

**MBA 850N  
OPERATIONS MANAGEMENT  
Winter 2007**

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OFFICE HOURS: Wednesday's 9-11 AM. Please make an appointment for additional office hours.

<b>COURSE CONTENT</b>
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Operations Management represents a critical area for both manufacturing and service industry firms in today's competitive market place. This business function can be designed to provide major competitive advantage along dimensions that include: cost, delivery speed and reliability, quality, and quick response in product design. Because of the competitive importance of operations activities, this function is undergoing rapid change and re-structuring in many companies involving efforts such as:

- Cross-functional integration
- Continuous improvement of business processes
- Service and product quality improvement
- Employee empowerment and teamwork
- Time-based competition

The need for achieving improved competitive advantage through operations has created important opportunities for MBA's entering both general management and operations management positions.

This course presents a general management perspective on the operations function in a business. It is concerned with how operations activities can best be designed and managed to support the strategic objectives of a business. It covers the basic areas of managerial decision-making in operations, including operations strategy, process improvement, quality management, and operations planning and control. The course is designed to place the management of operations in a strategic business context, and to support the increasingly competitive business environment faced by operations managers today.

## **COURSE STRUCTURE**

Each class session has two objectives. One involves the discussion of a case designed to provide an opportunity to apply the concepts developed in the reading assignment for that class. The other involves a lecture/discussion intended to re-enforce and elaborate upon the concepts developed in the reading, case, or exercise assignment for that class. The classes will also include several other types of activities. These include video type presentations, class exercises, and executives as guest speakers.

## **REQUIRED COURSE MATERIALS**

Two texts and a course packet are required. The course pack contains cases and readings and is available at Copy-Ez. The texts are:

- Operations and Supply Management: The Core (1st Edition), F. Robert Jacobs and Richard B. Chase, ISBN 978-0-07-340330-4
- Learning to See, M. Rother and J. Shook. ISBN# 0-9667843-0-8. These are available in the OSU campus bookstore by Tuttle Garage.

## **PERFORMANCE EVALUATION**

### **CASE ANALYSIS**

Students will be expected to critically read all assignments and be prepared to discuss them in class. You are encouraged to raise questions and share observations or analysis that the readings have indicated to you. In each class session one case will be analyzed and discussed. All assignments are due at the start of the class for which they are assigned.

No formal presentation of results will be required although teams are encouraged to prepare exhibits which might be shared with the class to support a point of view during the case discussion.

On all assignments, please include all team members' names on the front page of the report in alphabetical order. Teams should consist of 4-5 students and will be determined on the first day of class.

### **CLASSROOM PERFORMANCE**

The value of the class discussions is directly related to the amount of quality student participation. The class discussion questions (included in this course outline) have been developed as an aid in preparing the case analysis for all of the cases.

Class participation provides the opportunity to practice speaking and persuasive skills, as well as the ability to listen. Comments that are vague, repetitive, unrelated to the current topic, disrespectful of others, or without sufficient foundation will be evaluated negatively. What matters is the quality of one's contributions to the class discussion, not the number of times one speaks.

During each class session, three students will independently evaluate your contribution to the class discussion. Your participation grade will be the average of the three ratings from each class. You are encouraged to check with me periodically to find out about your participation grade.

The following class participation rubric has been developed to evaluate the class participation.

Participation is graded on a scale from 0 (lowest) through 4 (highest), using the criteria below. The criteria focus on what you demonstrate in class. I expect the average level of participation to satisfy the criteria for a "3".

Grade	Criteria
0	<ul style="list-style-type: none"> <li>• Absent</li> <li>• Checking emails during class</li> </ul>
1	<ul style="list-style-type: none"> <li>• Present, not disruptive.</li> <li>• Tries to respond when called on but does not offer much.</li> <li>• Demonstrates very infrequent involvement in discussion.</li> </ul>
2	<ul style="list-style-type: none"> <li>• Demonstrates adequate preparation: knows basic case or reading facts, but does not show evidence of trying to interpret or analyze them.</li> <li>• Offers straightforward information (e.g., straight from the case or reading), without elaboration or very infrequently (perhaps once a class).</li> <li>• Does not offer to contribute to discussion, but contributes to a moderate degree when called on.</li> <li>• Demonstrates sporadic involvement.</li> </ul>
3	<ul style="list-style-type: none"> <li>• Demonstrates good preparation: knows case or reading facts well, has thought through implications of them.</li> <li>• Offers interpretations and analysis of case material (more than just facts) to class.</li> <li>• Contributes well to discussion in an ongoing way: responds to other students' points, thinks through own points, questions others in a constructive way, offers and supports suggestions that may be counter to the majority opinion.</li> <li>• Demonstrates consistent ongoing involvement.</li> </ul>
4	<ul style="list-style-type: none"> <li>• Demonstrates excellent preparation: has analyzed case exceptionally well, relating it to readings and other material (e.g., readings, course material, discussions, experiences, etc.).</li> <li>• Offers analysis, synthesis, and evaluation of case material, e.g., puts together pieces of the discussion to develop new approaches that take the class further.</li> <li>• Contributes in a very significant way to ongoing discussion: keeps analysis focused, responds very thoughtfully to other students' comments, contributes to the cooperative argument-building, suggests alternative ways of approaching material and helps class analyze which approaches are appropriate, etc.</li> <li>• Demonstrates ongoing very active involvement.</li> <li>• Has completed the class participation worksheet</li> </ul>

## **GRADING:**

### **Cases and Exercises:**

Fabtek Current State Map	5%
Morris Valley Winery - A3	5%
American Seal – A3	10%
Shouldice Hospital	5%
Sports Obermeyer	10%
<b>Midterm Exam</b>	<b>25%</b>
<b>Final Exam</b>	<b>30%</b>
<b>Class Participation</b>	<b>10%</b>
<b>Peer Evaluation</b>	<b>5%</b>

## **EXAMINATIONS:**

Each exam will be a combination of case analysis, essay questions and problem solving. The material could be based on anything covered in the lecture, text, other assigned readings and video or guest presentations. Formula sheets are given on exams.

**No make-up, late or early exams will be given, except in the case of medical emergency.** Business related absences are not excused. Students should make arrangements now to avoid time conflicts.

## **DISABILITY ACCOMMODATION**

If you need an accommodation based on the impact of a disability, arrange an appointment with me as soon as possible. We need to discuss the course format and explore potential accommodations. I rely on the Office for Disability Services for assistance in verifying need and developing accommodation strategies. You should start the verification process as soon as possible.

## **ACADEMIC MISCONDUCT**

Material submitted for course grade credit **must** be your own work. I will report any suspected case to the University Academic Misconduct Committee for investigation. Past cases have typically resulted in the assignment of grade of F for the course. Academic misconduct is a serious threat to the integrity and value of the Fisher College diploma. Such behavior is intolerable.

## COURSE OUTLINE

### OPERATIONS STRATEGY

**Thur., Jan. 4    1. Introduction to Operations and Supply Chain Management**

**Reading:** Chapter 1 – Operations and Supply Strategy, J&C

**Video:** What is Operations Management?

**Key Learning Concepts:**

- What is Operations and Supply Management?
- What is Operations and Supply Strategy?
- How does operations strategy fit into the overall strategic direction of a company?
- Understand the notion of competitive priorities.
- Order Winners and Order Qualifiers: the Marketing—Operations Link

**Tues., Jan. 9    2. Competing Through Operations**

**Reading:** Competing Through Operations, David Upton, SP

**Video:** JIT McDonald's Style

**Case:** McDonald's Corporation, Supplemental Package

This case has been assigned for class discussion purposes only.

Please read the case and answer the questions below prior to class.

**Case Questions:**

1. What characteristics of McDonald's production system have been most important in building its record of success and growth in the industry?
2. What are the key types of flexibility that McDonald's operations strategy needs to support? Which does it support and how? Which does it not support well and why?
3. Why did McDonald's undertake its collaboration with the EDF? Why did the EDF collaborate? What is your evaluation of the collaboration? How should McDonald's proceed next?
4. How should McDonald's respond to Burger King's October 1<sup>st</sup> announcement?

**Key Learning Concepts:**

- Explore in detail how a highly successful company has effectively linked its operations to its competitive strategy.
- Explore how companies can attack and defend their industry positions through competitive operation strategies.

**Thur., Jan. 11**

### **3. Process Selection**

**Reading:** Chapter 4 – Manufacturing Processes, J&C

**Internet Exercise:** Harley-Davidson Motorcycles, J&C- end of Chapter 1. Answer the questions related to the internet exercise.

**Video:** King Sooper's Bakery

#### **Key Learning Concepts:**

- Understand how processes need to be designed to match the volume and variety characteristics of the products that a company must produce.
- Understand how competitive priorities relate to the product-process matrix.
- Understand the trade-offs embodied in the product-process matrix.
- Explore how break-even analysis relates to the product-process matrix.

**Tues., Jan. 16**

### **4. Operation Management Simulation**

**Case:** Min-Yo Garment Company, Supplemental Package

This is an in class simulation and very complicated. Your team must read the case and download the Excel template, Min-Yo Garment Company.xls, prior to class. Teams will consist of 3 people and each team should bring a laptop to class.

## **LEAN SYSTEMS**

**Thur., Jan 18**

### **5. The DNA of Lean**

**Reading:** Chapter 9 – Lean Manufacturing, J&C

#### **Key Learning Concepts:**

- Understand the principles of Lean thinking:
  - value from the standpoint of the customer
  - identify value streams for product families
  - manage the product/process for flow
  - customer pull
  - manage towards perfection
- What is a learning organization?

**Tues., Jan 23**

### **6. Current State Mapping**

**Reading:** Chapter 1-Getting Started, Chapter 2-Current-State Map and Chapter 3-Lean Value Stream in Learning to See, Rother and Shook

**Video:** JIT at Tristate

#### **Key Learning Concepts:**

- What a value stream is.
- How and why to generate a value stream map.
- What steps add value and what generate waste?

Thur., Jan. 25

## 7. Future State Mapping

**Reading:** Future State Map and Achieving the Future State in Learning to See

**Reading:** Virginia Mason Medical Center, Supplemental Package

**Case:** Fabtek, Inc.

**→ Due:** Fabtek, Inc - Current State Map

Notes for completing the current state map:

- Pencil and paper (neat).
- Include your group number, class time and names in the upper right hand corner of the map
- Large Scale – we will be posting these on the wall
- Make sure to include on the current state map:
  - a timeline on the bottom
  - process boxes that show key metrics of the process (i.e., % complete and accurate, sorting method, leadtime, etc.)
  - the total lead time of the process
  - total value added time of the process
  - % complete and accurate of the total process

**Case:** Virginia Mason Medical Center – this case is for discussion purposes only.

1. What is Gary Kaplan trying to achieve at Virginia Mason?
2. How does the Toyota Production System fit into his strategy?
3. What is your view of the “people are not cars” debate?
4. Is Kaplan’s approach transferable to other US hospitals?

### Key Learning Concepts:

- Understand what process improvements are necessary to achieve the future state.
- What does the customer require and when?
- How to use your strategic map as a guide to make changes.
- What metrics are important to manage the future state.
- Examine the applicability of management models drawn from production industries to the setting of health care delivery.

## **PLANNING AND MANAGING PROJECTS**

**Tues., Jan. 30**

### **8. Project Management**

**Reading:** Chapter 2 - Project Management. J&C

**Video:** Building the Alton Super Bridge

#### **Key Learning Concepts:**

- What is a work breakdown structure?
- What is a Gantt Chart?
- Critical Path Method
- How to do project crashing.
- How should projects be organized for success.
  - Pure Project
  - Functional Project
  - Matrix Project

**Thur., Feb. 1**

### **9. Project Management – Introduction to A3’s**

**Reading:** Another Look at How Toyota Integrates Product Development, Supplemental Package

#### **Key Learning Concepts:**

- How to manage continuous improvement by the use of the A3

**Tues., Feb. 6**

### **10. MIDTERM – Material on exam to cover material thru Feb. 1**

**Thurs., Feb. 8**

### **11. Speaker: Operational Excellence Overview**

## **MEASURING PROCESS PERFORMANCE AND QUALITY**

**Tues., Feb. 13**

### **12. Quality Analysis**

**Reading:** Chapter 6, J&C, read through Six Sigma Quality

**Case:** Morris Valley Estate Winery, Supplemental Package

Review pages 331-332 for tips on making Pareto Charts in J&C

**Video:** Quality at Honda

**→ Due:** A3 for Morris Valley Winery

At a minimum, consider the following questions when preparing the case:

1. How important is quality to the MVW?
2. Please prepare a pareto chart detailing the bottle quality problem at MVW.
3. What actions should be taken concerning bottle vendors?
4. What should be done about the bottle quality problems?

#### **Key Learning Concepts:**

- Dimensions of quality in a product or service
- Cost of Quality; appraisal costs, prevention costs, internal failure and external failure
- Introduction to Six Sigma Methodology
- Basic tools for continuous improvement: SIPOC, Fishbone, Checksheets, bar charts and paretos

**Thurs., Feb. 15**

### **13. Measuring Quality – Statistical Process Control Methods**

**Reading:** Chapter 6, J&C, read the remainder of the chapter

**Video:** Statistical Process Control at Honda

#### **Key Learning Concepts:**

- Introduction to Statistical Process Control
- Variable versus attribute data and appropriate charts
- Process capability

**Tues., Feb. 20**

**14. Case:** American Seal, Supplemental Package

**→ Due:** American Seal – All groups are to turn in an A3 for American Seal. Include your group number and names in the upper right hand corner of the A3.

At a minimum address the following questions on the A3:

1. What are the problems that American Seal faces?
2. What is quality costing American Seal? Think quantitatively.
3. What insights can you gain from the sample data in Exhibit 12? (The data represent 20 samples of 5 observations each. For examples numbers 1-5 correspond to sample 1, numbers 6-10 correspond to sample 2, and so forth) Include the Xbar/Rchart and Cp/Cpk Analysis in the evaluation of current state.
4. What is your action plan?

**An excel file containing the sample data is available on Carmen. Please note that the samples 1-5, 6-10, etc., go across the columns and not down.**

**CAPACITY MANAGEMENT**

**Thurs., Feb. 22**

**15. Capacity Management**

**Reading:** Chapter 3 - Strategic Capacity Management, J&C

**Case:** Shouldice Hospital, Chapter 3, J&C

**→ Due at the beginning of class:** Each group should submit a typed case analysis answering the questions at the end of the case for Shouldice Hospital. Include a cover page with your group number and names on it. You must include any backup analysis in your submission as well as a recommendation for capacity expansion.

**Key Learning Concepts:**

- Linking capacity management to strategic objectives of the firm.
- Understanding economies and diseconomies of scale.
- What is a capacity cushion?

**COSTING THE VALUE CHAINS**

**Tues., Feb. 27**

**16. Inventory Management**

**Reading:** Chapter 12 – Inventory Control, J&C

**Key Learning Concepts:**

- Link inventory systems to demand of an item
- Understand and calculate the following:
  - Economic Order Quantity
  - Fixed Order Quantity Models
  - Fixed Time-Period Models
  - Safety Stock
  - ABC Analysis
- Cycle Counting

**Thurs., March 1**      **17. Guest Speaker: Carlos Alvarenga, VP Global Mfg. Supply Chain Leader, Satyam Computer**

**Reading:** Strategic Sourcing, From Periphery to the Core, Supplemental Packet

**Reading:** Chapter 7 – Strategic Sourcing, J&C

**Tues., March 6**      **18. Inventory Management and Operations**

**Case:** Norton Auto Supply, Supplemental Package

1. Assume that there are 52 operating weeks per year and that the data in Exhibit 3 represents the “average” of the 20 RDC’s. What is the most economical order quantity at the CDC for each of the parts listed in Exhibit 3?
2. Based on this analysis, does the current ordering policy at the CDC seem appropriate? Explain your answer.
3. How much safety stock should be held for each of the products in Exhibit 3 to achieve the currently stated goal of 98% service level at the RDC’s?
4. What does this reveal about the decision to hold two weeks of safety stock for each part at the RDC’s?
5. Which of the parts in Exhibit 3 would you recommend a 96% service level from stock and using overnight shipments if a shortage occurs on another 3%?
6. What would your recommendations be for safety stock at the RDC’s for each of the items listed in Exhibit 3?
7. What are the cost implications of your proposal?

**Thurs., March 8**      **19. Global Supply Chain**

**Reading:**

→ **Due:** \*Peer Evaluations

→ **Due:** **Case:** Sports Obermeyer, SP

Case Write-Up Instructions:

Sports Obermeyer case analysis should be a maximum of 5 one and half spaced pages, plus exhibits, using no smaller type font than an 11 font size. It is recommended that the case assignment questions included below be analyzed first. These questions have been constructed as an aid in preparing the case analysis. After all of the assignment questions have been analyzed, the written report should be prepared which includes a response to each question.

Each report should begin with a short executive summary (1/2 page). The executive summary should be a short synopsis of the entire paper. It should contain a brief introduction, problem statement and recommendation. Prepare the Executive Summary as if you had to hand this to your boss’ boss and he/she was reading it as they were walking into a meeting; brief, but very meaningful.

In all instances, the report should identify major issues, analyze those issues, and make clear recommendations. Be sure that the recommendations that you make follow from your analyses. Written cases are evaluated on both the quality of the analysis and the presentation. Simply put, case write-ups should not only reflect good thinking but should also be professional in style and appearance. The quality of the writing counts.

**Case Questions:**

1. Using the sample data given in exhibit 10, make a recommendation for how many units of each style Wally Obermeyer should order during the initial phase of production. Assume that all 10 styles of the sample are made in Hong Kong, and that Obermeyer's initial production commitment must be at least 10,000 units. **(Ignore price differences among styles in your initial analysis). The minimum order quantity is 600 units.**
2. What operational changes would you recommend to Wally to improve operational performance?
3. How should Obermeyer think, both long term and short term about sourcing in Hong Kong vs. Mainland China?

**FINAL EXAM**

**Tues., March 13      6 PM**

**Peer Evaluation – Group Projects**

Peer evaluations will count for a maximum of 5% of the total points. Your peer evaluation points will be awarded as follows: the quality and timeliness of your submission and the rating by your peers.

When you are evaluating the efforts of yourself and your peers you should take the following actions into account; quality of effort, quantity of effort, working relationship with group members, and completion of assignments in a timely fashion. **Peer evaluations are due to the instructor by Thursday, March 8<sup>th</sup>.**

**Your Name:** \_\_\_\_\_

**Team #/Letter** \_\_\_\_\_

**Group Members (including yourself):**

**Weight  
(out of 100%)**

**Name:** \_\_\_\_\_

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**Name:** \_\_\_\_\_

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**Name:** \_\_\_\_\_

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**TOTAL**

**100%**

**COMMENTS:**

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