

# TOROS ÜNİVERSİTESİ

Faculty Of Fine Arts, Design And Architecture  
Architecture

## Course Information

STATICS I					
Code	Semester	Theoretical	Practice	National Credit	ECTS Credit
		Hour / Week			
ARC247	Fall	2	0	2	2

<b>Prerequisites and co-requisites</b>	None
<b>Language of instruction</b>	Turkish
<b>Type</b>	Required
<b>Level of Course</b>	Bachelor's
<b>Lecturer</b>	Instructor Hüseyin SAÇ
<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>	Develop understanding of basic concepts in structural analysis such as equilibrium, stability, static determinacy and indeterminacy. Develop understanding of system behaviour by analyzing internal forces diagrams. Introduce the basic principles of mechanics regarding work and energy, and their uses in structural engineering. Introduce methods used in the analysis of structures within the frameworks of force and displacement formulations
<b>Contents of the Course</b>	General information and basic concepts. Solution of statically determinate structures under static loads and internal force diagrams. Simply supported beams and frames. Cantilever beams and frames. Continuous compound beams. Three-pinned arches and frames. Trusses. Concept of statically indeterminacy. Flexibility (Force) method. Moment distribution (Cross) method.

## Learning Outcomes of Course

#	Learning Outcomes
1	To learn the basic concepts in structural analysis and to evaluate them
2	To learn to obtain the internal forces diagrams of a system and to evaluate systems behaviour by analyzing its internal forces diagrams
3	To learn the basic principles of mechanics and their uses in structural engineering
4	To learn to use force and displacement based methods for structural analysis and to evaluate the outcomes from these analysis methods

## Course Syllabus

#	Subjects	Teaching Methods and Technics
1	General information and basic concepts	Lecture
2	Internal force diagrams (Simply supported beams, cantilever beams and frames)	Lecture
3	Internal force diagrams (Simply supported beams and frames with overhangs)	Lecture
4	Continuous compound beams	Lecture
5	Three - pinned arches and frames	Lecture
6	Trusses	Lecture
7	Problem solution 1	Problem Solving
8	General problem solution	Problem Solving
9	Midterm Exam	Written Examination

10	Concept of statically indeterminacy and deflections	Lecture
11	Flexibility (Force) method	Lecture
12	Flexibility (Force) method	Lecture
13	Problem solution 2	Problem Solving
14	Moment distribution (Cross) method	Lecture
15	General problem solution	Problem Solving
16	Final Exam	Written Examination

## Course Syllabus

#	Material / Resources	Information About Resources	Reference / Recommended Resources
1	Prof. Dr. Mehmet Bakioğlu, Doç. Dr. Ünal Aldemir, Doç. Dr. Abdül Hayır, Statik Çözümlü Problemler, Birsen Yayınevi, 2007.		
2	Doç. Dr. Necla Kadioğlu, Prof. Dr. Hasan Engin, Prof. Dr. Mehmet Bakioğlu, Mukavemet Problemleri Cilt I, Cilt II, Birsen Yayınevi, 2004.		

## Method of Assessment

#	Weight	Work Type	Work Title
1	20%	Mid-Term Exam	Mid-Term Exam
2	5%	Mid-Term Practise	Mid-Term Practise
3	10%	Homework	Homework
4	5%	Mid-Term Practise	Mid-Term Practise
5	60%	Final Exam	Final Exam

## Relationship between Learning Outcomes of Course and Program Outcomes

#	Learning Outcomes	Program Outcomes	Method of Assessment
1	To learn the basic concepts in structural analysis and to evaluate them	10	1,2,3
2	To learn to obtain the internal forces diagrams of a system and to evaluate systems behaviour by analyzing its internal forces diagrams	10	1,2,5
3	To learn the basic principles of mechanics and their uses in structural engineering	10	3,5
4	To learn to use force and displacement based methods for structural analysis and to evaluate the outcomes from these analysis methods	10	4,5

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	2	28
2	Course Duration Except Class (Preliminary Study, Enhancement)	14	1	14
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	6	6
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	2	2	4
13	Final Project	0	0	0
14	Final Exercise	0	0	0
15	Preparation for Final Exam	1	4	4
16	Final Exam	1	2	2
				<b>60</b>