

# IE 454

## Supply Chain Analysis

### Course Syllabus

#### Fall 2021-2022

#### Instructor

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Office Hours: TBA

#### Teaching Assistant

TBA

#### Course Schedule

Lectures: Tuesdays 9:40 am-10:30 am (FENSL062), Friday 10:40 am-12:30 pm (ENSG032)  
No recitations

#### Course Content

This course is based on mathematical models and discussions along with some case studies on supply chain management. Topics include distribution, network design, demand forecasting, inventory management, contracting, coordination, information sharing, product development, outsourcing, and information technology in supply chains. Students are expected to use production and operations management tools in addressing real-world supply chain case studies as assignments.

#### Prerequisites

- IE 401 – Production and Service Systems Operations.

#### Textbooks

- Chopra, S., P. Miendl, "Supply Chain Management: Strategy, Planning and Operations", 6<sup>th</sup> Ed., 2019, Pearson, New Jersey.

#### Grading

Lecture Participation	5%
Assignments	15%
Quizzes	20%
Midterm Exam	25%
Final Exam	35%
Total	100%

The instructor might make adjustments to this grading scheme if necessary.

The letter grade you achieve in this course will be determined according to the weights outlined above; not according to “what letter grade you might need” for graduation. If you need a high letter grade, perform accordingly. I will be happy to provide you with guidance and support for that during the semester. I do NOT discuss grading-related issues with students; hence, please do not even bother to ask. Likewise, I do NOT grant any extra opportunity (such as an extra project, etc.) to increase a student’s letter grade as this would be unfair to others.

### **Attendance**

- Attendance to lectures is mandatory and will be tracked.
- Attendance records start with the first lecture. This is also the case for students who add the course during the add-drop period.
- The attendance policy is as follows
  - missing 1 or 2 class sessions: OK, no need for explanation
  - missing 3 or more sessions: a direct effect on course grade
  - missing 5 or more sessions: Failure (F grade) in the course.
- Please email the TA if you will miss (or have missed) a class session with a valid reason. The TA will keep track of the attendance records.

### **Written Assignments**

- Assignments are due at the beginning of the class meeting to which they are assigned.
- Late deliveries will not be accepted.
- The length of each assignment should not exceed three single-sided A4 sheets.
- The lowest graded assignment for each student will be dropped from consideration.
- Students are encouraged to collaborate in assignment preparation, provided that
  - each student writes his/her assignment (i.e. no copying others’ work)
  - each student mentions with whom he/she collaborated.
  - The maximum number of collaborating students is 2.

### **Lecture Participation Grade**

- We want students to be able to explain their thoughts and recommendations clearly and engage in constructive discussions with others.
- This requires students to join the zoom meeting fully prepared for the class session’s material.
- Each student’s class participation (i.e. comments, questions, answers, discussions with other students, etc.) will be graded by the teaching assistant in class.
- Hints for receiving a high participation grade:
  - talk often, show willingness
  - be a good listener, and be polite
  - explore new ideas as well, do not always play “safe”
  - do not be shy
  - better quality comments receive better grades but do not always wait for the perfect comment

### **Case Studies**

- Some cases are long. Do not expect to understand every detail.

- Read and understand the case questions first before reading the case. Keep these questions in your mind as you read through, and take notes where you find relevant material.
- Some information in the case will be (almost) useless. Learn to distinguish what is relevant and what is not.
- Learning important supply chain terminology is part of your work.

### **Exams**

- One Midterm Exam and one comprehensive Final Exam.

### **Make-up Exam Policy**

- There will be a single make-up exam that will be conducted after the midterm exam
- Coverage will be announced.
- The student needs to inform the instructor and document the reason to miss the regular exam.
- The make-up exam cannot be taken to replace an already-taken exam.

### **Quizzes**

- Quizzes might be on the written assignment, or the previous or current lectures' discussions.
- Some quizzes will be announced beforehand, some will not.
- The lowest graded quiz for each student will be dropped from consideration. There is no other make-up opportunity for quizzes.

### **Tentative Course Outline**

Extra reading material will be announced throughout the semester. The chapters refer to the textbook by Chopra, S., P. Miendl, "Supply Chain Management: Strategy, Planning and Operations", 6th Ed., 2019, Pearson, New Jersey.

Week	Chapters	Title
1 (Week of Sept 27)	1	Understanding the Supply Chain
2 (Week of Oct 04)	2	Supply Chain Performance
3 (Week of Oct 11)	3	Supply Chain Drivers and Metrics
4 (Week of Oct 18)	4	Designing Distribution Networks
5 (Week of Oct 25)	5	Network Design in the Supply Chain
6 (Week of Nov 01)	6	Designing Global Supply Chain Networks
7 (Week of Nov 08)	7	Demand Forecasting in a Supply Chain
8 (Week of Nov 15)	8	Aggregate Planning
9 (Week of Nov 22)	9	Sales and Operations Planning
10 (Week of Nov 29)	10	Coordination in a Supply Chain
11 (Week of Dec 06)	11	Cycle Inventory
12 (Week of Dec 13)	12	Safety Inventory
13 (Week of Dec 20)	13	Product Availability
14 (Week of Dec 27)	14	Transportation