vs. assembly
- Cellular production
- Toyota Production System, Just-in-time (JIT), jidoka
- Quality management

Read:
- “Jeans Therapy,” King
- “Riverside Fashions,” Eisenstein.

Prepare individually and hand-in:
- Assignment: Concept Check #4

Prepare with your group and hand-in:
- Assignment: Riverside Fashions Case

10/30 Midterm Exam & TBA

Midterm Exam
- In class.
- Closed book. You will be allowed to bring one page of notes, double-sided.
- No makeups or alternative exam arrangements/times.
- If you cannot take the midterm exam, I will shift its weight onto your final exam.
Part III: Supply Chain Management

11/6 – Module 6: Foundations of Inventory Management
Objective: To introduce the fundamental theory and basic concepts of inventory management.
Topics:
- Economic order quantity
- Safety stock, cycle stock: \((Q, R)\) policies
- Newsvendor Model

Read:
- “Raiding A Company’s Hidden Cash,” Tully.
- “Cisco’s $2.25 Billion Mea Culpa,” Barrett.

Prepare with your group and hand-in:
- Assignment: Inventory Preparation

11/13 – Module 7: Forecasting, Inventory Pooling/Postponement, Littlefield Introduction
Objective: A strategy of using a demand forecasting to make inventory decisions. Explore strategies of pooling inventories to hedge risk and improve inventory performance.
Topics:
- Demand forecasting
- Inventory pooling
- Postponement strategies

Read:
- JungleBooks.com, Eisenstein.

Register for Littlefield
- You must register for the Littlefield Technologies simulation no later than 2 hours before it begins: Instructions will be emailed to you and posted on Chalk — SEE INFO BOX BELOW.

Prepare individually and hand-in:
- Assignment: Concept Check #5

Prepare with your group and hand-in:
- Assignment: JungleBooks.com
- Assignment: L. L. Bean
11/17 — Littlefield Simulation begins

Note: The Littlefield Technologies simulation will begin on Monday, Nov 17 at 10:00am and ends on Wednesday, Nov 26 at 10:00am. I will post the assignment “Littlefield Technologies: Overview,” on the course website. Your write-up will be due at the start of our last class session, Module 9. NOTE: You will be able to work on and complete a good portion of the write-up before the Littlefield simulation actually ends.

11/20 – Module 8: Supply Chain Coordination, Supply Chain Contracts

Objective: To understand the bullwhip effect in supply chains and how firms can counteract it. To understand how incentive problems can degrade supply chain performance, and how to resolve them through contracts.

Topics:
- Just-in-Time Distribution/Vendor-Managed Inventory
- Bullwhip effect
- Supply chain contracts.
- Supply chain coordination.

Read:
- “Barilla SpA (A), (C), and (D),” Harvard Cases 9-694-046, 9-695-065, and 9-695-066.
- “Supply Chain Coordination,” Chapter 14, Matching Supply with Demand.

Prepare with your group and hand-in:
- Assignment: Barilla SpA
- Assignment: Video Vault

11/27 — Thanksgiving Holiday
Objective: To explore internet-based business models and their operational processes, including warehousing and distribution.

Topics:
- Littlefield discussion and lessons.
- Last-mile e-commerce
- Warehousing and distribution
- Course overview

Read:

Prepare individually and hand-in:
- Assignment: Concept Check #6

Prepare with your group and hand-in:
- Assignment: E-Groceries.
- Littlefield Technologies writeup

Final Exam
- 40000-01: Thursday, Dec 11, 3:00pm – 6:00pm, (Harper)
- 40000-81: Thursday, Dec 11, 6:30pm – 9:30pm, (Gleacher)
- Closed book/note. Comprehensive. You will be allowed to bring two pages of notes, double-sided.
- No makeups or alternative exam arrangements/times.