

## 1. Course Description

COURSE DESCRIPTION FORM			
<b>Course Code and Title</b>	CHE361 Electrochemistry		
<b>Course Semester</b>	5		
<b>Catalog Description (Content) of the Course</b>	Electrochemical terms and concepts: Electrical conductivity, electricity load, Current violence Ionic conductivity: equivalent conductivity, Limit equivalent conductivity, Electrolyte balances: Acids and bases , decompose degree, Hydrolysis, Electrochemical cells: electrode potentials, electrode kinds, Electrolysis: excessive potentials, decompose potentials, Corrosion , catholic protection.		
<b>Main Textbook</b>	Yalçın, H. , Gürü, M., “Elektrokimya ve Uygulamaları“, Palme Yayıncılık , Ankara, 2010.		
<b>Supporting Textbooks</b>	<ul style="list-style-type: none"> <li>• Zeren, A., “Elektrokimya”, Birsen Yayınevi, İstanbul, 1999.</li> <li>• Prentice, G.A., “Electrochemical Engineering Principles”, Prentice Hall, 1<sup>st</sup> Edition, 1991 .</li> <li>• Bard, J.A., Faulkner, L.R., “Electrochemical Methods: Fundamentals and Applications”, 2<sup>nd</sup> Edition, John Wiley &amp; Sons, 2002.</li> </ul>		
<b>Course Credit (ECTS)</b>	3		
<b>Prerequisites of the Course (Compulsory attendance should be indicated here.)</b>	There is no prerequisite for this course. There is 70% attendance requirement.		
<b>Type of the Course</b>	Elective		
<b>Instruction Language of the Course</b>	English		
<b>Object and Target of the Course</b>	To introduce basic concepts of electrochemistry		
<b>Learning Outcomes of the Course</b>	Electrochemical concepts and transferring to practical of these		
<b>Mode of Delivery</b>	Face to face		
<b>Weekly Schedule of the Course</b>	1 <sup>st</sup> Week: ELECTROCHEMICAL TERMS AND CONCEPTS 2 <sup>nd</sup> Week: IONIC CONDUCTIVITY 3 <sup>rd</sup> Week: ELEKTROLYTE BALANCES 4 <sup>th</sup> Week: ELEKTROLYTE BALANCES 5 <sup>th</sup> Week: ELECTROCHEMICAL CELLS 6 <sup>th</sup> Week: ELECTROCHEMICAL CELLS 7 <sup>th</sup> Week: ELECTROCHEMICAL CELLS 8 <sup>th</sup> Week: ELECTROLYSIS 9 <sup>th</sup> Week: ELECTROLYSIS 10 <sup>th</sup> Week: CORROSION AND PROTECTION METHODS OF CORROSION 11 <sup>th</sup> Week: FUEL CELLS 12 <sup>th</sup> Week: ELECTROCHEMICAL TREATMENT 13 <sup>th</sup> Week: ELECTROCHEMICAL TREATMENT 14 <sup>th</sup> Week: STUDENT PRESENTATION		
<b>Educative Activities</b> (Credit will be determined based on the time given for these activities. Should be filled carefully.)	Theoretical Study Hours of Course Per Week Reading Searching in Internet and Library Preparing Reports Preparing Presentation Presentation Mid-Term and Studying for Mid-Term Final and Studying for Final		
<b>Assessment Criteria</b>		<b>Quantity</b>	<b>Total Contribution</b>

			(%)				
	Midterm	2	50				
	Homework						
	Assignment						
	Projects	1	10				
	Practice						
	Quiz						
	Contribution of In-term Studies to Overall Grade						
	Contribution of Final Examination to Overall Grade	1	40				
Attendance							
<b>Workload of the Course</b>	<b>Activity</b>	<b>Total Week Count</b>	<b>Weekly Duration (in hour)</b>	<b>Total Workload in Semester</b>			
	Theoretical Study Hours of Course Per Week	14	3	42			
	Practicing Hours of Course Per Week						
	Reading	3	1	3			
	Searching in Internet and Library	3	1	3			
	Designing and Applying Materials						
	Preparing Reports	2	4	8			
	Preparing Presentation	2	3	6			
	Presentation	1	3	3			
	Mid-Term and Studying for Mid-Term	2	5	10			
	Final and Studying for Final	1	5	5			
	Other						
	Total work load			80			
	Total work load/25			3.2			
ECTS of the course			3				
<b>Course's Contribution To Program</b>	No	Program Learning Outcomes	1	2	3	4	5
	1	Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline; ability to use theoretical and applied information in these areas to model and solve engineering problems.			X		
	2	Ability to identify, formulate, and solve complex engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.	X				
	3	Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose.	X				
	4	Ability to devise, select, and use modern techniques and tools needed for engineering practice; ability to employ information technologies effectively.		X			

	5	Ability to design and conduct experiments, gather data, analyze and interpret results for investigating engineering problems.	X					
	6	Ability to work efficiently in intra-disciplinary teams.			X			
	7	Ability to work efficiently in multi-disciplinary teams;	X					
	8	Ability to work individually.			X			
	9	Ability to communicate effectively in Turkish/English, both orally and in writing; Ability to write effective reports and comprehend written reports, make effective presentations,			X			
	10	prepare design and production reports, give and receive clear and intelligible instructions.	X					
	11	Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to continue to educate him/herself.			X			
	12	Awareness of professional and ethical responsibility.		X				
	13	Information about business life practices such as project management, risk management, and change management.	X					
	14	Information about awareness of entrepreneurship, innovation, and sustainable development.	X					
	15	Knowledge about contemporary issues and the global and societal effects of engineering practices on health, environment, and safety.	X					
	16	Knowledge about awareness of the legal consequences of engineering solutions.	X					
	17	Knowledge on standards used in engineering practice.	X					
<b>Name of Lecturer(s) and Contact Information</b>		<ol style="list-style-type: none"> <li>1. Prof.Dr. Metin Gürü (<a href="mailto:mguru@gazi.edu.tr">mguru@gazi.edu.tr</a>)</li> <li>2. Prof. Dr. Ayla Altınten (<a href="mailto:altinten@gazi.edu.tr">altinten@gazi.edu.tr</a>)</li> </ol>						