BA 380N: Operations Management
Spring 2010

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Course Description

Our focus during the course will be on fundamental concepts and principles that will help you obtain a better understanding of operations management and become a better manager. We will illustrate how managers can use fundamental process analysis principles to gain insights into processes and make better operations management decisions. The operations function is central to the business enterprise and it has strong interactions with other functional areas, in particular with the marketing and sales organizations; thus we will also explore the interfaces between operations and other functional areas.

In the first part of this course we study fundamental concepts of business processes, such as capacity, throughput, lead time and the effects of variability on processes. Then we will study the Toyota Production System and process improvement concepts. In the second part of the course we will study supply chain management concepts, with a focus, as our textbook title indicates on exploring and understanding the tradeoffs involved on matching supply with demand. In the detailed outline below we indicate the specific topics we will cover in each four hour session.

The course and materials are light on mathematical notation, and we will not focus on mathematical abstractions for their own sake; however, we will no shy away from rigorous analysis when it is required to fully understand a relevant operations management concept.

Textbook

Cachon G. and C. Terwiesch, “Matching Supply with Demand: An Introduction to Operations Management,” 2nd. Edition, McGraw-Hill Irwin, 2006.

Grading

Each student's grade will be based on the following requirements:

• Midterm Exam	20%
• Final Exam	40%
• Homework Assignments	30%
• Class participation	10%
Total	**100%**

Class Participation: Case preparation is an integral component of class participation. Each student is expected to study each case for two to three hours depending on the amount of back-of-the-envelop type analysis necessary. Your comments and contributions to case and lecture discussions will also contribute to the class participation component of your grade. If you have not been able to prepare a case or if you are uncomfortable with being called on in a particular class, please let me know at the start of the class.

Course Outline.

Jan. 8th
Jan. 16

Topics:

- Process view of the organization.
- Product-Process Matrix.
- Process Bottleneck.
- Little's Law.
- Cycle Time and Throughput Time of a process.
- Production Line Metrics
- Link Between Operations Metrics and ROI

Readings:

- Chapters 2, 3, 4 and 5 of Textbook

Case: Benihana of Tokyo

Jan 30
(E. Porras)

Topics:

- Relationship between batching and inventory
- Relationship between batching and capacity
- Relationship between batching and cost
- The EOQ model and its extensions

Case: Meditech

Readings:

- Chapter 6 of Textbook.

Feb. 13
(E. Porras)

Topics:

- Forecasting in the supply chain
- The newsvendor model
- The re-order point level control policy
- The order-up-to control policy

Readings:

- Chapters 11 and 13 of the Textbook

Case

Risk Pooling at ACME

Feb. 19,20

Topics:

- Impact of variability of processing/service time and inter-arrival times on process response times.
- Statistical Process Control and Six Sigma

Readings:

- Chapter 9 of Textbook.

Cases:

Zipcar: Refining the Business Model

Process Control at Polaroid (A)

Mar. 5

***** MIDTERM EXAM *****

Topics:

- The Toyota Production System.
- Principles of Lean Production.

Readings:

- Chapter 10 of Textbook.
- Toyota Motor Manufacturing, U.S.A., Inc.
- Flow-Time Analysis: Chapter 4 of MBPF (Included in Course Packet)

Case:

Deutsche Allgemeinversicherung

Mar. 19,20

Topics:

- Understanding Project Differences.
- Managing Projects.

Readings:

- How Projects Differ and What to do About it.
- Precedence Networks and The Critical Path Method
- Planning with Uncertainty

Cases:

A&D High Tech (A): Managing Projects for Success

A&D High Tech (B): Managing Scope Change

Apr. 3 and 10

Topics:

- Intra and Inter Firm Coordination.
- Characteristics of Innovative and Functional Products.
- Characteristics of Responsive and Efficient Supply Chains.

Readings:

- Inventory-Driven Costs
- Aligning Incentives in Supply Chains.
- What is the Right Supply Chain for your Products?
- Aligning Supply Chain Strategies with Product Uncertainties.
- Triple-A Supply Chain
- Rapid-Fire Fulfillment

Cases:

Teradyne Corporation: The Jaguar Project

Seven-Eleven Japan

Zara: IT for Fast Fashion