Competitive Advantage from Operations
Course Syllabus B01.2314.0U2 (Spring 06)
(Subject to Minor Revisions)

COURSE DESCRIPTION:
This course serves as an introduction to Operations Management. The coverage of the discipline is very selective: We concentrate on a small number of powerful themes that have emerged recently as the central building blocks of world-class operations. We also present a sample of operations management tools and techniques that have been proved extremely useful over the years. The topics are equally relevant in the manufacturing and service sectors.
The course format is very intense. We will meet on three consecutive weekends: Saturday and Sunday January 21-22, January 28-29 and February 04-05, 2006. Attendance in all sessions is required for full credit. If you have to miss up to one session (1/2 day), please notify the instructor in advance. Finals projects and exams will be due February 13, 2006.

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MEETINGS: Saturday/Sunday, 09:00AM – 4:00PM Room T-201 (Tisch Hall)

CLASS MATERIAL:
Required: CASES AND READINGS: Packet available in bookstore (also, some will be distributed in class, and some can be downloaded from the course web site)

Recommended:


Other Operations Management References (Optional):
• Operations Management for Competitive Advantage (Tenth Edition), by Chase, Aquilano and Jacobs, Irwin / McGraw-Hill.

COMPUTER SOFTWARE: EXCEL
Module 1: Introduction to Operating Systems: Process Design and Analysis

Session 1: Jan. 21 (AM), Production Processes and Process Design

Case assignment:
- *Benihana of Tokyo*, W. Sasser and J. Klug, Harvard Business School (1998). Read, analyze, and be prepared to discuss the Benihana of Tokyo case. Use the following study questions as an aid in analyzing the case:
  
a) Describe Benihana as an operating system. (Draw a process flow diagram.) List the relevant inputs, process, and output elements in three columns.
b) How does the operating system support the Benihana concept?
c) Which parameters of the operating system influence the throughput of a Benihana Restaurant?
d) How does the cost structure of a Benihana restaurant compare with that of a typical American restaurant? How does Benihana get its competitive advantage?
e) What is the proper relationship between the number of tables in the dining room and number of seats in the bar? Assume they want the average customer to stay 24 minutes in the bar.

**Case Assignment #1:**
Answer questions b) and d) and submit at the beginning of class. Justify your answers.

Session 2: Jan. 21 (PM), Design of Operating Processes
- Types of Operating Processes
- Design of Goods and Services

Session 3: Jan. 22 (AM), Process Flow Analysis
- Flow Diagram
- Capacity, Throughput Time, Cycle Time
- Gantt Chart
- Bottleneck
- Factors that Affect Throughput and the Bottleneck
  - Order Size
  - Resources (Labor, Supplies)
  - Set-up Time
- Multi Product Analysis

**Case:** *Kristen’s Cookie Company*, Roger Bohn, Harvard Business School (1990). Read, analyze, and be prepared to discuss the Kristen's Cookie Company case, utilizing the six key questions at the end as guides.

**Case Assignment #2: (Due at the Beginning of Class)**
Identify all possible bottleneck operations in Kristen’s process. Explain.

**Case:** Read, analyze, and be prepared to discuss Donner Company case.

Session 4: Jan. 22 (PM), Optimal Resource Allocation
- Linear Programming
- Models and Applications
- Sensitivity Analysis and Shadow Price
Module II: Managing for Competitive Advantage

Session 5: Jan. 28 (AM), *Time-to-Market & Responsiveness*
- Project Management
- CPM & PERT
- Crashing the project

Session 6: Jan. 28 (PM), *The Effects of Uncertainty—Waiting Lines & Queuing Theory*
- Characteristics of a Waiting-Line System
  - Arrival, Waiting Line, Service Characteristics
  - Measuring the Queue’s Performance
  - Queuing Costs
- Psychology of Queues

Case: Read, analyze, and be prepared to discuss *First City National Bank case.*

Session 7: Jan. 19 (AM), *Quality as a Strategic Issue*
- Quality – Its Definition and Basis for Competition
- Quality Analysis, Measurement and Improvement

Case assignment:
- *Ford-Firestone Case*, Michael Pinedo, Sridhar Seshadri and Eitan Zemel, Stern School of Business, New York University (2001). Read, analyze, and be prepared to discuss the Ford-Firestone case. Use the following study questions as an aid in analyzing the case:
  - Is the situation serious? At what point in time? How did it happen? Who is responsible?
  - How companies react to the problem? Could it have been prevented?
  - How can we know if a rollover is caused by a defective tire?
  - When the manufacturer is the responsible for a tire failure?

Case Assignment #3: (Due at the Beginning of Class)
*Explain how Toyota management (based on TPS philosophy) would have handled the different stages of the Ford-Firestone crisis.*

Session 8: Jan. 29 (PM), *Process Improvement and Statistical Quality Control*
- Continuous improvement & Six Sigma
- Control Charts

Case: Read, analyze and be prepared to discuss the quality control issues in the South Tree Electronics case. In analyzing South Tree's quality control problem the following study questions may help:
- Indicate on the process diagram, all current inspection points and note the accumulated cost and yield of each operation and test in the process.
- How many circuits must you start with to achieve the desired output level?
- At what yield rate would you be indifferent between continuing and discontinuing the first inspection in the process?
JAN. 29: SUBMIT HOMEWORK #1
Please make sure to get a copy of the homework the previous weekend. You can solve this homework in groups of up to 4 students.

Module III: Supply Chain Management

Session 9: Feb. 04 (AM), Inventory Concepts and Models
➢ Importance of Inventory
➢ Inventory Measures
➢ EOQ and Periodic Review Models


Case Assignment #4: (Due at the Beginning of Class)
What are the PROS and CONS of the production/inventory strategy used at Blanchard?

Session 10: Feb.04 (PM), Inventory in Action: The Beer Game

Session 11: Feb. 05 (AM), Supply Chain Management

(Optional Case): Read and be prepared to discuss the Dell Direct case.
What are the operational factors that contribute to Dell’s competitive advantage? In your opinion, what should Dell do to keep their competitive advantage?

Session 12: Feb. 05 (PM), Inventory in Action
➢ Stochastic Inventory Management
➢ Newsboy Model
➢ Revenue Management

Case: Read and be prepare to discuss the L.L. Bean, Inc case.
Case Assignment #5: (Due at the Beginning of Class)
What are the PROS and CONS of the demand forecast and inventory strategy used at L.L. Bean? Can you recommend a better system?

FEB. 05: SUBMIT HOMEWORK #2
Please make sure to get a copy of the homework the previous weekend. You can solve this homework in groups of up to 4 students.

Grades:

Class Participation: 10%
Case Assignments: 20%
Homework: 30%
Final Exam: 40%