

IE 313: Operations Research III, Fall 2024-25

Instructor: Sinan Yıldırım, FENS 2057

TAs: Müge Dedeoğlu, Neman Karimi

	Time	Place
Lecture	Tue 14:40-16:30	FENS L045
	Thu 13:40-14:30	
Recitation A	Fri 08:40-09:30	FENS L027
Recitation B	Fri 15:40-16:30	FASS G049
Recitation C	Fri 12:40-13:30	FASS 1102

Office Hours:

Sinan Yıldırım: Thu 12:40-13:30 @FENS 2056

Müge Dedeoğlu: Tue 13:40-14:30 @FENS 1036

Neman Karimi: Thu 1034A @FENS 1034A

Course Description:

You will study modeling and solution of decision problems using operations research techniques with a particular emphasis on stochastic aspects.

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

Computational part:

Python is a required and graded part of the course. There are so many choices for installing and working with Python. For example,

- Anaconda (see the guide in SUCourse)
- Python + Visual Studio Code (+ Github Copilot, an AI tool for code generation)

Course material:

- **Textbook:** *Introduction to Stochastic Processes with R.*, Robert P. Dobrow, 1st Ed., Wiley. (Available at IC) <https://risc01.sabanciuniv.edu/record=b2733539>

The textbook is the main resource for the course.

- Recitations, Python examples
- Everything covered in the lectures (take your own notes).

Grading

$(0.3 * \text{Midterm 1} + 0.3 * \text{Midterm 2} + 0.4 * \text{Final}) \times (1 \text{ for at least \%50 attendance}^*, 0 \text{ otherwise})$
*50% attendance is required only for lectures.

Makeup Policy: If you miss an exam, you must present me a valid reason with a proof such as a medical report within the first three days of the exam. Otherwise, you will NOT be given a make-up exam and will be assumed to score 0 in the exam you have missed. The make-up exams may need be scheduled after the final exam and it may be comprehensive.