

# Syllabus- Operations Management

## (PADM-GP 2173-001)

### Course Information

**Instructor:** Cassandra L. Thiel, [clt5@nyu.edu](mailto:clt5@nyu.edu)

**Office Location:** Puck 3071

**Office Hours (variable):** by appointment

**Administrative Assistant:** Harry Boadu, [hb1024@nyu.edu](mailto:hb1024@nyu.edu)

**Class Date:** Mondays 4:55-6:35pm

**Class Location:** Global Center for Academic and Spiritual Life (GCASL) on Washington Square, Room 279

### Course Description and Objectives

This course provides a general introduction to operations management (OM), or the production and delivery of goods and services. Students will learn to observe and analyze an organization from a systems- or process-perspective. From this lens, students will learn to design, operate, and improve the systems that deliver goods and services through OM tools such as process flow diagrams, lean management, and decision trees. Ultimately, this course aims to familiarize students with the major operational issues that confront managers, and provide them with the basic language, concepts, insights, and analytical tools to deal with these issues. This course will cover the following topics:

#### Operations Strategy

- Operations Strategy
- Decision Analysis
- Consulting & Reengineering

#### Operations Analysis

- Process Analysis
- Waiting & Queues

#### Operations Design

- Service Operations
- Lean Production Systems
- Supply Chain Management

#### Operations Planning and Control

- Inventory Management
- Forecasting
- Quality Management: Six Sigma

These topics will be explored through readings, class discussions, lecture, assignments, and case studies from a wide variety of public sector application areas, including education, hospital administration, social services and more.

## Prerequisites

- **CORE-GP.1020** Managing Public Service Organizations (MPSO). This is a core course and the gateway to the broader management curriculum.
- **CORE-GP.1011** Statistical Methods for Public, Nonprofit, and Health Management or equivalent knowledge.
- **Excel Knowledge** *Expected knowledge includes but is not limited to the following:* Entering Data; Fill Down; Locking Cells (\$); Using Formulas (e.g., AVERAGE, SUM, etc.); Advanced Formulas (e.g., IF, COUNTIF, AVERAGEIF, VLOOKUP, etc.); Formatting; Printing with appropriate formatting; Creating Charts.

**Wagner offers** a non-credit, 3-session MS Excel class and a one-day workshop on MS Excel. For more information, visit:

<http://wagner.nyu.edu/portal/students/academics/advisement/quantitative>

**Complete at least the “basics” and “essentials” Excel tutorials on Lynda.com**, which can be accessed by (1) going to Lynda.com and clicking “Sign In” in the upper right-hand corner and (2) choosing the bottom option of “Log in through your organization or school,” and typing ‘nyu.edu’ when prompted.

The below lists the available Excel tutorials from most basic to more advanced - select the appropriate option for the version of excel you have access to:

Topic	Excel 2016 or Office 365	Excel 2013	Excel 2010 or earlier
<b>Basics</b>	<a href="#">Learn Excel 2016: The Basics</a> or <a href="#">Office 365: Learn Excel</a>		<a href="#">Learn Excel 2010: The Basics</a>
<b>Essentials</b>	<a href="#">Excel 2016 Essential Training</a> or <a href="#">Office 365: Excel Essential Training</a>	<a href="#">Excel 2013 Essential Training</a>	<a href="#">Excel 2010 Essential Training</a> or <a href="#">Excel 2007 Essential Training</a>
<b>Charts</b>	<a href="#">Excel 2016: Charts in Depth</a>	<a href="#">Excel 2013: Working with Charts and Graphs</a> or <a href="#">Excel 2013: Charts in Depth</a>	
<b>Advanced</b>	<a href="#">Excel 2016: Advanced Formatting Techniques</a> and <a href="#">Excel 2016: Advanced Formulas and Functions</a>	<a href="#">Excel 2013: Advanced Formatting Techniques</a> and <a href="#">Excel 2013: Advanced Formulas and Functions</a>	<a href="#">Excel 2010: Advanced Formulas and Functions</a> or <a href="#">Excel 2007: Advanced Formulas and Functions</a>
<b>Tips</b>	<a href="#">Excel Tips Weekly</a> or <a href="#">Excel 2016 Tips and Tricks</a>	<a href="#">Excel 2013 Tips and Tricks</a>	

## Course Text and Materials

There is no required textbook for this course. The required readings will come from the following two sources:

- **NYU Classes** will be used to post readings and assignments throughout the semester. Students are encouraged to check it frequently. Many of the readings listed in this syllabus can be found online. In such cases, URLs are specified here and links can also be found on NYU Classes.
- A **Harvard Business Publishing (HBP) coursepack** with the root beer game and some case readings accessible at this link: <http://cb.hbsp.harvard.edu/cbmp/access/66078474>  
Note: we will be reading ALL materials listed in the coursepack. Some readings have been listed as optional in case you have already downloaded them for a previous class.

The course materials will be mostly drawn from the following three books, which are NOT REQUIRED but may be of interest to students interested in learning more about specific topics:

- Jacobs, F.R. & R.B. Chase. (2010). Operations and Supply Chain Management (13th edition). Boston: McGraw-Hill Irwin.
- G. Cachon and C. Terwiesch. Matching Supply with Demand: An Introduction to Operations Management (3rd Ed). McGraw-Hill. 2013
- Y.A. Ozcan. Quantitative Methods in Health Care Management: Techniques and Applications (2nd Ed). Jossey-Bass. 2009

## Course Grading and Requirements

In this course, we will develop an understanding of operations management through lecture, reading, and the case study method. Final grades are determined by the following course components:

- **Assignments (50%)** **Individual or Team**  
There will be five assignments, each worth 10% of your grade. These are an important part of this course as they solidify the concepts we learn in class. *Team work is encouraged on assignments.* Teams should be four or fewer student, and such teams should submit only one assignment.
- **Take-Home Midterm Exam (15%)** **Individual**  
This exam will be completed individually.
- **Introduction to Supply Chain Management Simulation: Root Beer Game V2 (5%)** **Individual**  
In this fast-paced, multi-player simulation, students experience the effects of a supply chain dynamic called the "bullwhip" effect. Students play one of four roles in a root beer supply chain: factory, distributor, wholesaler, or retailer. In each simulated week, they must examine inventory, anticipate demand, and send orders to the adjacent connection in the supply chain. Each student attempts to minimize inventory carrying costs while avoiding costly inventory shortages. Students must make rapid ordering decisions while dealing with limited information, a lack of demand visibility, and shipping delays.
- **Take-Home Final Exam (15%)** **Individual**  
This exam will be completed individually; there is to be NO collaboration or discussion with your classmates or any other person in any way.
- **Classroom Participation (15%)** **Individual**  
You are expected not only to attend class, but to be an *active* participant! This means being engaged, asking questions, bringing critical discussion, and enjoying it. 😊

## Course Policies

**Assignments and Exam Submission.** All homeworks, group write-ups, and final exam answers should be submitted electronically through NYU Classes, unless otherwise noted in class. Each should be properly labeled with your name (teammates' names), the course number, the assignment number, and the date.

**Attendance.** You should arrive to class on time with all pre-requisite readings or assignments completed. Any absence must be explained and justified *beforehand*.

**Late assignments.** Extensions will be granted only in case of an emergency, out of respect for those who abide by deadlines despite hectic schedules. Late submissions *without prior permission* will be penalized by 10% of the grade per day (so if you are 1 day late and would have scored 100%, your grade is 90%).

**Students with disabilities.** Any students requiring accommodation should contact me to make proper arrangements. Please be prepared to share your documentation from the NYU Moses Center for Students with Disabilities (<https://www.nyu.edu/life/safety-health-wellness/studentswith-disabilities.html>).

**NYU/Wagner grading policy:** <http://wagner.nyu.edu/students/policies/grading>

**NYU/Wagner academic integrity policy:** <http://wagner.nyu.edu/portal/students/policies/code>

## Course Calendar (Schedule at a Glance)

#	Date	Description	Assignments (Due at Start of Class)
1	9/11	Course Overview and Intro to Operations Strategy	
2	9/18	Lean Production Systems – GUEST LECTURE	
3	9/25	Process Analysis I	
4	10/2	Process Analysis II	1: Process Analysis*
5	10/9	Columbus Day (Fall Recess) – NO CLASS	
	10/16	Service Operations	
6	10/23	Waiting and Queues I	2: Service Operations
7	10/30	Waiting and Queues II	<i>Midterm Exam Distributed</i>
8	11/6	Supply Chain – Root Beer Game Online – NO CLASS	Midterm Exam Due
9	11/13	Supply Chain Management	3: Waiting & Queues
10	11/20	Inventory Management	
11	11/27	Forecasting	4: Supply Chain & Inventory
12	12/4	Decision Analysis	
13	12/11	Quality Management: Six Sigma – GUEST LECTURE	5: Forecasting & Decision Trees
14	12/12	Review and Reflection	<i>Final Exam Distributed</i>
	12/20	FINALS WEEK – NO CLASS	FINAL EXAM DUE (WEDNESDAY 12/20)

\*Assignment 1: Process Analysis is due at noon on the Friday of this week.

## Course Schedule

Please note: the topics covered here are subject to change throughout the semester depending on students' overall progress, understanding, and interests in course material. All non-HBR readings can be found in the "Resources" folder of this course in NYU Classes; all CASES can be purchased in the HBR Coursepack. (Abbreviations: HBR = Harvard Business Review; OM = Operations Management)

#	Date	Broad Topic	Readings Issued	Readings Due (start of class)	Homework Assigned	Homework Due Online (start of class)
1	11-Sep	Course Overview and Intro to Operations Strategy	<ul style="list-style-type: none"> <li>• Student Survey</li> <li>• CASE: Decoding the DNA: Toyota Production Systems</li> <li>• CASE: Virginia Mason Medical Center (skim this)</li> <li>• ThedaCare</li> </ul>			
2	18-Sep	Lean Production Systems - GUEST LECTURE	<ul style="list-style-type: none"> <li>• HBR Coursepack: OM Reading: Process Analysis</li> <li>• Optional: Polaris, Shaw</li> </ul>	<ul style="list-style-type: none"> <li>• Complete the Student Survey</li> <li>• CASE: Decoding the DNA: Toyota Production Systems</li> <li>• CASE: Virginia Mason Medical Center (skim this)</li> <li>• Thedacare</li> </ul>		
3	25-Sep	Process Analysis I: Systems Lens	<ul style="list-style-type: none"> <li>• CASE: Aravind Eye Hospital, In Service of Sight</li> <li>• Little's Law</li> <li>• Optional: Wharton, TED talk video on Aravind</li> </ul>	<ul style="list-style-type: none"> <li>• HBR Coursepack: OM Reading: Process Analysis</li> </ul>	1: Process Analysis	
4	2-Oct	Process Analysis II: Systems Analysis	<ul style="list-style-type: none"> <li>• CASE: The Dabbawala System</li> <li>• Breaking the tradeoff</li> <li>• Customer-centered innovation map</li> <li>• Service Blueprinting</li> </ul>	<ul style="list-style-type: none"> <li>• CASE: Aravind Eye Hospital, In Service of Sight</li> <li>• Little's Law</li> <li>• HBR Coursepack: OM Reading: Process Analysis</li> </ul>		1: Process Analysis (DUE FRIDAY THIS WEEK)
	9-Oct	FALL BREAK – NO CLASS				

5	16-Oct	Service Operations	<ul style="list-style-type: none"> <li>• Revisit CASE: Aravind Eye Hospital: In Service of Sight</li> <li>• HBR Coursepack: OM Reading: Managing Queues</li> <li>• NPR on the VA</li> </ul>	<ul style="list-style-type: none"> <li>• CASE: The Dabbawala System</li> <li>• Breaking the tradeoff</li> <li>• Customer-centered innovation map</li> <li>• Service Blueprinting</li> </ul>	2: Service Operations	
6	23-Oct	Waiting and Queues I: Managing Actual Wait Times	<ul style="list-style-type: none"> <li>• Designing Waits that Work</li> <li>• While Customers Wait, Add Value</li> <li>• VIDEO: Disney Lines</li> <li>• Why Waiting in Line is Torture</li> <li>• LINK: WBUR: Doctor says it won't hurt</li> <li>• Self-service kiosks</li> </ul>	<ul style="list-style-type: none"> <li>• Revisit ARAVIND case</li> <li>• HBR Coursepack: OM Reading: Managing Queues</li> <li>• NPR on the VA</li> </ul>	3: Waiting and Queues	2: Service Operations
7	30-Oct	Waiting and Queues II: Managing Perceived Wait Times	<ul style="list-style-type: none"> <li>• VIDEO: ASU Module 1</li> <li>• Effective Supply Chain Management</li> <li>• The Supply-Chain Management Effect</li> </ul>	<ul style="list-style-type: none"> <li>• HBR Coursepack: OM Reading: Managing Queues</li> <li>• Designing Waits that Work</li> <li>• While Customers Wait, Add Value</li> <li>• VIDEO: Disney Lines</li> <li>• Why Waiting in Line is Torture</li> <li>• LINK: WBUR: Doctor says it won't hurt</li> <li>• Self-service kiosks</li> </ul>	Midterm Exam	
8	6-Nov	Supply Chain Management - <u>Online</u> Root Beer Game NO CLASS	<ul style="list-style-type: none"> <li>• CASE: Unsafe for Children: Mattel's Toy Recall</li> <li>• The Bullwhip Effect in Supply Chains</li> <li>• Managing Supply Chain Inventory</li> <li>• Forbes – Building Sustainable and Ethical Supply Chain</li> </ul>	<ul style="list-style-type: none"> <li>• VIDEO: ASU Module 1</li> <li>• Effective Supply Chain Management</li> <li>• The Supply-Chain Management Effect</li> </ul>		Midterm Exam

			<ul style="list-style-type: none"> <li>Expanding your ethics to Suppliers</li> </ul>			
9	13-Nov	Supply Chain Management	<ul style="list-style-type: none"> <li>Crack the Code: Safety Stock</li> <li>VIDEO: TEYCSYS - Supply Chain Management System for Hospitals and IDNs</li> <li>Wikipedia ABC Analysis</li> </ul>	<ul style="list-style-type: none"> <li>CASE: Unsafe for Children: Mattel's Toy Recall</li> <li>The Bullwhip Effect in Supply Chains</li> <li>Managing Supply Chain Inventory</li> <li>Forbes – Building Sustainable and Ethical Supply Chain</li> <li>Expanding your ethics to Suppliers</li> </ul>	4: Supply Chain and Inventory	3: Waiting and Queues
10	20-Nov	Inventory Management	<ul style="list-style-type: none"> <li>E-book: Forecasting (sections 1/1 – 1/4; 2/1 – 2/3; 2/5; 3/1 – 3/8; 7/1-7/3)</li> <li>The Delphi technique – making sense of consensus</li> <li>The Delphi technique – step by step guide</li> </ul>	<ul style="list-style-type: none"> <li>Crack the Code: Safety Stock</li> <li>VIDEO: TEYCSYS - Supply Chain Management System for Hospitals and IDNs</li> <li>Wikipedia ABC Analysis</li> </ul>		
11	27-Nov	Forecasting	<ul style="list-style-type: none"> <li>Decision Tree Primer</li> <li>Video: Worked Decision Tree Example</li> <li>E-course: decision trees (video/audio optional)</li> </ul>	<ul style="list-style-type: none"> <li>E-book: Forecasting (sections 1/1 – 1/4; 2/1 – 2/3; 2/5; 3/1 – 3/8; 7/1-7/3)</li> <li>The Delphi technique – making sense of consensus</li> <li>The Delphi technique – step by step guide</li> </ul>	5: Forecasting and Decision Trees	4: Supply Chain and Inventory
12	4-Dec	Decision Analysis	<ul style="list-style-type: none"> <li>Revisit Decoding the DNA: Toyota Production Systems CASE</li> <li>6S goes to Washington</li> <li>EITHER: (1) applying LSS and</li> </ul>	<ul style="list-style-type: none"> <li>Decision Tree Primer</li> <li>Video: Worked Decision Tree Example</li> <li>E-course: decision trees (video/audio optional)</li> </ul>		

			TRIZ to banking <u>OR</u> (2) Use of LSS to improve OR			
13	11-Dec	Quality Management: Six Sigma – GUEST LECTURE	<ul style="list-style-type: none"> <li>• Revisit Virginia Mason CASE</li> </ul>	<ul style="list-style-type: none"> <li>• Revisit Decoding the DNA: Toyota Production Systems CASE</li> <li>• 6S goes to Washington</li> <li>• <u>EITHER</u>: (1) applying LSS and TRIZ to banking <u>OR</u> (2) Use of LSS to improve OR</li> </ul>		5: Forecasting and Decision Trees
14	12-Dec	Review and Reflection		<ul style="list-style-type: none"> <li>• Revisit Virginia Mason CASE</li> </ul>	Final Exam	
	20 Dec	NO CLASS - FINAL EXAM DUE			Final Exam (due 20 Dec, Wednesday)	