

# TOROS ÜNİVERSİTESİ

Faculty Of Engineering  
Industrial Engineering (English)

## Course Information

OPERATIONS RESEARCH III					
Code	Semester	Theoretical	Practice	National Credit	ECTS Credit
		Hour / Week			
INE302	Spring	3	2	4	3

<b>Prerequisites and co-requisites</b>	MAT202
<b>Language of instruction</b>	English
<b>Type</b>	Required
<b>Level of Course</b>	Bachelor's
<b>Lecturer</b>	Assit. Prof. Dr. Melik KOYUNCU
<b>Mode of Delivery</b>	Face to Face
<b>Suggested Subject</b>	NONE
<b>Professional practise ( internship )</b>	None
<b>Objectives of the Course</b>	To develop the operations research knowledge and skills by using stochastic model techniques
<b>Contents of the Course</b>	Basic statistical concepts, Introduction to queuing systems, M/M/1,M/M/s and the other queue models,queuing networks, Markov chains and its applications

## Learning Outcomes of Course

#	Learning Outcomes
1	Student shall gain knowledge on optimisation concept
2	Student will be able to model the real life problems
3	Student will be able to model inventory, network and queuing models.
4	

## Course Syllabus

#	Subjects	Teaching Methods and Technics
1	Markov Chains, Transition Probabilities, n-step Transition Probabilities	Lecturing
2	Markov Chains and some examples	Lecturing
3	Classification of States, Steady States	Lecturing
4	Average First Passage Times	Lecturing
5	Markov Chains	Lecturing
6	Markov Chain Examples	Lecturing
7	Midterm	Exam
8	Queuing Theory	Lecturing
9	Queuing Theory-Application	Lecturing
10	Network Models-1	Lecturing
11	Network Models-2CPM	Lecturing
12	Network Models-2PERT	Lecturing
13	Inventory Models-1	Lecturing

14	Inventory Models-2	Lecturing
15	Review	Lecturing
16	Final Exam	

### Course Syllabus

#	Material / Resources	Information About Resources	Reference / Recommended Resources
1	R.L. Rardin, Optimization in Operations Research, Pearson Education.		

### Method of Assessment

#	Weight	Work Type	Work Title
1	40%	Mid-Term Exam	Mid-Term Exam
2	60%	Final Exam	Final Exam

### Relationship between Learning Outcomes of Course and Program Outcomes

#	Learning Outcomes	Program Outcomes	Method of Assessment
1	Student shall gain knowledge on optimisation concept	1	1,2
2	Student will be able to model the real life problems	2	1,2
3	Student will be able to model inventory, network and queuing models.	4	1,2
4			

PS. The numbers, which are shown in the column Method of Assessment, presents the methods shown in the previous table, titled as Method of Assessment.

### Work Load Details

#	Type of Work	Quantity	Time (Hour)	Work Load
1	Course Duration	14	5	70
2	Course Duration Except Class (Preliminary Study, Enhancement)	0	0	0
3	Presentation and Seminar Preparation	0	0	0
4	Web Research, Library and Archival Work	0	0	0
5	Document/Information Listing	0	0	0
6	Workshop	0	0	0
7	Preparation for Midterm Exam	1	4	4
8	Midterm Exam	1	2	2
9	Quiz	0	0	0
10	Homework	0	0	0
11	Midterm Project	0	0	0
12	Midterm Exercise	0	0	0
13	Final Project	0	0	0
14	Final Exercise	0	0	0
15	Preparation for Final Exam	1	12	12
16	Final Exam	1	2	2
				<b>90</b>