



YOZGAT BOZOK UNIVERSITY FACULTY OF ARTS AND SCIENCES
CHEMISTRY DEPARTMENT COURSE PLAN

Course Code	Course Title	Semester	Course Type (C/E)	T+A+L (Time/Week)	Credit	ECTS	Course Language
KİM742	Materials Chemistry	1-2	E	2+0+0		5	Turkish

COURSE INFORMATION

Course Catalog Description (Content)	Akıllı polimerler, Akıllı polimerlerin yüzeyleri ve prosesleri, akıllı polimerlerin tekstil yüzeylerinde alanlarını ve tekstil yüzeylerine kazandırdıkları özellikleri
The Aim of the Course	Öğrencilere, akıllıların tekstilde kullanımı ve detayları hakkında bilgi vermektir.
Course Level	Bachelor degree
Course Language	Turkish
Teaching method	(X) Formal () Online () Mixed/Hybrid
Teaching Staff of the Course	Prof. Dr. Ramazan COŞKUN, Prof. Dr. Ali DELİBAŞ
Prerequisite Course(s) of the Course	
Learning Outcomes from the Course	<ol style="list-style-type: none">1. Learn about smart polymers.2. It can come to the textile surfaces of the smart polymer and learn about its processes.3. Will be able to know the usage areas of smart polymers on textile surfaces and the properties that they gain to textiles.4. They can learn the properties of smart biopolymers, their applications and uses in textiles.5. Have knowledge about chromic polymers and solar textiles.

COURSE CONTENT

Week	Theory	Practice/Laboratory
1	Definition and plan of smart polymers	
2	Classification and application areas of smart polymers	
3	Textile use of active polymers, gels and elastomers	
4	Application methods of smart polymers on textile surfaces	
5	Properties of smart biopolymers, application and use in textiles	
6	Smart medical polymers, sensors, and textile applications	
7	Heat-storing thermal insulation polymers, textile applications	
8	Shape memory polymers, textile applications	
9	Piezoelectric polymers, textile applications	
10	Chromic polymers, solar textiles	
11	Smart polymers, protective textile applications	
12	Smart polymers, electronic textile applications	
13	Smart polymers, packaging textile applications	
14	Smart polymers, architectural and construction textile applications	
15	Final Exam	

Course Learning Resources

1. M. Fringe, Polymer Technology, Gazi Bookstore, 2005
2. M. Fringe, Polymer Chemistry, Gazi Publishing House, 2004
3. Smart polymers and their applications, Maria Rosa Aguilar, J.S.Roman, Elsevier 2014 2 Smart textiles, Xiaoming Tao, Springer reference 2015 3 Jinlian Hu, "Shape Memory Polymers and Textiles", Woodhead Publishing 2007 4 G.Pohl, "Textiles, Polymers and Composites for Buildings ", Woodhead Publishing 2010

ASSESSMENT CRITERIA

Work Activities During the Semester	Number	Contribution
Homework	1	%30
Practice		
Forum/ Discussion Application		
Short Exam (Quiz)	2	%35
Ratio Of Semester Studies To Semester Success (%)		%40
Ratio of Final to Success (%)	1	%60
Total		%100

COURSE WORKLOAD TABLE

Activity	Total Weeks	Duration (Weekly Hours)	Total Workload
Theory	14	2	28
Practice			
Forum/ Discussion Application			
Reading	14	3	42
Internet Scanning, Library Study	14	2	28
Material Design, Application			
Report Preparation			
Presentation Preparation			
Presentation			
Final Exam	1	2	2
Preparation for the Final Exam	4	6	24
Other(s) (Specify:)			
Total Workload			
Total Workload / 25 (s)			124/25
ECTS Credits of the Course			124/25 \cong 5

Note: The workload of the course will be determined by the instructor on a per-course basis.

PROGRAM LEARNING OUTPUTS CONTRIBUTION LEVELS

No	Program Learning Outputs	1	2	3	4	5
1	Gains extensive knowledge about the basic chemical properties of matter and uses this knowledge in daily life, industrial scale, and practical chemistry and shares them with the society.				X	
2	Performs experiments, collects data, interprets, evaluates results, defines problems parallel to current technological developments, produces solutions against problems encountered in the laboratory.		X			
3	Calculates and processes chemical information and data.			X		
4	Applies her/his knowledge and understanding of chemistry to the solution of unconventional qualitative and quantitative problems.				X	
5	Defines and comprehends chemical concepts and theories in Inorganic Chemistry, Organic Chemistry, Physical Chemistry, Analytical Chemistry, Biochemistry.				X	
6	Can conduct research in the light of scientific data on any subject in the field of chemistry.					X

7	Writes, presents, discusses scientific material, and presents it orally to a knowledgeable audience.			X		
8	Brings a chemical approach to the solution of environmental problems, makes environmental analyzes and reports.		X			
9	Knows a foreign language at a level to read and understand the basic terms and processes of the chemist profession.			X		
10	Can use computer software and information and communication technologies at the level required by the field.				X	
11	Adapts and transfers the knowledge gained in the field to secondary education.			X		
12	Apart from the field of chemistry, she/he gains knowledge in different branches of science that she feels close to.				X	
13	Carries out a study independently, makes group work and gains the awareness of taking responsibility.				X	
14	They can develop a positive attitude towards lifelong learning and constantly renew their professional knowledge and skills.				X	
15	Have sufficient awareness of the universality of social rights, social justice, quality culture and protection of cultural values, environmental protection, occupational health and safety.			X		

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