Course Title-Course Code: CE 554 THE DIRECT STIFFNESS METHOD FOR FRAME SYSTEMS	Name of the Programme:CIVIL ENGINEERING

Semester	Teaching Methods							Credits	
	Lecture	Recite	Lab.	Field Study	H W	Other	Total	Credit	ECTS Credit
1-2	42	0	0	0	42	146	188	3	7.5

Language	Turkish
Compulsory / Elective	Elective
Prerequisites	-
Course Contents	Stiffness Definition and Stiffness matris, Local and global coordinate systems, coordinate transformations, elemental and global (structural) stiffness matrix with respect to the global coordinate system, Solution of stiffness equations, calculation steps of stiffness method, numerical examples, analysis of one dimentional bars, two dimensional trusses, beams, frames and grids.Three dimensional trusses, Three dimensional frames, additional topics in the stiffness method, elastic supports, inclined supports, hinges in beam and frame elements. Virtual work and the principle of minimum potential energy, brief introduction to the finite element method,
Course Objectives	To give the basic principles of The Direct Stiffness Method for Frame Systems
Learning Outcomes and Competences	Ganing the skill of handling and solving The Direct Stiffness Method for Frame Systems
Textbook and /or References	**[1] Tezcan, S., "Çubuk Sistemlerin Elektronik Hesap Makineleri ile Çözümü" (Stifnes Matrisleri Metodu)** Arı Pub. Cağaloğlu, İstanbul, 1970, 406 pages. **[2] Çakıroğlu, A., Özden, E., Özmen, G. "Yapı Sistemlerinin Hesabı için Matris Metotları ve Elektronik Hesap Makinası Programı",** Vol. I and II, İTÜ Library, Number 1005, 1992 **[3] Prezemieniecki, J.S., "Theory of Matrix Structural Analysis"**, Dover Pub.,1985 **[4] Sennett, R.E., "Matrix Analysis of Structures",** Waveland Press, Inc., 2000, 228 pages.

Assessment Criteria		If any,mark as (X)	Percent (%)
	Midterm Exams	X	25
	Quizzes		-
	Homeworks	X	5
	Projects		-
	Term Paper		-
	Laboratory Work		-
	Other		-
	Final Exam	X	70

Instructors	Asst. Prof. Dr. Meral BEGİMGİL