



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
KİM740	Polymer Production Techniques	1-2	E	2+0+0	1	5	Turkish

COURSE INFORMATION

Course Catalog Description (Content)	Concepts related to polymers, glass transition temperature, step polymerization, radical polymerization, ionic polymerization, copolymerization, reinforcements, plasticizers, thermal stabilizers, crosslinkers
The Aim of the Course	Giving basic information about polymer production methods, additives added to polymers and the methods by which polymers are shaped to make daily used materials.
Course Level	Bachelor degree
Course Language	Turkish
Teaching method	(X) Formal () Online () Mixed/Hybrid
Teaching Staff of the Course	Prof. Dr. Ramazan COŞKUN
Prerequisite Course(s) of the Course	-
Learning Outcomes from the Course	1- Knows polymers and can master the basics of polymer chemistry. 2- Can learn polymerization methods and explain their differences. 3- Can learn the characterization of polymers by various methods. 4- May have knowledge of how to make plastic, rubber, fiber etc. goods and materials made of polymers that are widely used in daily life. 5- Can determine the usage area of polymers according to their structural properties.

COURSE CONTENT

Week	Theory	Practice/Laboratory
1	Polymer definition and basic concepts	
2	Degradation of polymers	
3	Melting and glass transition temperature of polymers, TGA and DSC	
4	Stepwise polymerization inputs, synthesis of vinyl monomers	
5	Viscous flow, elasticity, viscoelasticity, stress-strain curves	
6	Bulk and suspension polymerization	
7	Emulsion polymerization	
8	Thermal and mechanical tests applied to polymers	
9	Reinforcers, plasticizers, thermal stabilizers, crosslinkers, antioxidants, flame retardants, UV-stabilizers	
10	Extrusion, injection molding, blow molding, thermoforming	
11	Fibers and rubbers	
12	Adhesives	
13	Polymeric films and foams	

14	Composites						
15		Final Exam					
Course Learning Resources							
1. Polimer Kimyası: Mehmet Saçak, Gazi Kitabevi, 2004, Ankara, Türkiye.							
2. B. Baysal, Polimer Kimyası, Odtü Yayınevi, 1981							
ASSESSMENT CRITERIA							
Work Activities During the Semester		Number		Contribution			
Homework		1		30			
Practice							
Forum/ Discussion Application							
Short Exam (Quiz)		2		70			
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		2		28		
Internet Scanning, Library Study	14		2		28		
Material Design, Application							
Report Preparation							
Presentation Preparation	2		4		8		
Presentation	2		3		6		
Final Exam	1		1		1		
Preparation for the Final Exam	4		7		28		
Diğer (Belirtiniz: Ev Ödevi)							
Total Workload					127		
Total Workload / 25 (s)					127/25		
ECTS Credits of the Course					≅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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