

NYU Stern School of Business

OPMG-UB 1-002: Operations Management

Summer 2021

**INSTRUCTOR**

**Jiashuo Jiang**

**E-mail:** jj2398@stern.nyu.edu

**Office Hours:** Wednesday 1:30 PM - 3 PM

**Office Location:** Online

**COURSE MEETINGS**

**Meeting Times:** Monday and Wednesday 9:00 AM to 12:10 PM from 7/7/2021-8/11/2021

**Location:** Zoom

**COURSE DESCRIPTION AND LEARNING GOALS**

This course is designed to provide students a better understanding of how firms can gain competitive advantage from their operations. Typically, this requires the firm to achieve, at a minimum cost and a high quality: responsiveness and adaptability to customer needs and desires, rapid time to market, process technology leadership, and sufficient/responsive capacity. A problem solving framework is developed that enables students to undertake managerial and technical analysis that aims to result in the desired competitive advantage. Both service and manufacturing case examples are covered in order to illustrate some of the main concepts.

**HOMEWORK**

Students will be assigned homeworks every week basis for each topic. The homework assignments are due on the next week. Assignments are to be handed online. Please keep a copy of all homework submitted for reference during class.

Homeworks will be graded on a scale out of 100 and will typically not be accepted late. They must be prepared individually in order to receive credit. Please write clearly or type up your homework.

**HOW TO PREPARE FOR CLASS DISCUSSIONS**

Read the cases carefully. Be prepared to be called upon to present the details of the case, or

to discuss the answers to the study questions.

## **COURSE PRE-REQUISITES**

No pre-requisites needed. The course will be self-contained.

## **COURSE OUTLINE**

This syllabus is tentative and subject to change.

### **MODULE 1: Introduction to Process Analysis and Design**

#### **July 7 SESSION 1: INTRODUCTION TO OM**

1. Introduction to Operations Management: Course Introduction and Overview.
2. The Zara Example (covered in class).

#### **July 7 SESSION 2: PROCESS ANALYSIS**

1. Read, analyze, and be prepared to discuss the Benihana of Tokyo case, which is available in the electronic coursepack. Use the following study questions as an aid in analyzing the case (you are not required to submit your answers).
  - (a) How does Benihana's operations strategy support the overall Benihana concept?
  - (b) Which parameters of Benihana's operations influence the number of customers that a Benihana restaurant can serve per unit of time?
  - (c) How does the cost structure of a Benihana restaurant compare with that of a typical American restaurant? How does Benihana gain its competitive advantage?

#### **July 9 SESSION 3: KRISTEN'S COOKIE COMPANY**

1. Read, analyze, and be prepared to discuss the Kristen's Cookie Company case, which is available in the electronic coursepack. Use the six key questions at the end of the case as a guide (you are not required to submit your answers).

#### **July 9 SESSION 4: SENATOR SWIFT**

1. Applying process analysis by using the Senator Swift case. The case will be distributed in class. No need to prepare anything.

### **MODULE 2: Time-to-Market & Responsiveness: Queuing Theory**

#### **July 14 SESSION 5: THE EFFECTS OF UNCERTAINTY - WAITING LINES**

1. Introduction to Queuing Theory.

### **July 14 SESSION 6: QUEUING THEORY IN ACTION**

1. Read, analyze, and be prepared to discuss the First City National Bank case, which is available on NYU Classes.

### **MODULE 3: Optimal Resource Allocation**

#### **July 16 SESSION 7: THE LINEAR PROGRAMMING (LP) PROBLEM**

1. Introduction to Linear Programming.

#### **July 16 SESSION 8: LP SOLUTION TECHNIQUES**

1. We will discuss two common solution techniques: enumerating the corner points and a graphical method.
2. Review carefully Session 7 before class.

#### **July 21 SESSION 9: LP SENSITIVITY ANALYSIS (USING EXCEL)**

1. Bring laptops to class.
2. Review carefully Sessions 7 and 8 before class.

#### **July 21 SESSION 10: USING THE LP MODEL: APPLICATION TO REAL-ESTATE**

1. Read, analyze, and be prepared to discuss the Otto Development Corporation case, which is available on NYU Classes.
2. Bring laptops to class.

#### **July 23 SESSION 11: REVIEW SESSION FOR THE MIDTERM**

1. Review material for the Midterm.
2. Solving together some sample problems.

#### **July 23 SESSION 12: Midterm Exam**

1. The midterm will take place during class time.

### **MODULE 4: Inventory Theory, Supply Chain Management and Revenue Management**

#### **July 28 SESSION 13: INTRODUCTION TO INVENTORY MANAGEMENT**

1. Importance of inventory management in various contexts.
2. Economic Order Quantity (EOQ) model.

#### **July 28 SESSION 14: NEWSVENDOR MODEL**

1. Introducing the Newsvendor model.

2. Read, analyze, and be prepared to discuss the L.L. Bean Inc. case, which is available in the electronic coursepack.

### **July 30 SESSION 15: INVENTORY SIMULATION GAME**

1. Read the Managing Champagne Inventory in a Liquor Store case, which is available on NYU Classes (you are not required to submit the answers to the questions at the end of the case).
2. Bring your laptop to class and download the Excel Sheet called “Inventory\_Simulation\_Inclass.xls” from NYU Classes.

### **July 30 SESSION 16: THE BEER GAME**

1. We will play the Beer Game.

### **August 4 SESSION 17: SUPPLY CHAIN CONTRACTS**

1. Introduction to supply chain management and to wholesale price contracts.
2. Bring your laptop to class and download the Excel Sheet called “SC\_contracts\_Inclass” from NYU Classes.

### **August 4 SESSION 18: REVENUE SHARING CONTRACTS**

1. Introduction to revenue sharing contracts.
2. Bring your laptop to class and download the Excel Sheet called “SC\_contracts\_Inclass” (same as last lecture).

### **August 6 SESSION 19: INTRODUCTION TO REVENUE MANAGEMENT**

1. Introduction to revenue management and its applications.

### **August 6 SESSION 20: OPTIMIZING PROMOTIONS FOR SUPERMARKETS**

1. Applying OM techniques to practice.
2. Read the Optimizing Promotions for Supermarkets using Data Analytics case, which is available on NYU Classes.

### **August 11 SESSION 21: WRAP UP AND EXAM REVIEW**

1. Summary of the course.
2. Discussing other relevant courses at NYU Stern.
3. Solving together some sample problems.

## **FINAL EXAM - August 11**

### **RECOMMENDED COURSE MATERIALS:**

**CUSTOM TEXT: COMPETITIVE ADVANTAGE FROM OPERATIONS**, Pearson Custom Publishing (available at the NYU Bookstore)

### **REQUIRED COURSE MATERIALS:**

**ELECTRONIC COURSEPACK CASES** (available at the NYU Bookstore):

- Benihana of Tokyo.
- Kristen's Cookie Company.
- Ritz-Carlton.
- L.L. Bean, Inc.

**OTHER MATERIAL** (available on NYU Classes):

- Senator Swift.
- First City National Bank.
- OTTO Development Corp.
- Managing Champagne Inventory in a Liquor Store.
- Optimizing Promotions for Supermarkets using Data Analytics.

### **OPTIONAL READING:**

**THE GOAL**, Eliyahu M. Goldratt, North River Press, Inc. 2004.

### **GRADING**

Attendance and Class Participation: 15%  
Homework: 15%  
Midterm: 30%  
Final Exam: 40%

All the exams in this course are closed book and closed notes unless otherwise indicated by the instructor. The use of a scientific calculator which does not have memory is allowed on the exams.

### **REGRADING**

The process of assigning grades is intended to be one of unbiased evaluation. Students are encouraged to respect the integrity and authority of the professor's grading system, and are discouraged from pursuing arbitrary challenges to it. If you believe an inadvertent error has been made in the grading of an assignment or in assessing an overall course grade, a request to re-evaluate the grade may be submitted. You must submit such requests in writing within 7 days of receiving the grade, including a brief written statement of why you believe that an error in grading has been made.

## **PROFESSIONAL RESPONSIBILITIES**

### **Attendance**

Class attendance is essential to your success in this course and is part of your grade. An excused absence can only be granted in cases of serious illness, grave family emergencies, or religious observance and must be documented. Job interviews and incompatible travel plans are considered unexcused absences. Please notify the instructor in advance of an excused absence.

### **Participation**

In-class contribution is a significant part of your grade, and an important part of our shared learning experience. Your active participation helps the instructor evaluate your overall performance. You can excel in this area if you come to class on time, and contribute to the course by:

- Providing strong evidence of having thought through the material.
- Advancing the discussion by sharing insightful comments and questions.
- Listening attentively in class.
- Demonstrating interest in your peers' comments and questions.

### **Assignments**

Late assignments will either not be accepted, or will incur a significant grade penalty (unless due to documented serious illness or family emergency). Exceptions to this policy will only be made when the assignment cannot reasonably be completed prior to the due date and you make arrangements for late submission in advance.

### **Classroom Norms**

The class will be held on Zoom and cameras must be turned on.

### **Midterm and Final Exam**

Both the midterm and the final exam are scheduled far in advance. Missing the midterm or the exam will translate to a grade of 0 (unless due to documented serious illness or family emergency). In addition, coming late to an exam will not grant extra time.

## **STERN POLICIES**

### **General Conduct and Behavior**

NYU Stern expects that students will conduct themselves with respect and professionalism toward faculty, students, and others present in class and will follow the rules laid down by the instructor. Students who fail to do so may be asked to leave the classroom.

Students are also expected to maintain and abide by the highest standards of professional conduct and behavior. Please familiarize yourself with Stern's Policy in Regard to In-Class Behavior and Expectations and with the NYU Disruptive Behavior policy, which may be found online.

### **ACADEMIC INTEGRITY**

Integrity is critical to the learning process at NYU Stern. As members of our community, all students agree to abide by the NYU Stern Student Code of Conduct, which includes the following:

- Exercise integrity in all aspects of one's academic work including, but not limited to, the preparation and completion of exams, papers and other course requirements by not engaging in any method or means that provides an unfair advantage.
- Clearly acknowledge the work and efforts of others when submitting written work. Ideas, data, direct quotations, paraphrasing, creative expression, or any other incorporation of the work of others should be fully referenced.
- Refrain from behaving in ways that knowingly support, assist, or in any attempt to enable another person to engage in any violation of the Code of Conduct.

The entire Stern Student Code of Conduct applies to all students enrolled in Stern courses and can be found here: <http://www.stern.nyu.edu/uc/codeofconduct>

### **RECORDING OF CLASSES**

Your class may be recorded for educational purposes.

### **STUDENTS WITH DISABILITIES**

If you have a qualified disability and require academic accommodation of any kind during this course, please notify the instructor at the beginning of the course and provide a letter from the Moses Center for Students with Disabilities (CSD, 998-4980, [www.nyu.edu/csd](http://www.nyu.edu/csd)). If you will need to take an exam at the CSD, you must submit a completed Exam Accommodations Form to the CSD at least one week prior to the scheduled exam time to be guaranteed accommodation.