CONDUCTIVE POLYMERS

1	Course Title:	CONDUCTIVE POLYMERS
2	Course Code:	TEK4410
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:	
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Doç. Dr. Semiha EREN
15	Course Lecturers:	---
16	Contact information of the Course Coordinator:	semihaeren@uludag.edu.tr Tel. +90.0.224.2755280 Adres: Bursa Uludağ Üniversitesi Mühendislik Fakültesi Tekstil Mühendisliği Bölümü 16059 Nilüfer Bursa, Türkiye.
17	Website:	
18	Objective of the Course:	To give information about conductive polymers, their types, synthesis methods, usage areas and use in textiles
19	Contribution of the Course to Professional Development:	To have general information about the structure and properties of conductive polymers To have knowledge about the application of conductive polymers in textiles To have knowledge about the methods of providing conductivity to textiles Ability to work in teams and transfer information using presentation techniques
20	Learning Outcomes:	

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21	Course Content:	
	Course Content:	
Week	Theoretical	Practice

1	INTRODUCTION Determining Student Meeting Hours Introduction of the Resources to be followed, Explanation of the Teaching Method of the Course Explanation of Assessment Method and Preparation of Homework Electrical conductivity definition	
2	What is a polymer? Uses of Polymers Discovery of Conductive Polymers	
3	Conductivity Mechanism in Conductive Polymers Ionic and Electronic Conductivity Band Theory, Dopping, Hopping	
4	Conductive Polymer Synthesis Methods Chemical Polymerization Electrochemical Polymerization	
5	Conductive Polymer Synthesis Methods Pyrolysis Catalytic Polymerization	
6	Structure and properties of Polyaniline and Polipyrol	
7	Structure and properties of Polyacetylene	
8	Structure and properties of Polythiophene	
9	Structure and properties of polyphenylene	
10	Polyindene, Polijndole and other conductive	
12	Conductivity and conductive polymer application areas and possibilities in textile	
13	Electrical conductivity measurement methods in textile materials	
14	electromagnetic shielding / homework presentatio	
22	Textbooks, References and/or Other Materials:	1. Ders notları (öğretim üyesi tarafından hazırlanmış) 2. Conducting Polymers', G. Inzelt, Springer, 2008 Soinks, L.A.P. Kane-Maguire, P.R. Teasdale, CRC Press, 2000, Third Edition Properties of Conducting Polymers, Wexford College Press, California, 2008 Polymers, CRC Press, Boca Raton, FL, 2006
23	Assesment	

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	2.00	28.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	1.00	14.00
Homeworks	1	14.00	14.00
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	12.00	12.00
Total Work Load			90.00
Total work load/ 30 hr			3.00
ECTS Credit of the Course			3.00

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	30.00
Quiz	0	0.00
Home work-project	1	10.00
Final Exam	1	60.00
Total	3	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	WRITTEN EXAM PROJECT PERFORMANCE HOMEWORK

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	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ÖK4	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

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