

COURSE DESCRIPTION FORM			
Course Code and Title	CE446 STRUCTURAL ANALYSIS III		
Semester	8		
Catalog description	Simple beam analysis, approximate methods for two and three dimensional analysis, stiffness matrix method, computer applications		
Required reading	R.C. Hibbeler, “Yapı Statik”, Çevirenler: K. Soyluk, T. Gültop, Palme yayınları.		
Recommended reading	1. H.H. West, Fundamentals of Structural Analysis”, Wiley 2. C.H. Norris, J.B. Wilbur, “Elementary Structural Analysis”, McGraw Hill		
ECTS	4		
Prerequisites and co-requisites	No prerequisite. Required attendance to lectures is at least 70% of total term hours.		
Compulsory/Elective	Technical elective course		
Language of instruction	English		
Aim of course	The aim of this course to teach how to analyze beam and frame systems with various methods.		
Learning outcomes of the course unit	Upon completion of the course student should be able to; 1. analyze a beam using transfer matrix method, 2. use approximate methods for two and three dimensional problems, 3. analyze plane systems using stiffness matrix method, 4. use a structural analysis software.		
Mode of delivery	The mode of delivery of this course is face to face.		
Course content	1. Transfer matrix method for simple beam analysis 2. Transfer matrix method for simple beam analysis 3. Portal method 4. Cantilever method 5. 1. Midterm 6. Muto method 7. 3 dimensional analysis of shear structures under lateral loads 8. 3 dimensional analysis of shear structures under lateral loads 9. Stiffness matrix method for plane systems 10. Stiffness matrix method for plane systems 11. Stiffness matrix method for plane systems 12. 2. Midterm + stiffness matrix method for plane systems 13. Modelling of structural systems 14. Structural analysis software and applications 15. Structural analysis software and applications		
Planned learning activities and teaching methods	3 lecture hours per week (3+0) Reading Homework Midterm exam and required works Final exam and required works		
Assessment methods and criteria		Quantity	Percentage (%)
	Mid-terms	2	50
	Assignment	5	10
	Exercises	-	-
	Projects	-	-
	Practice	-	-
	Quiz	-	-
	Contribution of In-term Studies to Overall Grade %		60

	Contribution of Final Examination to Overall Grade (%)			40					
	Attendance								
Workload	Work activity		Total Week Count	Weekly Duration (in hour)	Total Workload in Semester				
	Theoretical Study Hours of Course Per Week		14	3	42				
	Practicing Hours of Course Per Week		0	0	0				
	Reading		14	1	14				
	Searching in Internet and Library		0	0	0				
	Designing and Applying Materials		0	0	0				
	Preparing Reports		5	2	10				
	Preparing Presentation		0	0	0				
	Presentation		0	0	0				
	Mid-Term and Studying for Mid-Term		2	10	20				
	Final and Studying for Final		1	10	15				
	Other		0	0	0				
	Total Workload:				101				
	Total Workload / 25:				4.04				
	ECTS:				4				
Course's contribution to program	No	Program Learning Outcomes			1	2	3	4	5
	1	Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline; ability to use theoretical and applied knowledge in these areas in complex engineering problems.							X
	2	Ability to identify, formulate, and solve complex civil engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.							X
	3	Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose.							X
	4	Ability to devise, select, and use modern techniques and tools needed for analyzing and solving complex problems encountered in civil engineering practice; ability to employ information technologies and to use at least one computer programming language effectively.							X
	5	Ability to design and conduct experiments, gather data, analyze and interpret results for investigating complex civil engineering problems or discipline specific research questions.			X				
	6	Ability to work efficiently in intra-disciplinary and multi-disciplinary teams.			X				
	7	Ability to work individually.							X
	8	Ability to communicate effectively in Turkish, both orally and in writing; ability to write effective reports and comprehend written reports.					X		
	9	Knowledge of English of B1 level					X		

