



**NYU**

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

**PADM-GP 2173-001**

**Operations Management**

**Fall 2023**

### **Instructor Information**

- Instructor: Rob Johnson, [rwj2022@nyu.edu](mailto:rwj2022@nyu.edu)
- Office Location: Puck 3071
- Office Hours: by appointment
- Class Date: Mondays 4:55-6:35pm
- Class Location: Bobst Room LL147

### **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, lectures, assignments and case studies from a wide variety of public sector application areas including education, healthcare, social services, international development 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 waste and test efficiencies of a process using Lean and Six Sigma
- 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, three-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:

Topic	Excel 2016 or Office 365
Basics	Learn Excel 2016: The Basics or Office 365: Learn Excel
Essentials	Excel 2016 Essential Training or Office 365: Excel Essential Training
Charts	Excel 2016: Charts in Depth
Advanced	Excel 2016: Advanced Formatting Techniques and Excel 2016: Advanced Formulas and Functions
Tips	Excel Tips Weekly or Excel 2016 Tips and Tricks

## Course Text and Materials

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

- **NYU Brightspace** 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 Brightspace.
- A **Harvard Business Publishing (HBP) course pack** accessible at this link: [Harvard Business Publishing Course Pack](#).

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 lectures, readings 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 students, and teams should submit only one assignment.

### **Take-Home Midterm Exam (15%): Individual**

This exam will be completed individually.

### **Global Supply Chain Management Simulation: HBR Coursepack (5%): Individual**

The Global Supply Chain Management Simulation is designed to teach intermediate to advanced concepts in supply chain design, demand forecasting, resource allocation and production planning. The simulation gives students an opportunity to design and manage the supply chain of a global phone manufacturer. During the simulation experience, students design the phone product line, forecast demand, choose a set of suppliers with different costs, lead-times and capacities, and allocate production among their chosen suppliers. After completing the product and supply chain design phases, students observe actual monthly demand being revealed dynamically, and have opportunities to respond to demand shifts and unexpected events. To manage the mobile phone lines successfully, students must balance competing priorities and create a supply chain that is flexible enough to react quickly to fluctuating demand. The simulation is repeated over a four-year period, allowing students an opportunity to refine their decision processes each year after learning from the feedback they receive about the previous year's results.

### **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 and bringing critical discussion.

## Course Policies

### Assignments and Exam Submission

All homework, group write-ups and final exam answers should be submitted electronically through NYU Brightspace, unless otherwise noted in class. Each should be properly labeled with your name (and 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 one day late and would have scored 100%, your grade would be 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

	Date	Description	Assignments (Due at Start of Class)
1	9/11	Course Overview and Intro to Operations Strategy	None
2	9/18	Process Analysis I	Student Survey
3	9/25	Process Analysis II	None
4	10/2	Service Operations	1: Process Analysis
5	10/10	Lean Production Systems	None
6	10/16	Waiting and Queues I	2: Service Operations
7	10/23	Waiting and Queues II	<b>Midterm Exam Distributed</b>
8	10/30	Supply Chain Management	3: Waiting & Queues
9	11/6	Inventory Management	Midterm Exam Due
10	11/13	Forecasting	None
11	11/20	Global Supply Chain Management Simulation	4: Supply Chain & Inventory
12	11/27	Decision Analysis	None
13	12/4	Quality Management and Six Sigma	None
14	12/11	Review and Reflection	5: Forecasting & Decision Trees <b>Final Exam Distributed</b>
		FINALS WEEK – NO CLASS	FINAL EXAM DUE (WEDNESDAY 12/20 evening by 11:59PM)

## 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 on NYU Brightspace (Weeks Content). 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

Reading assigned:

- Student survey
- 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 class:

- Complete the student survey
- OM Reading (HBR Coursepack): Process Analysis
- Video on TPS in NYC Food Bank

Homework assigned:

- 1: Process Analysis

Reading assigned:

- 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

### Class 3: Process Analysis II - Systems Analysis (we will meet by Zoom for this session)

Reading due at the start of 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 assigned:

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

### Class 4: Service Operations

Reading due at the start of class:

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

Homework assigned:

- 2: Service Operations

Reading assigned:

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

### **Class 5: Lean Production Systems**

Homework due online at the start of class:

- 1: Process Analysis

Reading due at the start of class:

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

Reading assigned:

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

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

Homework due online at the start of class:

- 2: Service Operations

Reading 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

Reading assigned:

- Designing Waits that Work
- VIDEO: Disney Lines

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

Reading due at the start of class:

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

Homework assigned:

- Midterm exam



Reading assigned:

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

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

Homework due online at the start of class:

- 3: Waiting and Queues

Reading due at the start of class:

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

Reading assigned:

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

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

Homework due online at the start of class:

- Midterm exam

Reading due at the start of class:

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

Homework assigned:

- 4: Supply Chain and Inventory

Reading assigned:

- Four Steps to Forecast Total Market Demand
- 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 10: Forecasting**

Reading due at the start of class:

- Four Steps to Forecast Total Market Demand

Homework assigned:

- 5: Forecasting and Decision Trees

### **Class 11: Supply & Inventory – Online Simulation (HBR Coursepack) (we will meet by Zoom for this session)**

Homework due at the start of class:

- 4: Supply Chain and Inventory

Reading assigned:

- Useful: Decision Tree Primer

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

Reading due at the start of class:

- Useful: Decision Tree Primer

Reading assigned:

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

### **Class 13: Quality Management Six Sigma**

Homework due online at the start of class:

- 5: Forecasting and Decision Trees

Reading due at the start of class:

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

Reading assigned:

- Revisit Virginia Mason CASE (HBR Coursepack)

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

Readings due at the start of class:

- Revisit Virginia Mason CASE (HBR Coursepack)

Homework assigned:

- Final exam (due online in finals week)