

IE 313: Operations Research III
Fall 2021-2022

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Office Hours: by appointment

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Lectures: Lectures will be in-class and simultaneously live-streamed via Zoom. For those of you who wish to follow online, the Zoom links will be posted on SUCourse+. In order to have access to them, you must be logged in to Zoom with your Sabanci account. The lecture recordings will be made available afterwards, so that you can also watch them at a later time. They are going to be posted on SUCourse+.

Tuesday: 10.40-11.30 (FMAN 1099, Zoom Meeting ID: 938 3854 2621)

Thursday: 10:40-14.30 (FMAN 1099, Zoom Meeting ID: 938 3854 2621)

Link for Lectures: <https://sabanciuniv.zoom.us/j/93838542621>

Recitations: Recitations will be online and the links for each recitation are as follows:

Section A1-A2 (Saeedeh Ahmadi Basir) – Link: <https://sabanciuniv.zoom.us/j/4211467477>

Section B1-B2 (Deniz Tuncer) – Link: <https://sabanciuniv.zoom.us/j/98227998156>

Office Hours of TA's :

Seedeh Ahmadi Basir – Wednesday: 12:40-13:30 (Link: <https://sabanciuniv.zoom.us/j/4211467477>)

Deniz Tuncer – Friday: 15:40-16:30 (Link: <https://sabanciuniv.zoom.us/j/98227998156>)

Fatemeh Gholizadehfotouhabadi – Wednesday: 13:40-14:30 (Link: <https://sabanciuniv.zoom.us/j/9216079592>)

Course Description: The mission of this course is to continue the study of modeling and solution of decision problems using operations research techniques with a particular emphasis on stochastic aspects.

Recommended Text Book *Introduction to Stochastic Processes with R.*, Robert P. Dobrow, 1st Ed., Wiley. (Available as E Book at the IC)

Grading Policy

Midterm	35% - 11 November, Thursday during lecture hours
Final	45% - TBA (during final exams week)
Assignments	20% - (4 Assignments)

Exam Policy

- Exams are closed book. This means that during the exams, the use of books, notes, electronic devices (including cell phones, smart watches, calculators, computers etc.), but you are allowed to use one or two pages of cheat sheet, where you can write formulas. A student violating this rule will receive 0 points for that exam.
- Midterm: The midterm exam will be given in-person, on campus. The date will be announced later. More details will be announced on SUCourse+ in due time.
- Final Exam: The final exam will be given in-person, on campus, during the finals period. The date and time of the final exam is determined by Student Resources and the instructors cannot change it. More details will be announced on SUCourse+ in due time.

Assignments: In the assignments, there will be one or two questions, and you will be asked to model the problem mathematically as well as compute results through python.

If you are having difficulties about completing assignments, please contact me or your TA for help.

Topics to be covered:

1. Discrete time Markov chains
2. Continuous time Markov chains
3. Poisson Process
4. Queueing models based on the birth-and-death process

Computation Part

Install Anaconda (<https://docs.anaconda.com/anaconda/install/>). After the installation you will use Spyder to write the programs in Python