



T.C. ESKİŞEHİR OSMANGAZİ UNIVERSITY
ENGINEERING AND ARCHITECTURE FACULTY
MECHANICAL ENGINEERING DEPARTMENT

COURSE INFORMATION FORM

SEMESTER | Fall

COURSE CODE	151817640	COURSE NAME	Materials Selection In Design and Manufacturing
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SEMESTER	WEEKLY COURSE PERIOD			COURSE OF			
	Theory	Practice	Laboratory	Credit	ECTS	TYPE	LANGUAG E
7	3			3	5	COMPULSORY () ELECTIVE (x)	Turkish

COURSE CATAGORY

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

ASSESSMENT CRITERIA

MID-TERM	Evaluation Type	Quantity	%
	Mid-Term	1	30
	Quiz		
	Homework	2	40
	Project		
	Report		
	Others (.....)		
FINAL EXAM		1	40
PREREQUIEITE(S)			
COURSE DESCRIPTION	This course includes main subjects about fundamentals of material selection in design and manufacturing methods.		
COURSE OBJECTIVES	Students who successfully pass this course gain knowledge, skill and competency about material selection in design and manufacturing processes with different parameters such as economy, simplicity, weight etc.		
ADDITIVE OF COURSE TO APPLY PROFESSIONAL EDUATION	The emphasis of this course will be on the selection aspects of materials for different applications in industry. It will be shown how to determine the selection criteria of material according to the different working areas.		
COURSE OUTCOMES	Students learn the importance of following of professional subjects: Students can choose, and evaluate the materials in design and manufacturing processes Students gain the decision ability of material selection in design and manufacturing problems.		
TEXTBOOK	Fehim Fındık, Malzeme ve Tasarım, 2016, Ankara, Seçkin Yayıncılık		
OTHER REFERENCES	Ashby, F.M., "Materials Selection In Mechanical Design", Second Edition, Great Britain, 2001.		
TOOLS AND EQUIPMENTS REQUIRED	Computer, Lecture Notes, Book, Projector		

COURSE SYLLABUS	
WEEK	TOPICS
1	Engineering Materials, Design Process- Materials , Material Selection Diagrams
2	Engineering Materials, Design Process- Materials , Material Selection Diagrams
3	Materials selection for Toughness and Strength
4	Materials selection for Creep and Fatigue
5	Materials selection against to corrosion
6	Materials for wear and applications
7	Materials for wear and applications
8	Mid-Term Examination
9	Mid-Term Examination
10	Material selection and shape factor
11	Material selection and shape factor
12	Manufacturing process selection for design and selection diagrams
13	Manufacturing process selection for design and selection diagrams
14	Material selection for different machine parts and applications
15,16	Final Exam

NO	PROGRAM OUTCOMES	3	2	1
1	Sufficient knowledge of engineering subjects related with mathematics, science and own branch; an ability to apply theoretical and practical knowledge on solving and modeling of engineering problems.	[]	[x]	[]
2	Ability to determine, define, formulate and solve complex 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 constraints 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 engineering applications; ability to effective use of information technologies.	[]	[]	[x]
5	In order to investigate engineering problems; ability to set up and conduct experiments and ability to analyze and interpretation of experimental results.	[]	[x]	[]
6	Ability to work effectively in inner or multi-disciplinary teams; proficiency of interdependence.	[]	[x]	[]
7	Ability to communicate in written and oral forms in Turkish/English; proficiency at least one foreign language.	[]	[]	[x]
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	[]	[x]	[]
10	Awareness of project, risk and change management; awareness of entrepreneurship, innovativeness and sustainable development.	[]	[]	[x]
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.	[]	[]	[x]
1:None. 2:Partially contribution. 3: Completely contribution.				

Prepared by: Assoc.Prof.Dr. Mustafa Ulutan

Date:13/11/2017

Signature(s):