

# BUSI 731: Foundations of Operations Management

Spring 2024

## Course Information

**Instructor:** Prof. Süleyman Kerimov

**Email:** kerimov@rice.edu

**Phone:** (713) 348-4467

**Office Hours:** Tuesday 3pm-4pm at McNair Hall 244

**Class Time:** Tuesday/Thursday, 10:50am-12:05pm

**Location:** McNair Hall 317

**Teaching Assistants:** TBA

**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

## Course Prerequisites

- Must be enrolled in one of the following programs: Online Master Computer Science, Online Master of Data Science, Master of Data Science
- Must be enrolled in the following level: Graduate
- Basic knowledge of Excel Spreadsheet
- Prerequisites will not be waived.

## Required Course Materials

- **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
- Material is self contained. However, you may find the following textbooks helpful:
  - Matching Supply with Demand: An Introduction to Operations Management, 4th Edition, by Gerard Cachon and Christian Terwiesch, published by McGraw-Hill Education, 2018
  - 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 2-3 people. **Please form your teams as soon as possible on Canvas**, and try to keep your team throughout the semester. Fancy team names are welcomed. 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:

- **Class Contribution (10%):** 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 (15%):** There will be 3 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.** 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 (15%):** 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 (15%):** 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.**
- **Final (45%):** Exam will be take-home. You may use 1 two-sided hand-written sheet of notes (8.5 x 11 inches) for the final. No electronics (except calculators) are allowed.

## Course Policies

### Grading

- Final grades will be assigned following the JGSB policies.
- 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.

### 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 Change

- 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

- Intellectual honesty is vital to an academic community and for my fair evaluation of your work. Students **are not permitted** to make use of ChatGPT or other AI composition software for any classwork.

## 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](mailto: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	Feb 27	Course Overview and Introduction	-Read the probability notes. -You should start reading The Goal.
2	Feb 29	Inventory Management with Deterministic Demand (EOQ)	-Nahmias: Ch. 4.5, 4.6. -Cachon: Ch. 5.6.
3	Mar 5	Extensions of the EOQ Model	-HW1 out. -Nahmias: Ch. 4.7.
4	Mar 7	Inventory Management with Uncertain Demand (Newsvendor)	-Nahmias: Ch. 5.3. -Cachon: Ch. 14.
5	Mar 19	Capacity and Queueing	-HW1 due, HW2 out Nahmias: Ch. 8.2. -Cachon: Ch. 3.
6	Mar 21	Capacity and Queueing	-Nahmias: Ch. 8.3, 8.4, 8.5.
7	Mar 26	Capacity and Queueing	-HW2 due, National Cranberry Case out. -Start reading PATA Case. -Nahmias: Ch. 8.3, 8.4, 8.5.
8	Mar 28	Capacity and Queueing	-Nahmias: Ch. 8.3, 8.4, 8.5.
9	Apr 2	Revenue Management	-National Cranberry Case due, BAT Case out
10	Apr 4	Revenue Management	
11	Apr 9	Supply Chain Management	- BAT Case due, HW3 out
12	Apr 11	Supply Chain Management	
13	Apr 16	Lean Operations and Quality	-HW3 due.
14	Apr 18	The Goal Presentations	-The Goal assignment report due.