ADVANCED REACTION MECHANISMS ON TEXTILE TREATMENT

1	Course Title:	ADVANCED REACTION MECHANISMS ON TEXTILE TREATMENT	
2	Course Code:	TEK6020	
3	Type of Course:	Optional	
4	Level of Course:	Third Cycle	
5	Year of Study:	1	
6	Semester:	2	
7	ECTS Credits Allocated:	6.00	
8	Theoretical (hour/week):	3.00	
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. MEHMET ORHAN	
15	Course Lecturers:	Yok	
16	Contact information of the Course Coordinator:	morhan@uludag.edu.tr Tel. +90.0.224.294 20 64 Adres: Bursa Uludağ Üniversitesi Mühendislik Fakültesi Tekstil Mühendisliği Bölümü 16059 Nilüfer Bursa, Türkiye.	
17	Website:		
18	Objective of the Course:	The general objective in this course is to give knowledge about the basic principles, applications, and uses of the basic principles of reaction mechanisms between textile fibers and chemicals in textile treatments.	
19	Contribution of the Course to Professional Development:	Students will learn about chemical reaction mechanisms in textile processes.	
20	Learning Outcomes:		
		1	The student will be able to define and explain the basic principles, approaches, and concepts of the Organic Chemistry.
		2	The student will be able to define and explain the polymer and fiber structures, their properties, and their relations with each other's.
		3	The student will be able to explain the reaction mechanisms occurring between textile fibers and chemicals.
		4	To be able to make connections between organic functional groups and textile fibers.
		5	The student will be able to select the appropriate reaction mechanism for any textile fiber.
		6	The student will be able to describe and explain the risks related to organic compounds (personal and environmental).
		7	
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21	Course Content:	
	Course Content:	
Week	Theoretical	Practice
1	Classification of Polymers and Properties of Textile Polymers	
2	Investigation of Some Fibers Produced from Different Polymers	
3	Carbon Compounds and Chemical Bonds	
4	Alkanes, Alcohols and Ethers, Amines, Aldehydes and Ketones	
5	Carboxylic Acids and Esters, Amides, Alkenes	
6	Aromatic Compounds: Aromaticity Benzenoid Aromatic Compounds Heterocyclic Aromatic Compounds Ortho / Meta- / Para-Positions	
7	Functional Group Transformations: Determination of Oxidation Step Electronegativity (C, H, O, Cl, Br)	
8	Reduction Reaction: Reduction Reagents Oxidation Reaction: Oxidation Reagents	
9	Acid-Base Reaction: Acid and Base Definition Weak Acids Strong Acids Buffer solutions	
10	Functional Groups, Intermolecular Forces	
11	Ionic Reactions, Nucleophilic Displacement and Separation Reactions	
14	Reactions of Aromatic Compounds	

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self-study and preperation	14	6.00	84.00
Homeworks	1	14.00	14.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	20.00	20.00
Others	0	0.00	0.00
Final Exams	1	20.00	20.00
Total Work Load			180.00
Total work load/ 30 hr			6.00
ECTS Credit of the Course			6.00

22	Textbooks, References and/or Other Materials:	
		1.Orhan M., Ders Notları, 2021. 2.Crompton T.R., Characterization of Polymers, Volume 1 3.Raheel M., Modern Textile Characterization Methods, Publisher Marcel Dekker Inc. s.631, 1995. 5.Cheremisinoff, N.P., Polymer Characterization - Laboratory Techniques and Analysis, s.255, 1996. Polymer Synthesis Characterization- A Laboratory Manual, s.231, 1998. Instrumental Analysis, Sixth Edition, s.1107, 2005. 8.Williams D.H., Fleming I., Spectroscopic Methods in 9.Criddle W.J., Ellis G.P., Spectral and Chemical Characterization of Organic Compounds, 3. ed. John Wiley and Sons 1990. 10. G. Solomons ve C. Fryhle (Çev. Ed. G. Okay ve Y. Yıldırır), Organik Kimya, Literatür Yayınları, 2002. 11. J. McMurry, Organic Chemistry, Brooks/Cole Publishing Comp., 1992. 12. P. Y. Bruice, Organic Chemistry, Prentice Hall, 2001. 13. R. J. Fessenden ve J. S. Fessenden (Çev. Ed. T. Uyar), Organik Kimya, Güneş Kitabevi, 1992.

23	Assesment	
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		It is done with written exams (Midterm, Homework, and Final).

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	4	3	0	2	0	0	0	2	0	0	0	0	0	0	0	4
ÖK2	4	3	0	2	0	0	0	2	0	0	0	0	0	0	0	4
ÖK3	3	3	2	2	2	3	0	0	0	0	3	0	0	0	0	4
ÖK4	3	3	0	4	3	0	0	0	0	0	0	0	0	0	0	4
ÖK5	3	3	0	3	4	0	0	0	0	0	0	0	0	3	0	4
ÖK6	4	4	0	2	3	3	0	0	0	0	3	2	3	3	0	4

LO: Learning Objectives PQ: Program Qualifications

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