

Operations Management

Course Syllabus COR1-GB.2314 – Summer II - 2018
(Subject to Minor Revisions)

COURSE DESCRIPTION:

Operations management is concerned with the systematic design, management and improvement of the processes that transform inputs into finished goods or services. Operations is one of the primary functions of a firm; as marketing induces the demand for products and finance provides the capital, operations produces and delivers the good or the services. This course provides a foundation for understanding the operations of a firm as a competitive advantage. The objective of the course is to provide you with the basic skills necessary to critically analyze a firm's operating performance and practices. Unlike many courses, which tend to treat the firm as a "black box", we will be primarily concerned with "opening up" that box and discovering what makes a firm "tick" - or, for that matter, "stop ticking".

We adopt in this course a process view approach that applies across industries. Through our class discussions, we cover a selected set of topics that are fundamental to understanding operations in general. These concepts and techniques are then illustrated using cases from a diverse set of businesses.

INSTRUCTOR Contacts: **Victor F. Araman**

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Office Hours: by appointment

MEETINGS:

Sat | Su: 9:00am-4:00pm

Room: TBA

(except for the beer game - TBA)

TEACHING ASSISTANT:

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Office hours: Saturday 5:00pm by appointment

TEXT: Required material:

- **Case Pack** available in the bookstore and contains all cases that will be discussed in class

Other Operations Management References (**Optional**):

- **Operations and Supply Chain Management (14th Edition)**, by Jacobs and Chase, Irwin / McGraw-Hill. Customized book from bookstore.
Name of some NYU instructors appear on the front page – while the authors of the original book are listed inside the book. (page #s below are based on 13th edition)
- **“The Goal: A Process of Ongoing Improvement”**, third revised edition (buy in bookstore), by Eliyahu Goldratt and Jeff Cox, North River Press, Inc.
If you buy it: it is recommended that you read it by the end of the first week of class

Grading scheme:

Class Participation 25%

Inc. also case studies write-ups

Group* Assignments 35%

(Each group is made of 2 students)

Inc. three assignments

The third one is due after the course ends

Final Exam 40%

In class

Module I: Introduction to Operating Systems: Process Design and Analysis

Session 1&2: Introduction to Operations Management

Ch. 1 p. 2-18 and Ch. 2 p. 20-36

- ▶ Operations Strategy and Sustainability
- ▶ Operating Processes

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

1. Describe Benihana as an operating system. (Draw a process flow diagram.) List the relevant inputs, process, and output elements in three columns.
2. How does the operating system support the Benihana concept? (operating system means just how the system at Benihana functions)
3. Which parameters of the operating system influence the throughput of a Benihana Restaurant?
4. How does the cost structure of a Benihana restaurant compare with that of a typical American restaurant? How does Benihana get its competitive advantage?
5. What is the proper relationship between the number of tables in the dining room and number of seats at the bar? Assume the goal is to keep on average the customer 24 minutes at the bar

Submit your answers to questions 2. and 3. (max. one page)

Session 3: Process Design and Process Analysis

Ch. 5 p. 109-114 | Ch. 23 p. 618-631

- ▶ Product-Process matrix
- ▶ New Product Development
- ▶ Flow Diagram | Gantt Chart
- ▶ Capacity | Flow Time | Cycle Time | Bottleneck
- ▶ Multi-product analysis

Case assignments:

- *Kristen's Cookie Company*, Roger Bohn, Harvard Business School (1990).

Read, analyze, and be prepared to discuss this case, utilizing the six key questions at the end as guides

Submit your answers to questions 1. and 2. (max. one page)

- *Belzea Natural*, Besbes O., Fraiman N.M., Olivares M.J., Weintraub G. Columbia Business School (2012)

Read, analyze, and be prepared to discuss this case

1. How does Belzea Natural structure its processes to support its business strategy?
2. Consider the Madureira Institute. Ignoring the evaluation steps for new customers, draw the process flow diagram associated with the operations.

Nothing to submit

Sessions 4&5: Optimal Resource Allocation

Appendix A p. 692-711

- ▶ Optimization framework
- ▶ Linear programming – Excel formulation
- ▶ Sensitivity Analysis including shadow prices and reduced costs

Module II: Managing for Competitive Advantage: Time Responsiveness and Inventory Management

Sessions 5&6: Flow Time Management

Ch. 4 p. 72-91

- ▶ CPM & PERT
- ▶ Project Crashing

Sessions 7&8: Managing Delays – Waiting Lines & the Effect of Uncertainty

Ch. 10 p. 221-240

- ▶ Models for Waiting-Lines
 - Service Characteristics
 - System’s Performance
 - Costs trade-offs
- ▶ Psychology of “Queues”

Case assignment:

- *The BAT Case: Putting Tech Support on the Fast Track*, M. Lariviere, Kellogg School of Management (2007)

Read, analyze, and be prepared to discuss this case, utilizing the questions at the end as guides. **Submit your answers to questions 1. and 2. (max. one page)**

Sessions 9&10: Inventory in Action

Ch. 16 p. 399-403

- ▶ **The Beer Game (Presence is required – Day 5 | pm)**

Inventory Concepts, Models and Beyond

Ch. 20 p. 513-539

- ▶ Importance of Inventory | Inventory Measures
- ▶ Deterministic Models: EOQ and Periodic Review Models
- ▶ Inventory Management under uncertainty
 - Adjusted EOQ
 - Newsvendor model with applications in retail
 - Revenue Management
- ▶ Notions of SCM

Case assignment:

- *L.L. Bean, Inc. Item forecasting and Inventory Management*, Arthur Schleifer Jr (1992)

Read, analyze and be prepared to discuss the *L.L. Bean, Inc.* case

1. What are the issues with the forecasting process
2. L.L. Bean, Inc. is able to track the actual demand faced by its items. What are the advantages of such capability?

Submit your answers to questions 1. and 2. (max. one page)

Module III: Closing the Loop through Quality Management. Supply Chain Management and the World Beyond Operations

Sessions 10&11: Quality as a Strategic Issue

Ch. 12 p. 295-310 and Ch. 13 p. 317-334 Ch. 14 p. 346-357

- ▶ Quality – Its Definition and Basis for Competition
- ▶ Natural and Assignable Defects
- ▶ Total Quality management: principles and approach
- ▶ Six sigma: a statistical tool and beyond
- ▶ Process Capability
- ▶ Quality in Services (a service management framework)
- ▶ Quality Gap

- *The Ritz Carlton: Using Information Systems to Better Serve the Customer* N. Klein W. Sasser and T. Jones, Harvard Business School (1994)

Read, analyze, and be prepared to discuss this case.

Where is the “manufacturing approach to services” illustrated in the case?

Submit your answer to the above question (max. one page)

Case assignment: - ONLY if TIME PERMITS

- *Toyota Motor Manufacturing, USA, INC.*, Kazuhiro Mishina and Kazunori Takeda, Harvard Business School (1995) (NOT in the coursepack. It will to be purchased and covered if time permits)

Read, analyze, and be prepared to discuss the case in class

1. What are the issues with the seat installation
2. What should Doug Friesen do?
3. What is really the concept of TPS about?

Session 12: In Class-Final Exam

DETAILED SCHEDULE

Modules	Sessions	Sessions	Readings	Important Dates
Production Processes	Introduction to OM Case: Benihana	1-2	Ch. 1&2 p. 2-18 20-33 Case	8/16: Submit* Benihana Case questions
	Process view and process analysis Case: Kristen's cookies co. Case: The Panama Canal Effect	3	Ch. 5 p. 106-128 Case	8/18: Submit* Kristen's Cookies Case questions
Optimal Resource Allocation	Resource allocation	4-5	Appdix A p. 716-735	
Flow Time Management	CPM and PERT	5-6	Ch. 10 p. 334-359	
Waiting Lines	Queueing Models	6-7	Ch. 7A p. 238-258	8/23: Submit* Assignment 1
	Case: The BAT Case	8	Case	8/23: Submit* BAT Case questions
Inventory Management	Inventory Management Case: LL Bean Company	8-10	Ch. 17 p. 554-582 Case	8/25: Submit* LL Bean Case questions
Quality and Supply Chain Management	Playing the Beer Game	9		
	Quality: TQM and Six Sigma Quality of Services Case: Ritz Carlton	11	Ch. 9 p. 284-300 328-332 Case	8/26: Submit* Assignment 2 8/26: Submit* Ritz Carlton Case questions
	Case: Toyota Motor Manufacturing – if time permits	11	Ch. 9A p.328-332 Case	
The End	Wrap up	11		
	Final Exam: In Class	12	August 28. 6-9pm	
				8/30: Submit Assignment 3

Note: All Submissions (except for Assignment 3), unless mentioned otherwise, are HARD copies due at the beginning of class. Please do not email them!