



**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
KİM717	ELECTROCHEMISTRY	1-2	E	2+0+0		5	Turkish

**COURSE INFORMATION**

<b>Course Catalog Description (Content)</b>	Definition of electrochemistry, field of study; Classification of Conductors; Faraday's Laws of Electrolysis; Electrolytic Conductivity; Transport Numbers; Thermodynamics of Electrolyte Solutions; Electrolytic Dissociation; Electromotive Force and Electrode Potentials; Classification of Batteries; E.M.K. Applications of Measurement; Electrolysis and Polarization
<b>The Aim of the Course</b>	To examine the basic principles and laws of electrochemistry
<b>Course Level</b>	Bachelor degree
<b>Course Language</b>	Turkish
<b>Teaching method</b>	(X) Formal ( ) Online ( ) Mixed/Hybrid
<b>Teaching Staff of the Course</b>	Prof. Dr. Ramazan COŞKUN, Prof. Dr. Ali DELİBAŞ, Asst. Prof. Dr. Hatice ARI
<b>Prerequisite Course(s) of the Course</b>	-
<b>Learning Outcomes from the Course</b>	1- Can learn the basic principles of electrochemistry. 2- Can define conductivity and its types. 3- Learn the working principles of electrochemical cells. 4- Can learn the calculation of electrode potentials. 5- Can theoretically calculate whether a battery will work in practice. 6- Can comprehend the working technique and properties of batteries. 7- Can comprehend the importance of electrochemistry in industry.

**COURSE CONTENT**

Week	Theory	Practice/Laboratory
1	Introduction of the course, explanation of its activities and operation	
2	Definition of Electrochemistry, Field of Study, Electric Units and Oxidation Reduction Reactions	
3	Classification of Conductors	
4	Faraday's Laws of Electrolysis, Culometers	
5	Electrolytic Conductivity, Definitions, Measurement of Conductivity, Factors Affecting Conductivity	
6	Transport Numbers	
7	Thermodynamics of Electrolyte Solutions	
8	Electrolytic Dissociation, Strong Electrolyte Theories, Debye- Hückel theory	
9	Electromotive Force, Galvanic Battery, Factors affecting E.M.C.	
10	Measuring E.M.C, Electrode Potentials	
11	Classification of Electrodes	
12	Classification of Batteries	

13	E.M.C. Applications of Measurement	
14	General repetition	
15		Final Exam

### Course Learning Resources

1. M. Ayhan Zeren, Elektrokimya, Birsen Yayınevi, İstanbul, 1999.
2. Okyay Alpaut, Elektrokimya, Hacettepe Üniv. Yayınları, 1978.
3. Hayri Yalçın, Timur Koç, Elektrokimya, Palme Yayıncılık, 1999.

### 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
<b>Total</b>		<b>%100</b>

### 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
Other(s) (Specify: ... ..)			
<b>Total Workload</b>			<b>127</b>
<b>Total Workload / 25 (s)</b>			<b>127/25</b>
<b>ECTS Credits of the Course</b>			<b>≅5</b>

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			

*Bozok*