BUSI 374: Operations Management

Spring 2025

Course Information

Instructor: Prof. Süleyman Kerimov
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Phone: (713) 348-4467
Office Hours: Tuesday, 4pm-5:30pm, McNair Hall 244
Meeting Times:

- Tuesday/Thursday, 1:00pm-2:15pm (Section 1)

- Tuesday/Thursday, 2:30pm-3:45pm (Section 2)

Location: McNair Hall 312
Teaching Assistants:

- Evonne Huang, erh10@rice.edu, OH: Monday, 1pm-2pm, Zoom

- Nico Motta, Nico.Motta@rice.edu, OH: Friday, 1pm-2pm, Zoom

Course Website: Canvas

Course Description

Operations management is a fundamental discipline that focuses on the effective planning of products and services, scheduling of manufacturing, and control of service entities to achieve competitive advantage and efficiency. The main goal of this course is to provide a general introduction to the design and integration of successful operations procedures both within the organization and across the supply chain. The course focuses on understanding, managing, and improving processes, and flows of products, customers, and information. This course covers a mix of qualitative concepts and quantitative techniques to deal with bottlenecks, inventory, queues, quality management, and some strategic issues in operations.

Course Objectives

On successful completion of this course, you will be able to:

- Develop an understanding of a range of problems faced in operations management,

- Understand the strategic role of operations management in different industries,

- Understand strategic and operational levels of decision making, and form an appropriate solution methodology to support these decisions,

- Learn fundamental trade-offs in inventory and supply chain management.

Faculty Introduction

Süleyman Kerimov is an Assistant Professor of Operations Management at the Jesse H. Jones Graduate School of Business at Rice University. He holds a Ph.D. in Operations Research from Stanford University (2022) and a B.S. in Mathematics from Bilkent University (2016). He is interested in market design, matching markets, online platforms, and applied probability.

Course Prerequisites

- **Required:** BUSI 395 or STAT 305 or STAT 310 or STAT 312 or STAT 315 or DSCI 301 or ECON 307.

- **Recommended:** BUSI 305 and (ECON 100 or ECON 200).

- Basic knowledge of Excel Spreadsheet.

- Prerequisites will not be waived.

Course Materials

Required:

- **Reading:** The Goal: A Business Graphic Novel, by Eliyahu M. Goldratt (Author), Dwight Jon Zimmerman (Editor), Dean Motter (Illustrator), published by North River Press Publishing Corporation, 2017, or alternatively, The Goal: A Process of Ongoing Improvement – 30th Anniversary Edition, 3rd edition, by Eliyahu M. Goldratt (Author), Jeff Cox (Author), published by North River Press, 2014.

- **Coursepack:** Harvard Business Publishing Education Coursepack.

Recommended:

Material is self-contained. However, you may find the following textbooks helpful:

1. Matching Supply with Demand: An Introduction to Operations Management, 5th Edition, by Gerard Cachon and Christian Terwiesch, published by McGraw-Hill Education, 2024.

2. Production and Operations Analysis, 8th Edition, by Steven Nahmias and Tava Lennon Olsen, published by Waveland Press, Inc., 2021.

Teams: For cases and The Goal reading assignment, you will work together in a team of 5-6 people. **Please form your teams as soon as possible on Canvas**, and try to keep your team throughout the semester. I expect each team member to work on their own solutions first and then consult with your fellows unless stated otherwise (I may occasionally ask for anonymous feedback from teams to evaluate each team member).

Evaluation and Grading Components

Your course grade will be determined according to the following weights:

- **Attendance (5%):** Attendance is important for your success in the class. Attendance will be taken every class. A student **can miss up to 3 lectures** without any penalty (excluding valid excuses such as medical, athletic competitions, etc.), and the fourth absence will result in a loss of all attendance score.

- **Class Contribution (5%):** I strongly encourage you to engage and participate in class. This is essential for our learning experience. We will have in-class exercises and regular discussions about the course material, and I expect you to contribute and be active. Get ready for cold calls. The class contribution grading component is at the instructor's discretion.

- **Homework Assignments (12%):** There will be 7 homework assignments, which will be posted on the course website. Due dates are shown on the tentative course outline below. **I will not accept any late submissions**, but your lowest homework assignment grade will be dropped. Other than the course material, **you cannot use other sources** such as the internet (see Rice University Honor Code below). You can discuss homework problems with your fellows, but all the work and your submission must be individual. **Homework is due at 11:59pm CT on the due date**.

- **Cases (8%):** There will be 2 graded cases, which are similar to homework assignments. For each case, you will answer questions about real-world business scenarios, and you will submit one report per team. **I will not accept any late submissions**. Other than the course material, **you cannot use other sources** such as the internet unless stated otherwise (see Rice University Honor Code below). **Case is due at 11:59pm CT on the due date**.

- **The Goal Reading Assignment (10%):** You should start reading the book on the first week of classes. As you read the book, write down the main ideas that you find striking. I expect you to summarize three main ideas you got from the book and indicate if and how these ideas could be used in some business context. You will submit one report per team, which should not exceed 3 pages of text (excluding figures, double spaced, 12-point font), and you will present your report in the last two weeks of classes. This is an unstructured assignment by design. I want you to be able to present your thoughts about the book and its potential implementation in any way you see fit. Other than the course material, **you cannot use other sources** such as the internet unless stated otherwise (see Rice University Honor Code below). **Report is due at 11:59pm CT on the due date**.

- **Midterm (25%) and Final (35%):** Both exams will be closed-book and closed-notes. The final exam will be comprehensive. You may bring 1 two-sided hand-written sheet of notes for the midterm and the final (8.5 x 11 inches). No electronics (except calculators) are allowed.

Course Policies

Grading

- Letter grades will be assigned following the JGSB policies, which states a mandated grade cap of 3.50 averaged across all students' grades.

- Any regrading request must be made **within three days** after grades are posted. Your request must include a detailed note about the objection. You should be aware that the entire assessment will be regraded.

- All submitted work must include the signed Honor Code pledge (see Rice University Honor Code below).

Office Hours

- Other than my weekly office hours, please do not hesitate to stop by my office whenever you see my door open to clarify the course material or discuss other issues.

- I am also happy to deal with questions and issues via email, and please send me an email if you would like to set up a time to meet.

Classroom

- Please avoid disrupting me and your fellow classmates by arriving late. Lateness, especially if it is habitual, will result in a reduction in your class contribution grade. **Please report any absences and late arrivals to me**.

- I will try to learn your names as fast as possible. To help me, please have your name cards up for the entire semester.

- Cell phones must be turned off or put on silent mode. You are requested to avoid the use of email, messaging, etc. during class.

- You are responsible for checking the Canvas course website regularly for course materials and announcements.

- Following the JGSB policies, laptops should remain closed except when instructed otherwise.

- If you are using an electronic device (e.g., a tablet) to take notes, please let me know. Any electronic device must be on airplane mode.

Syllabus Changes

- The exam and assignment deadlines in the tentative course outline, and course grade weights are **finalized and definite**.

- The rest of the information contained in this syllabus is guide for the course and may be subject to change with reasonable advance notice, as deemed appropriate by the instructor.

Use of Generative AI

- Students **are not permitted** to make use of ChatGPT or other AI composition software for any classwork.

  - Intellectual honesty is vital to an academic community and for my fair evaluation of your work.
  - This policy does not mean that I am against the use of generative AI overall. Generative AI may help you to get the correct answers for certain assignment problems (and for most of the assignment problems it will not give you the correct answer), however, that is not the main point of this course. My main goal is to teach you the theory that drives the modeling and optimization behind the decision making in various business applications. If you are dependent on generative AI (at least the current one :)), you will not be able to make adaptive decisions in business contexts that we will cover.

Academic Accommodations for Disability

If you have a documented disability or other condition that may affect academic performance, you should:

- Make sure this documentation is on file with the Disability Resource Center (Allen Center, Room 111, adarice@rice.edu, x5841) to determine the accommodations you need.

- Notify the instructor at the beginning of the term so we can discuss your accommodation needs.

Honor Code

In this course, all students will be held to the standards of the Rice Honor Code, a code that you pledged to honor when you matriculated at this institution. If you are unfamiliar with the details of this code and how it is administered, you should consult the Honor System Handbook. This handbook outlines the University's expectations for the integrity of your academic work, the procedures for resolving alleged violations of those expectations, and the rights and responsibilities of students and faculty members throughout the process. **All submitted work must include the signed Honor Code pledge**: "On my honor, I have neither given nor received any unauthorized aid on this (assignment, exam, etc.)."

Tentative Course Outline

Lecture	Date	Topic	Notes
1	Jan 14	Introduction and Course Overview	-Read the probability notes. -You should start reading The Goal.
2	Jan 16	Inventory Management with Deterministic Demand (EOQ)	-Nahmias: Ch. 4.5, 4.6 -Cachon: Ch. 5.6.
3	Jan 21	Extensions of the EOQ Model	-Nahmias: Ch. 4.7. -**HW1 out**.
4	Jan 23	Inventory Management with Uncertain Demand (Newsvendor)	-Nahmias: Ch. 5.3 Cachon: Ch. 14.
5	Jan 28	Inventory Management with Uncertain Demand ((Q,R) Systems)	-Nahmias: Ch. 5.4,5.5 -Read the Pizza Pazza Case. -**HW1 due, HW2 out**.
6	Jan 30	Capacity and Queueing	-Nahmias: Ch. 8.2. -Cachon: Ch. 3.
7	Feb 4	Capacity and Queueing	-**HW2 due, HW3 out.** -Nahmias: Ch. 8.3, 8.4, 8.5.
8	Feb 6	Capacity and Queueing	-Nahmias: Ch. 8.3, 8.4, 8.5. -Read the PATA Case.
9	Feb 11	Capacity and Queueing	-**HW3 due, BAT Case out**.
10	Feb 18	Midterm Exam Review	-**BAT Case due**.
11	Feb 20	Midterm	Midterm will be held at the class time.
12	Feb 25	Supply Chain Management	-Nahmias: Ch. 6.4.
13	Feb 27	Supply Chain Management	-Nahmias: Ch. 6.3.
14	Mar 4	Lean Operations and Quality	-Nahmias: Ch. 9. -**HW4 out.**
15	Mar 6	Lean Operations and Quality	-Nahmias: Ch. 10.
16	Mar 11	Revenue Management	-Nahmias: Ch. 8.8. -**HW4 due, LEAN Case out.**
17	Mar 13	Revenue Management	-
18	Mar 25	Market Design	-**LEAN Case due, HW5 out**.
19	Mar 27	Market Design	-
20	Apr 1	Market Design	-**HW5 due, HW6 out.**
21	Apr 3	Healthcare Operations	-
22	Apr 8	Linear Programming and Applications	-Nahmias: Ch. 3S.1. -**HW6 due.**
23	Apr 10	Linear Programming and Applications	-**HW7 out.**
24	Apr 15	Guest Lecture	-
25	Apr 17	The Goal Presentations	-**HW7 due.**
26	Apr 22	The Goal Presentations	-**The Goal assignment report due.**
27	Apr 24	Final Exam Review	-Final exam date and location TBA.