PLASTIC MATERIALS

1	Course Title:	PLASTIC MATERIALS	
2	Course Code:	MAK4420	
3	Type of Course:	Optional	
4	Level of Course:	First Cycle	
5	Year of Study:	4	
6	Semester:	8	
7	ECTS Credits Allocated:	3.00	
8	Theoretical (hour/week):	2.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:	None	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Prof. Dr. Hakan AYDIN	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	e-mail: hakanay@uludag.edu.tr Tel: + 90 (224) 294 06 52 Adres: Uludağ Üniversitesi, Mühendislik-Mimarlık Fakültesi, Makine Mühendisliği Bölümü, 16059, Görükle-Bursa, Türkiye.	
17	Website:		
18	Objective of the Course:	In this course for students; To emphasize the importance of plastics industry,the types of plastic materials used in engineering applications and giving information about plastic materials physical , chemical and mechanic properties is intended to introduce.	
19	Contribution of the Course to Professional Development:	To know plastic materials used in engineering applications; To have knowledge about their chemical, physical and mechanical properties	
20	Learning Outcomes:		
		1	To be able to sort of general properties, the advantages and disadvantages of plastic materials in the industrial areas.
		2	To be able define the structure of plastic materials and the manufacturing methods of them.
		3	To be able to classify plastics according to their structures.
		4	To be able define mechanical properties and deformation behavior of plastic materials.
		5	To be able to define hardness measurement methods in plastic materials.
		6	To able to compare the ability to keep the shape at temperature of the plastic material.
		7	To be able to compare physical and chemical properties of plastic materials.
		8	To be able to compare thermal and electrical properties of plastic materials
		9	To be able to classify the common processing techniques of plastic materials.
		10	To be able determine the direction in improvement works of material properties of plastics.
21	Course Content:		
	Course Content:		

Week	Theoretical	Practice
1	Course presentation and content. İndustrial importance of plastic materials. Basic concepts.	
2	General properties of plastic materials, the advantages and disadvantages of industrial sense.	
3	The structure of plastic material and obtaining Polymerization process.	
4	The structure of plastic material and obtaining. Polycondensation processes. Polyaddition processes	
5	Plastic material classification according to the structure of. Thermoplastics.	
6	Plastic material classification according to the structure of. Elastomers. Duroplastics.	
7	The mechanical properties of plastic materials.Deformation behavior.	
8	Plastic material hardness and hardness measurement methods.	
9	The ability to keep the shape at temperature of the plastic material.	
10	Impact strength of plastics	
12	The thermal and electrical properties of plastic materials.	
14	Sensitivity and preparation	

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	0	0.00	0.00
Self study and preparation	5	2.00	10.00
Homeworks	1	15.00	15.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	12.00	12.00
Others	1	10.00	10.00
Final Exams	1	15.00	15.00
Total Work Load			102.00
Total work load/ 30 hr			3.00
ECTS Credit of the Course			3.00

2. Plastics Materials and Processing, Strong A.B.,
Hall-1974.
5. Handbook of Plastic Materials and Technology, Rubin,
N. ve Akovalı G. Çantay Publishing House, İstanbul, 1998.
7. ASM HANDBOOK

23	Assesment

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	40.00
Quiz	0	0.00
Home work-project	0	0.00
Final Exam	1	60.00
Total	2	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00

Contribution of Final Exam to Success Grade	60.00
Total	100.00
Measurement and Evaluation Techniques Used in the Course	Achievement in a course during the undergraduate program is determined by the Relative Evaluation method.

24 ECTS / WORK LOAD TABLE

25 CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS

	PQ1	PQ2	PQ3	PQ4	PQ5	PQ6	PQ7	PQ8	PQ9	PQ10	PQ11	PQ12	PQ13	PQ14	PQ15	PQ16
ÖK1	5	4	4	3	4	4	1	1	1	1	1	1	1	1	1	1
ÖK2	5	4	4	4	4	3	1	1	1	1	1	1	1	1	1	1
ÖK3	5	4	4	4	3	3	2	1	1	1	1	1	1	1	1	1
ÖK4	5	3	4	3	4	3	1	1	1	1	1	1	1	1	1	1
ÖK5	5	4	4	4	3	4	2	1	1	1	1	1	1	1	1	1
ÖK6	5	5	4	4	4	3	2	2	1	1	1	1	1	1	1	1
ÖK7	5	4	4	3	2	2	1	1	1	1	1	1	1	1	1	1
ÖK8	5	4	4	4	3	2	2	1	1	1	1	1	1	1	1	1
ÖK9	5	3	4	4	3	3	2	1	1	1	1	1	1	1	1	1
ÖK10	5	3	3	4	3	2	1	1	1	1	1	1	1	1	1	1

LO: Learning Objectives PQ: Program Qualifications

Contribution Level:	**1 very low**	**2 low**	**3 Medium**	**4 High**	**5 Very High**