

IE 313: Operations Research III, Spring 2024-25

Instructor: Sinan Yıldırım, FENS 2057

TAs: Müge Dedeoğlu, Neman Karimi

	Time	Place
Lecture	Tue 10:40-11:30	FENS L045
	Thu 12:40-14:30	
Recitation A	Mon 14:40-15:30	FENS L065
Recitation B	Mon 15:40-16:30	FENS L065
Recitation C	Mon 16:40-17:30	FENS L065

Office Hours:

Sinan Yıldırım:	Tuesday 09:40-10:30	@FENS 2057
Müge Dedeoğlu:	Wednesday 13:40-14:40	@FENS 1036
Neman Karimi:	Tuesday 16:40-17:30	@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 knowledge is required and graded. There are so many ways of using Python, such as

- 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

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

Makeup Policy: If you miss an exam, you must present me a valid reason with 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 zero on the exam you have missed. The make-up exam may need to be scheduled after the final exam, and it may be comprehensive.