

Course Title-Course Code: CE 559 STOCHASTIC STRUCTURAL DYNAMICS					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	56	90	188	3	7.5
Language	Turkish								
Compulsory / Elective	Elective								
Prerequisites	-								
Course Contents	Introduction to random process, statistical description of random functions. Stochastic response of a single degree of freedom system. Excitation-response autocorrelation relationship. Excitation-response spectral density function relationship. Stochastic response of multi degree of freedom systems: Stationary random vibration. General application of the stochastic methods. Spektral Moments, frequency of occurrence, cumulative distribution function, mean of maximum value								
Course Objectives	To introduce the principles of random vibration theory and to analyze and understand the uncertainty of dynamic loadings and their effects on the safety of structures.								
Learning Outcomes and Competences	Finding out the statistical characteristics of the structural response based on the statistics of excitation (mean value, frequency of occurrence, probability of occurrence).								
Textbook and /or References	<ul style="list-style-type: none"> - Lin YK, Cai GQ. Probabilistic Structural Dynamics, Mc-Graw Hill Inc., 2004. - Newland DE. An Introduction Random Vibrations and Spectral Analysis, Longman Group Limited, 1975. - Yang CY. Random Vibration of Structures, John Wiley and Sons, 1986. - Peebles, PZ. Probability, Random Variables and Random Signal Principles, Mc-Graw Hill Inc., 1987. 								
Assessment Criteria								<i>If any, mark as (X)</i>	Percent (%)
	Midterm Exams							X	40
	Quizzes								
	Homeworks							X	10
	Projects								
	Term Paper								
	Laboratory Work								
	Other								
Final Exam							X	50	
Instructors	Asst. Prof. Kurtuluş SOYLUK								