MGT/P 252: Managing for Operational Excellence
Spring 2018

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Class Schedule: MGT 252 Thursday 9:00-11:50am (GH-1213); MGP 252 Thursday 6:00-9:00pm (MC-2222)
Office Hours: Thursday 1:00-2:00pm or by appointment

Course Description
Operations management is concerned with the production and delivery of goods and services to meet customers' demands. It is one of the central functions of every business, government agency, and non-for-profit organization. Operational excellence can provide an important competitive advantage for firms in today's marketplace. It has long been realized that the operations must integrate into the overall corporate strategy and planning to achieve such an advantage. Therefore, a solid understanding of operations management is important for all managers, and a working knowledge about the operations function of a firm is an integral part of your MBA education.

The objective of this course is to study the core concepts in operations management. Successful companies must be able to develop and manage efficient business processes that are capable of delivering high-quality products and services to meet their ever-changing customer demands in a timely and cost-effective manner. We thus can view operations management as the design and management of effective business processes. Therefore, this course will focus on a number of concepts and techniques for analyzing and improving business process performance. Through critical analysis of business processes, you will gain a good understanding of the major issues that are critical to the successful management of both manufacturing and service operations.

This course provides a blend of qualitative and quantitative treatment for understanding process performance and operations issues. A combination of lectures, cases, videos and in-class exercises will be used to convey the basic concepts.

Course Materials
Packet of cases and readings (*Study.net*):

1. Kristen's Cookie Co. (A) (Abridged) (HBS, 9-608-037)
2. Natural Blends Inc. (HBS, 9-698-012)
3. Toyota Motor Manufacturing, U.S.A., Inc. (HBS, 9-693-019)
4. What Is the Right Supply Chain for Your Products? (HBR article, Product number 97205-PDF-ENG)

Textbook: *Matching Supply with Demand: An Introduction to Operations Management* by Cachon and Terwiesch, McGraw-Hill/Irwin, 3rd edition 2012. ISBN-10: 0073525200 ISBN-13: 978-0073525204.
Textbook is optional. You might consider renting the textbook from Amazon or other vendors. Previous editions of the textbook would also work.

Grading

Individual Homework (3 @ 5%)	15%
Individual Case Write-up (1 @ 5%)	5%
Group Case (2 @ 10%)	20%
Group Project	15%
Class Participation	5%
Final Exam	40%

Assignments are due at the beginning of the class on the due date. Students will form a group, up to 4 members, before the end of the first week. The members of each group are jointly responsible for the group assignments. At the end of the quarter, you will be asked to evaluate the contributions of your teammates; these evaluations will influence students' grades.

Individual Case Write-up
One short (less than two pages) individual case write-up is due. This short write-up should focus on the conceptual understanding gained from reading the case and answer the questions assigned with the case.

Group Case
The group case report should answer the questions assigned with the case. Each group submits one hardcopy.

Group Project
Each group is required to observe, analyze and critique an operation/process of your choice. The operation of interest can either be a manufacturing or service process.

Guidelines:
1. The operation must be local, so that all of the team members can observe the operations in action.
2. Pick an operation of reasonable size: A one-person operation is too small to learn or the logistics operation of Wal-Mart is too large and complicated to analyze.
3. Narrow the scope to one or two key operations issues: Why the firm has so much inventory or how can the firm deliver its order in such a small timeframe?
4. Learn from either the good or the bad: The operation can be in chaos where the team studies the associated challenges, or the operation can be a best practice, where the team studies the tricks to achieve operational excellence (or most likely, somewhere in between).
5. Identify some quantifiable measures to evaluate the operational performance. Understand what aspects of the operation drive the underlying performance.
6. Suggest ways to improve the underlying operation and discuss any implementation challenges.

Each group is required to submit a one-page project proposal in **Week 6**. A written report is due in class in **Week 10.** Your report will be graded on its professionalism, in addition to its content. It must be clear, concise, and well-organized. The report should be **no more than 6 double-spaced pages**, plus exhibits. Make good use of exhibits such as tables and figures to support your analysis wherever appropriate.

Each group will make a 5-minute informal presentation in **Week 10** to share the main issues, your key findings, and highlight the major takeaways for your classmates from your project experience.

Class Participation
In-class participation requires you to be active and participate in class. The class participation grade is based on the quality of each student's contribution. Good questions, relevant experiences, points that build on previous points and insights into the business issue under discussion are the best forms of participation.

Final Exam
The final exam is closed-book, closed-notes, closed-computer. You can consult a one page "cheat sheet" (double sided ok). There is no make-up exam.

Case Preparation Questions

Kristen's Cookie Co. (A) (Abridged) (HBS, 9-608-037)
Assume the role of Kristen as you answer the following questions. For simplicity, assume for now that all orders are for one dozen cookies.

1. How long will it take you to fill an isolated rush order? In other words, what is the flow time: the time (in minutes) it takes to "produce" a batch of a dozen cookies from start to finish?
2. Identify how the various resources (you, your roommate, the oven, the baking trays, and the mixing bowl) are occupied over this flow time.
3. Assuming there are multiple trays because trays are cheap, calculate the capacity (measured in dozens/hour) of your cookie-making process, in "steady state" (*i.e., around 9 PM, so that you can ignore the inefficiencies in starting up and shutting* down the process). Identify the *bottleneck resource that limits your overall cookie production* capacity.
4. Calculate the utilization (in percent) for the three main resources (you, your roommate, and the oven), assuming that you are operating at full capacity and you're operating in "steady state," around 9 PM.
5. Under what conditions (if any) does it make sense to give a quantity discount to customers who order two or three dozen cookies? Does your answer depend on whether the cookies are identical or of differing types?

6. What changes could you make in the cookie production process to increase its capacity? To reduce the flow time? Would it help to hire a third person? To rent a second oven?
7. What would happen if your roommate moved out, and you had to do this by yourself? In particular, how (if at all) do your flow time and production capacity change?

Toyota Motor Manufacturing, U.S.A., Inc. (HBS, 9-693-019)

In class, we will discuss where, if at all, the current routine for handling defective seats deviate from the principles of the Toyota Production System. In your write-up, please focus on the questions below:

1. You are Doug Friesen. What concrete actions are you going to take on Monday morning (May 4) to address the seat problem? (The case describes a series of meetings held on Friday May 1, and the exhibits summarize the information obtained through those meeting. So, please do not offer an answer such as: "I would talk to so-and-so" or "I would hold a meeting with so-and-so". Your boss wants *action*.) As a more general matter, where would you focus your attention and solution efforts?
2. What is the cause of the seat problem?
3. What is the real problem (i.e., the deeper underlying problem) facing Doug Friesen?

Course Schedule (subject to change)

Session	MGT/P 252	Topic	Assignment Due
1	4/5	Introduction, Syllabus Textbook: Ch. 1, 2.2-2.4, 2.6 Strategy and Process Choice	
2	4/12	Process Analysis, Capacity Analysis Bottlenecks, Process Capacity and Flow Rate Textbook: Ch. 3.1-3.4	HW #1 (Little's Law)
3	4/19	Case: Kristen's Cookie Company Process Variability: Waiting Time Problems Variability on Process Performance Textbook: Ch. 8	Group Case: Kristen's Cookie
4	4/26	Inventory Management (EOQ Model) Textbook: Ch. 2.5, 7	Group Case: Natural Blends
5	5/3	Newsvendor Model and Forecasting Textbook: Ch. 12.1-12.5, 12.7	HW #2 (Waiting Time, EOQ)
6	5/10	Linear Programming & Constrained Optimization *Solver Practice Session* (*optional*)	Group Project Proposal
7	5/17	Managing Process Quality Textbook: Ch. 10	HW #3 (Newsvendor, Linear Programming)
8	5/24	Lean operations, JIT and MRP/ERP Case: Toyota Motor Manufacturing, U.S.A. Textbook: Ch. 11	Individual Case: Toyota
9	5/31	Supply Chain Management, The Beer Game HBR Article: What Is the Right Supply Chain…? Textbook: Ch. 17.1-17.2	
10	6/7	Project Management Textbook: Ch. 5 Group Project Presentation	Group Project Report
Final	6/14		