

# ENS 208 – Introduction to Industrial Engineering

FALL 2022

## Course Syllabus and Frequently Asked Questions (FAQs)

### Sections B & C

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Office Hour: FENS 1077, Monday 15:00–16:00

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### Part A Course Description

**Q:** What is the purpose of this course? What can I do upon completing this course?

The purpose of this course is to take you to a journey on a set problems and case studies that modern Industrial Engineers are involved with in real-life. Upon completing this course, you will be able to

- implement algorithms for business problems that can be depicted as an analytical/mathematical problem
- develop mathematical models in the form of linear programming problem formulations and solve these problems with (commercial) solvers
- comprehend how variation and randomness in life/observations can be depicted with functions
- establish the link between industrial engineering and required professional skills
- identify IE problems that you can attack, formulate, and solve
- familiarize yourself with industrial engineering profession

### Part B Organization and Classroom Setting

**Q1:** How many sections do we have? Who are the lecturers? Where & when will classes meet?

- The course is delivered in three sections: A, B and C.
- Section A is moderated by L.Taner TUNÇ ([ttunc@sabanciuniv.edu](mailto:ttunc@sabanciuniv.edu)).
- Sections B and C are moderated by Duygu TAŞ KÜTEN ([duygu.tas@sabanciuniv.edu](mailto:duygu.tas@sabanciuniv.edu)).
- Meeting times and classrooms:

Section A (Monday 11:40-13:30 & Tuesday 14:40-16:30)	FASS 2119/2128
Section B (Monday 16:40-18:30 & Wednesday 16:40-18:30)	FASS 2119/2128
Section C (Monday 11:40-13:30 & Tuesday 14:40-16:30)	FMAN L014

**Q2:** Who are the teaching assistants (TAs) and learning assistants (LAs)?

- Teaching assistants and their office hours & meeting places:  
Ayda Amniattalab (Monday, 09:40–10:30, FENS 1034A)  
Ferruhan Tan Güremek (Tuesday, 16:40–17:30, FENS G001F)  
Soner Aydın (Wednesday, 11:00–12:00, <https://sabanciuniv.zoom.us/j/6794399889>)  
Buket Özen (Thursday, 11:40–12:30, FENS 1034A)  
Ayşe Neslihan Şener (Friday, 08:40–09:30, <https://sabanciuniv.zoom.us/j/95206774381?pwd=L0QvMHpXQmpSVkRZTkkgZUFicEp6UT09>)
- Learning assistants  
Aydın Aydemir  
Buse Keleş  
İclal Zeynep Özgüç  
Deniz Ali Turan  
Ahmet Ömer Yalçın

## **Part C Course Requirements**

**Q1:** What is the working knowledge or any prerequisite?

- Sophomore standing is recommended. The prerequisite for the course is knowledge of basic courses in mathematics (MATH 101 and 102) and basic skills for computational problem solving (IF 100), or the equivalent.

**Q2:** Is attendance **mandatory**?

- You are expected to attend the sections which you are registered to. Attendance is mandatory and will be checked in each class. According to YÖK regulations, at least 70% attendance is required. If you fail to satisfy this requirement, your course grade will be **NA**.

**Q3:** Are there any special rules for attendance?

- **Yes.** It is required that the students attend the classes with a computer (via which an algorithm can be texted and run properly, and the outputs can be uploaded to a designated site). Students without a functional computer shall not be admitted to the sessions.

**Q4:** Are there any **pop-up graded activities**?

- Every week we may have pop-up in-class graded activities during the lecture hours, which will be assigned to pre-defined groups of students. The topics of these exercises can include both the concepts (you may refer to as “theory”) and the applications including the algorithms and coding exercises.

**Q5:** Any specific requirement **for the first week**?

- **Yes.** You are expected to attend the lecture from the first week onwards. The first lecture will be held on Monday, October 3rd, where introductory remarks and requirements for the rest of the semester will be delivered.
- The platform (*anaconda*) must be set up in the computers before the second lecture that will be held on Tuesday, October 4<sup>th</sup> (for Section C) and on Wednesday, October 5<sup>th</sup> (for

Section B). It is highly recommended that each student shall recollect his/her fundamentals about Python before the first lecture.

**Q6:** Do we have a **textbook**?

- No. We will have lecture notes, reading materials, chapters from books, case (“real life”) documents, coding tutorials, and so on. All course materials will be available on SUCourse.

## **Part D            Hardware, Software, and Programming**

**Q1:** What programming language will we use?

- We use Python (<https://www.python.org/>) which is the same programming language used in the freshman year course IF 100 Computational Approaches to Problem Solving.

**Q2:** Which *platform* will be used for the python language?

- We utilize “**anaconda**” which is known as the “most popular” and easy to use python data science *platform*. It may be downloaded from the following URL:  
<https://www.anaconda.com/products/individual>

Please select Python version 3.9. Versions 3.7 and 3.8 are also OK if you already have it.

- **NOTE:** There should be no Turkish alphabet specific characters in the path name of the directory where you are trying to install Anaconda.

## **Part E            Outline**

<b>Week 1</b>	Overview of syllabus and expectations, installation of required software, tutorials.
<b>Weeks 2-5</b>	Module 1 – Traveling Salesman Problem and Vehicle Routing Problem
<b>Week 6</b>	Midterm Exam 1 (Tuesday, November 8 <sup>th</sup> , 2022, between 19:40-21:30)
<b>Week 7-10</b>	Module 2 – Linear Programming Formulations and Solvers
<b>Week 11</b>	Midterm Exam 2 (Wednesday, December 14 <sup>th</sup> , 2022, between 19:40-21:30)
<b>Week 12-14</b>	Module 3 – Randomness and Variation in Observations

## **Part F            Grading**

**Q1:** How will you evaluate students’ performances?

- We evaluate students’ performance through **three exams** and **in-class exercises**.
- Midterm and final exams, and group exercises will be conducted in-class.

<b>Grade Component</b>	<b>Percentage</b>
Midterm Exams	50% (two exams, 25% each)
Final Exam	35%
In-Class Group Exercise	15%

**Q2:** What is the passing grade?

To receive a passing letter grade:

- You are required to take minimum “25” from the Final Exam.
- You are required to maintain an average grade of “40”.
- You are required to attend at least 70% of the classes.

## **Part G          Rules and Regulations**

### **Make-up Policy**

- A single comprehensive make-up exam will be offered after the final exam to those who have missed a midterm or the final exam.
- A medical report must be e-mailed to the course instructors from the Health Center to be eligible for the make-up. You are encouraged to inform the instructors about your health issue right-away, if possible.
- If you miss more than one exam, the remaining grades will be "zero" regardless of your excuse.
- There is no make-up for in-class exercises.

### **Academic Integrity and Conduct:**

Each student in this course is expected to abide by the Sabanci University Academic Integrity Statement (available at <http://www.sabanciuniv.edu/en/academic-integrity-statement>) and to behave properly against the instructor and the course assistants. The violations of the integrity principles and any disrespect toward course assistants will not be tolerated.

### **Disclaimer:**

The instructors reserve the right, when necessary, to alter the grading policy, change examination dates, and modify the syllabus and the course content. Modifications will be announced in class and via SUCourse. Students are responsible for keeping up with the announced changes.