

MM 520 Reliability in Machine Design				MECHANICAL ENGINEERING DEPARTMENT					
Semester	Methods of Education							Credits	
	Lecture	Recit.	Lab.	Project/Field Study	Homework	Other	Total	Credit	ECTS credit
1,2	12	30			40	106	188	3	7.5
Language	Turkish								
Compulsory / Elective	Optional								
Prerequisites	-								
Course Contents	Reliability, failure in the critical systems, theory of statistics in mechanical design and reliability, distribution functions, steady loading and statistical consideration, variable loading and statistical consideration, wear and statistical consideration, reliability of the critical system and function elements and reliability of system-element.								
Course Objectives	To provide background of the methods of probabilistic and statistical analysis that are common in reliability for design. - To provide the development and application of reliability evaluation techniques for design of machine components and systems.								
Learning Outcomes and Competences	At the end of the course it is supposed for the student; - having a knowledge of theory for probabilistic mechanical design. - having a knowledge of reliability evaluation of engineering systems. - knowing about machine components design for optimum size. - obtaining the ability of designing for reliability.								
Textbook and /or Reference	1. P. Kales "Reliability –For Technology, Engineering and Management", 1998. 2. A. D. S. Carter " Mechanical Reliability", 1986. 3. E. B. Haugen " Probabilistic Mechanical Design" J. Wiley and Sons. 4. R. Billinton " Reliability Evaluation of Engineering Systems", Pitman.								
Assessment Criteria					If any, mark as (X)		Percentage (%)		
	Midterm Exams				X		30		
	Quizzes								
	Homeworks				X		10		
	Projects								
	Term Paper								
	Laboratory Work								
	Other								
	Final Exam				X		60		
Instructors	Prof. Bedri TUC								
Week	Subject								
1	Reliability								
2	Failure in the critical systems								
3	Theory of statistics in mechanical design and reliability								
4	Distribution Functions								
5	Distribution Functions								
6	Distribution Functions								
7	Distribution Functions								
8	Steady Loading and statistical consideration								
9	Variable Loading and statistical consideration								
10	Variable Loading and statistical consideration								
11	Wear and Stastical Consideration								
12	Wear and Stastical Consideration								
13	Reliability of the critical system and function elements								
14	Reliability of the critical system and function elements, reliability, reliability of system-element								