



**NYU**

**ROBERT F. WAGNER GRADUATE  
SCHOOL OF PUBLIC SERVICE**

**PADM-GP 2173-001**

**Operations Management**

**Fall 2019**

### **Instructor Information**

- Instructor: Cassandra L. Thiel, [clt5@nyu.edu](mailto:clt5@nyu.edu)
- Office Location: Puck 3071
- Office Hours: by appointment (either in Puck office or NYULH office on 30<sup>th</sup> & 2<sup>nd</sup>)
- Administrative Assistant: Harry Boadu, [hb1024@nyu.edu](mailto:hb1024@nyu.edu)
- Class Date: Mondays 4:55-6:35pm
- Class Location: Bobst Library (70 Washington Sq. S.), LL150

### **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, and Consulting & Reengineering)
- Operations Analysis (Process Analysis and Waiting & Queues)
- Operations Design (Service Operations, Lean Production Systems, and Supply Chain Management)
- Operations Planning and Control (Inventory Management, Forecasting, and 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.

## Learning Objectives

By the end of this course, students should be able to:

- Employ a 'systems lens' view to analyze various processes
- Map service industries using process analysis
- Calculate waiting times and queue sizes, given simple queueing model parameters
- Understand supply chain management strategies and relevant calculations
- Analyze trends in data to estimate product demand
- Identify and quantify the performance characteristics of a system
- Draw and utilize a decision tree
- Identify the wastes and test efficiencies of a process using Lean and 6Sigma
- Develop strategies to discuss and improve service delivery

## Learning Assessment Table

Course Learning Objective Covered	Corresponding Assignment Title
Employ a 'systems lens' view of various processes Identify and quantify the performance characteristics of a system	Process Analysis
Map service industries using process analysis Develop strategies to discuss and improve services	Service Operations
Calculate waiting times and queue sizes	Waiting & Queues
Understand supply chain management strategies and calculations	Supply Chain & Inventory
Analyze trends in data to estimate demand Draw and utilize a decision tree	Forecasting & Decision Trees

## Course Prerequisites

### **CORE-GP.1020**

Management and Leadership. 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: [Wagner MS Excel Class Information](http://wagner.nyu.edu/portal/students/academics/advisement/quantitative) (<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.

### **Basic Excel Tutorials**

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:

<b>Topic</b>	<b>Excel 2016 or Office 365</b>	<b>Excel 2013</b>	<b>Excel 2010 or earlier</b>
<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) course pack** with the root beer game and some case readings accessible at this link: [Harvard Business Publishing Course Pack](https://hbsp.harvard.edu/import/658211) (https://hbsp.harvard.edu/import/658211).

Note: we will be reading ALL materials listed in the course pack. 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. (2013). Matching Supply with Demand: An Introduction to Operations Management (3rd Ed). McGraw-Hill.
- Y.A. Ozcan. (2009). Quantitative Methods in Health Care Management: Techniques and Applications (2nd Ed). Jossey-Bass.

## 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.

### ***Inventory Basics Simulation: HBR Coursepack (5%): Individual***

In this single-player simulation, students are responsible for managing stock at a small, franchised hardware store. The simulation includes 3 scenarios for 3 items stocked in the store: wrenches, environmentally friendly paint, and rock salt. Students play 1 scenario at a time over 12 simulated weeks. Each product has a different demand pattern, and students must decide how many units to order to meet the anticipated weekly demand. The simulation allows students to develop an intuitive strategy for balancing holding costs against ordering costs while avoiding a stockout.

### ***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 homework, 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%).

### ***NYU/Wagner Grading Policy***

See the [Wagner Grading Policy](http://wagner.nyu.edu/students/policies/grading) (<http://wagner.nyu.edu/students/policies/grading>).

### ***Henry and Lucy Moses Center for Students with Disabilities at NYU***

Academic accommodations are available for students with disabilities. Please visit the [Moses Center for Students with Disabilities \(CSD\) website](#) and click on the Reasonable

Accommodations and How to Register tab or call or email CSD at (212-998-4980 or [mosescsd@nyu.edu](mailto:mosescsd@nyu.edu)) for information. Students who are requesting academic accommodations are strongly advised to reach out to the Moses Center as early as possible in the semester for assistance.

### ***Academic Integrity***

Academic integrity is a vital component of Wagner and NYU. All students enrolled in this class are required to read and abide by [Wagner's Academic Code](#). All Wagner students have already read and signed the [Wagner Academic Oath](#). Plagiarism of any form will not be tolerated and students in this class are expected to report violations to me. If any student in this class is unsure about what is expected of you and how to abide by the academic code, you should consult with me.

### ***NYU's Calendar Policy on Religious Holidays***

[NYU's Calendar Policy on Religious Holidays](#) states that members of any religious group may, without penalty, absent themselves from classes when required in compliance with their religious obligations. Please notify me in advance of religious holidays that might coincide with exams to schedule mutually acceptable alternatives.

## **Course Calendar**

	<b>Date</b>	<b>Description</b>	<b>Assignments (Due at Start of Class)</b>
1	9/9	Course Overview and Intro to Operations Strategy	None
2	9/16	Process Analysis I	Student Survey
3	9/23	Process Analysis II	None
4	9/30	Lean Production Systems – GUEST LECTURE	1: Process Analysis
5	10/7	Service Operations	None
6	10/14	Columbus Day (Fall Recess) – NO CLASS	None
	10/15	Waiting and Queues I	2: Service Operations

	Date	Description	Assignments (Due at Start of Class)
7	10/21	Waiting and Queues II	<b>Midterm Exam Distributed</b>
8	10/28	Supply Chain Management	3: Waiting & Queues
9	11/4	Inventory Management	Midterm Exam Due
10	11/11	Supply Chain – Root Beer Game Online – NO CLASS	None
11	11/18	Forecasting	4: Supply Chain & Inventory
12	11/25	Decision Analysis	None
13	12/2	Quality Management: Six Sigma – GUEST LECTURE	None
14	12/9	Review and Reflection	5: Forecasting & Decision Trees <b>Final Exam Distributed</b>
	12/16	FINALS WEEK – NO CLASS	FINAL EXAM DUE (TUESDAY 12/17 evening by 12PM midnight)

## 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. Readings have the following labels: Required (you MUST read these, and they are listed below), Required Pick 1 (you MUST read at least one of these options, based on what interests you), Optional (not required, but may be of interest), and Useful (not required, but may help you with concepts and problems in class). All CASES can be purchased in the HBR Course pack. (Abbreviations: HBR = Harvard Business Review; OM = Operations Management)

### ***Class 1: Course Overview and Intro to Operations Strategy***

Readings Issued (from Week 1 folder):

- Student Survey
- Pick 1: See list in Resources tab of NYU Classes, pick one that interests you

- Video on TPS in NYC Food Banks
- OM Reading (HBR Coursepack): Process Analysis

### ***Class 2: Process Analysis I – Systems Lens***

Reading Due at the Start of the Class:

- Complete the Student Survey
- Pick 1 Reading
- OM Reading (HBR Coursepack): Process Analysis
- Video on TPS in NYC Food Bank

Homework Assigned:

- 1: Process Analysis

Readings Issued (From week 2-3 Folder):

- CASE (HBR Coursepack): Aravind Eye Hospital, In Service of Sight
- Little's Law in the Emergency Room
- Tesla Factory Process Video

### ***Class 3: Process Analysis II - Systems Analysis***

Reading Due at the Start of the Class:

- CASE (HBR Coursepack): Aravind Eye Hospital, In Service of Sight
- Little's Law in the Emergency Room
- Tesla Factory Process Video
- OM Reading (HBR Coursepack): Process Analysis

Readings Issued (from Week 2-3 Folder):

- CASE (HBR Coursepack): Decoding the DNA: Toyota Production Systems
- CASE (HBR Coursepack): Virginia Mason Medical Center (skim this)

### ***Class 4: Lean Production Systems – Guest Lecture***

Homework Due Online at the Start of the Class:

- 1: Process Analysis

Reading Due at the Start of the Class:

- CASE (HBR Coursepack): Decoding the DNA: Toyota Production Systems
- CASE (HBR Coursepack): Virginia Mason Medical Center (skim this)

Readings Issued (from Week 4 folder):

- Shaw – The Case for Process Management
- CASE (HBR Coursepack): The Dabbawala System



### ***Class 5: Service Operations***

Readings Due at the Start of the Class:

- CASE (HBR Coursepack): The Dabbawala System
- Shaw – The Case for Process Management

Homework Assigned:

- 2: Service Operations

Readings Issued (from Week 5 Folder):

- Revisit CASE (HBR Coursepack): Aravind Eye Hospital: In Service of Sight
- OM Reading (HBR Coursepack): Managing Queues
- Breaking the Trade Off

### ***FALL BREAK (no class)***

### ***Class 6: Waiting and Queues I – Managing Actual Wait Times***

Homework Due Online at the Start of the Class:

- 2: Service Operations

Readings Due at the Start of the Class:

- Revisit ARAVIND case (HBR Coursepack)
- OM Reading (HBR Coursepack): Managing Queues
- Breaking the Trade Off

Homework Assigned:

- 3: Waiting and Queues

Readings Issued (from the Week 6-7 folder):

- Designing Waits that Work
- VIDEO: Disney Lines
- Pick 1 Reading

### ***Class 7: Waiting and Queues II – Managing Perceived Wait Times***

Readings Due at the Start of the Class:

- OM Reading (HBR Coursepack): Managing Queues
- Designing Waits that Work
- VIDEO: Disney Lines
- Pick 1 Reading

Homework Assigned:

- Midterm Exam

Readings Issued (from Week 8 Folder):

- VIDEO: ASU Module 1
- Effective Supply Chain Management
- Expanding Ethics to Suppliers

### ***Class 8: Supply Chain Management***

Homework Due Online at the Start of the Class:

- 3: Waiting and Queues

Readings Due at the Start of the Class:

- VIDEO: ASU Module 1
- Effective Supply Chain Management
- Expanding Ethics to Suppliers

Readings Issued (from Week 9-10 Folder):

- CASE (HBR Coursepack): Unsafe for Children: Mattel's Toy Recall

### ***Class 9: Inventory Management***

Homework Due Online at the Start of the Class:

- Midterm Exam

Readings Due at the Start of the Class:

- CASE (HBR Coursepack): Unsafe for Children: Mattel's Toy Recall

Homework Assigned:

- 4: Supply Chain and Inventory

Readings Issued (from Week 9-10 Folder): none (optional available)

### ***Class 10: Supply & Inventory – Online Simulation (HBR Coursepack)***

***This class is held online during the class period – we will not meet in person.***

Readings Due at the Start of the Class: none

Readings Issued: (from Week 11-12 folder)

- Four Steps to Forecast Total Market Demand
- Pick 1: See list in Resources tab of NYU Classes, pick one that interests you
- Note on Optional E-book for Forecasting, sections 1/1 – 1/4; 2/1 – 2/3; 2/5; 3/1 – 3/8; 7/1-7/3 are most relevant

### ***Class 11: Forecasting***

Homework Due Online at the Start of the Class:

- 4: Supply Chain and Inventory

Readings Due at the Start of the Class:

- Four Steps to Forecast Total Market Demand
- Pick 1 Reading

Homework Assigned:

- 5: Forecasting and Decision Trees

Readings Issued (from Week 11-12 folder):

- Optional (but highly recommended): Useful: Decision Tree Primer

### ***Class 12: Decision Analysis***

Readings Due at the Start of the Class:

- Optional (but highly recommended): Useful: Decision Tree Primer

Readings Issued (from Week 13 folder):

- Revisit Decoding the DNA: Toyota Production Systems CASE (HBR Coursepack)
- Financial Benefits of SixSigma (6S)
- Pick 1 Reading

### ***Class 13: Quality Management Six Sigma – Guest Lecture***

Homework Due Online at the Start of the Class:

- 5: Forecasting and Decision Trees

Readings Due at the Start of the Class:

- Revisit Decoding the DNA: Toyota Production Systems CASE (HBR Coursepack)
- SixSigma (6S) in Finance Dept.
- Pick 1 Reading

Readings Issued:

- Revisit Virginia Mason CASE (HBR Coursepack)

### ***Class 14: Review and Reflection***

Readings Due at the Start of the Class:

- Revisit Virginia Mason CASE (HBR Coursepack)

Homework Assigned:

- Final Exam

***Final Exam Due Online – No Class***