ESOGÜ Mechanical Engineering Department

COURSE INFORMATION FORM

SEMESTER	FULL

COURSE CODE	151817642	COURSE NAME	Mechanical Vibration

SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAGE
7	3	0	0	3	5	COMPULSORY ( ) ELECTIVE (X)	Turkısh

COURSE CATAGORY			
Basic Science	**Basic Engineering**	**Mechanical Engineering** [if it contains considerable design, mark with (√)]	**Social Science**
	X	( )	

ASSESSMENT CRITERIA			
	Evaluation Type	**Quantity**	**%**
MID-TERM	1st Mid-Term	1	25
	2nd Mid-Term	1	25
	Quiz		
	Homework		
	Project		
	Report		
	Others (………)		
FINAL EXAM		1	50

PREREQUIEITE(S)	
COURSE DESCRIPTION	Kinetics of vibration, single-degree of freedom system, vibration isolation, two degree of freedom system, dynamic vibration absorber, multi-degree of freedom system,torsional vibration.
COURSE OBJECTIVES	The objectives of the course is to provide student the ability of modeling mechanical system and determining their naturel frequencies, grasping the basics of theory of vibration isolation.
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	The main aim of the course is to prevent system being damaged from vibrations, by using/and applying vibration isolation theory
COURSE OUTCOMES	I.Be able to recognize and indentify the problems of Mechanical Systems. II. Define the problem. IV. Calculate and analyze the problems by using necessary formulas VI. Evaluate the results V. Evaluate the solution by considering the calculation results. III. Be able to apply the vibration isolation theory.
TEXTBOOK	1. Mekanik Titreşimler Ders Notları. Prof.Dr. Fuat Pasin.
OTHER REFERENCES	1. Mekanik Titreşimler Teori ve Çözümlü Problemler. Yazarı: W. Seto Çeviren: Prof. Dr. Tuncer Toprak

TOOLS AND EQUIPMENTS REQUIRED	

COURSE SYLLABUS

WEEK	TOPICS
1	Kinetics of vibration
2	Single-degree of freedom systems
3	Rayleig method
4	Undamped vibration problems
5	Damped vibration logaritmik decramant
6	
7	Forced vibration
8	Forced vibration porblems
9	Vibration isolation
10	Two degree of freedom system
11	
12	Dynamic vibration absorber
13	Multi-degree of freedom system
14	Torsional vibration
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and mechanical engineering; an ability to apply theoretical and practical knowledge on solving and modeling of mechanical engineering problems.	X		
2	Ability to determine, define, formulate and solve complex mechanical engineering problems; for that purpose an ability to select and use convenient analytical and experimental methods.	X		
3	Ability to design a complex system, a component and/or an engineering process under real life constrains or conditions, defined by environmental, economical and political problems; for that purpose an ability to apply modern design methods.		X	
4	Ability to develop, select and use modern methods and tools required for mechanical engineering applications; ability to effective use of information technologies.			
5	In order to investigate mechanical engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.			
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.			
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.			
8	Awareness of life-long learning; ability to reach information; follow developments in science and technology and continuous self-improvement.		X	
9	Understanding of professional and ethical issues and taking responsibility			
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.			
11	Knowledge of actual problems and effects of engineering applications on health, environment and security in global and social scale; an awareness of juridical results of engineering solutions.			

1:None. **2**:Partially contribution. **3**: Completely contribution.

Prepared by: Ass. Prof. Dr. Sezan ORAK   **Date:**

Signature(s):