

COURSE DESCRIPTION FORM

Course Code and Title	CHE455 CATHODIC PROTECTION		
Course Semester	7		
Catalog Description (Content) of the Course	General concepts of cathodic protection. Types of cathodic protection. Cathodic protection of pipes, tanks, heat exchangers, ships, etc. Design of cathodic protection systems. Operation and maintenance of cathodic protection systems.		
Main Textbook	1. Yalçın H. Ve Koç T., Katodik Koruma		
Supporting Textbooks	1. Marshall Parker, Edward G. Peattie, Pipeline Corrosion and Cathodic Protection, Gulf Professional Publishing, 1988. 2. Walter von Baekmann, Wilhelm Schwenk, Werner Prinz, Handbook of cathodic corrosion protection: theory and practice of electrochemical protection processes, Third Ed., Gulf Pub. Co., 1997 3. Volkan Cicek, Cathodic Protection: Industrial Solutions for Protecting Against Corrosion, John Wiley, Scrivener Publishing, 2013. 4. Morgan, John H, Cathodic protection, National Association of Corrosion Engineers, 1987. 5. Marshall Parker, Edward G. Peattie, Pipeline Corrosion and Cathodic Protection, Third Edition: A Practical Manual for Corrosion Engineers, technicians, and field personnel, Gulf Professional Publishing, 1988.		
Course Credit (ECTS)	4		
Prerequisites of the Course (Compulsory attendance should be indicated here.)	There is no prerequisite for this course, Compulsory attendance (70 %)		
Type of the Course	Elective		
Instruction Language of the Course	English		
Object and Target of the Course	To inform about cathodic protection and prepare it for project construction		
Learning Outcomes of the Course	Transfer of chemistry and electrochemistry courses to practice		
Mode of Delivery	Face to Face		
Weekly Schedule of the Course	Weeks	Topics	
	1	Basic principles of electrochemistry	
	2	Basic principles of electrochemistry	
	3	Comparison of cathodic protection and other protection methods	
	4	Project design methods of cathodic protection systems	
	5	Soil survey methods and their utilization	
	6	Cathodic protection of underground pipelines	
	7	Cathodic protection of underground pipelines	
	8	Cathodic protection of underground pipelines	
	9	Cathodic protection of offshore structures	
	10	Cathodic protection tanks and tank farms	
	11	Cathodic protection of concrete structures	
	12	Operation and control of cathodic protection systems	
	13	Operation and control of cathodic protection systems	
	14	Operation and control of cathodic protection systems	
Educative Activities <i>(Credit will be determined based on the time given for these activities. Should be filled carefully.)</i>	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		
		Sayı	Toplam

				Katkı (%)				
	Midterm			2		25		
	Homework							
	Assignment							
	Projects			1		10		
	Practice							
	Quiz							
	Contribution of In-term Studies to Overall Grade			60				
	Contribution of Final Examination to Overall Grade			40				
	Attendance							
Workload of the Course	Ekinlik	Hafta sayısı	Süre Saat/Hafta	D.Sonu toplam iş yükü				
	Theoretical Study Hours of Course Per Week	14	3	42				
	Reading	7	2	14				
	Searching in Internet and Library	7	2	14				
	Preparing Reports	1	6	6				
	Preparing Presentation	1	6	6				
	Presentation	1	1	1				
	Mid-Term and Studying for Mid-Term	2	6	12				
	Final and Studying for Final	1	5	5				
	Total Workload			100				
	Workload / 25			4				
	ECTS Credit			4				
	Course's Contribution To Program	Num.	Program Ourcomes		1	2	3	4
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.				×		
2		Ability to identify, formulate, and solve complex engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.			×			
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. (Realistic constraints and conditions may include factors such as economic and environmental issues, sustainability, manufacturability, ethics, health, safety issues, and social and political issues, according to the nature of the design.)				×		
4		Ability to devise, select, and use modern techniques and tools needed for engineering practice; ability to employ information technologies effectively.				×		
5		Ability to design and conduct experiments, gather data, analyze and interpret results for investigating engineering problems.				×		
6		Ability to work efficiently in intra-disciplinary teams.				×		
7		Ability to work efficiently in multi-disciplinary teams; ability to work individually.				×		
8		Ability to work individually.				×		
9		Ability to communicate effectively in Turkish, both orally and in writing; knowledge of a minimum of one foreign language.				×		
10		Prepare design and production reports, give and receive clear and intelligible instructions.				×		
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.					×	
12		Awareness of professional and ethical responsibility.				×		
13		Information about business life practices such as project management, risk management, and change management.				×		
14		Information about awareness of entrepreneurship, innovation, and sustainable development.			×			
15		Knowledge about contemporary issues and the global and societal effects of engineering practices on health, environment, and safety.				×		
16		Knowledge about awareness of the legal consequences of engineering solutions.			×			

	17	Knowledge on standards used in engineering practice.			×		
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