

1. Course Description

COURSE DESCRIPTION FORM	
Course Code and Title	CHEM152 GENERAL CHEMISTRY LAB.
Course Semester	2
Catalog Description (Content) of the Course	Physical and chemical properties of substances, Determination of constant proportions, Determination of gas constant, Diffusion, Determination of molecular mass by freezing point depression, Effect of temperature on reaction rate, Chemical equilibrium, Acid-base titration, pH and indicators, Redox reactions.
Main Textbook	Genel Kimya Petrucchi, Palme yayınları, 2012, Çev. Tahsin UYAR, Serpil AKSOY, Recai İNAM.
Supporting Textbooks	General ChemistryLaboratory Manual, Gazi Kimya, S. Aksoy, H.İ. ÜNAL, R. İNAM,2008. Genel Kimya Deneyleri, 2006, Gazi Üniv. Fen Fak. Editör. Prof.Dr. Güler Somer.
Course Credit (ECTS)	2
Prerequisites of the Course (Compulsory attendance should be indicated here.)	According to the regulation, the requirement of students to attend classes is at least 70% for each semester. There is no other prerequisite or co-requisite for this course.
Type of the Course	Compulsory
Instruction Language of the Course	English
Object and Target of the Course	Understanding of the basic principles of the chemistry by simple experiments about the subjects in general chemistry. Experimental observation of chemical laws that constitute the foundations of a practiced science fellow.
Learning Outcomes of the Course	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. 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; 8.Ability to work individually. 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, 10prepare 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 13Information 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.			
Mode of Delivery	The mode of delivery of this course is face to face			
Weekly Schedule of the Course	Week 1: General information about laboratory. Week 2: Recognition of the materials by their physical and chemical properties. Week 3: Stoichiometry. Week 4: Calculation of ideal Gas Constant. Week 5: Diffusion. Week 6: Determination of molecular mass from freezing point depression. Week 7: Effect of temperature on the reaction rate. Week 8: Chemical equilibrium. Week 9: Acid-base neutralization titrations. Week 10: Indicators and pKadetermination. Week 11: Redox reactions. Week 12: Make-up Week 13: Make-up Week 14: Make-up			
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 Practicing Hours of Course Per Week Preparing Reports Mid-Term and Studying for Mid-Term Final and Studying for Final			
Assessment Criteria		Quantity	Total Contribution (%)	
	Midterm	1	20	
	Homework			
	Assignment	10	20	
	Projects			
	Practice			
	Quiz	10	20	
	Contribution of In-term Studies to Overall Grade		60	
	Contribution of Final Examination to Overall Grade		40	
	Attendance			
Workload of the Course	Activity	Total Week Count	Weekly Duration (in hour)	Total Workload in Semester
	Theoretical Study Hours of Course Per Week	0	0	0
	Practicing Hours of Course Per Week	14	2	28
	Reading	0	0	0
	Searching in Internet and	0	0	0

	Library							
	Designing and Applying Materials		0	0	0			
	Preparing Reports		13	2	26			
	Preparing Presentation		0	0	0			
	Presentation		0	0	0			
	Mid-Term and Studying for Mid-Term		1	2	2			
	Final and Studying for Final		1	2	2			
	Other		0	0	0			
	Total work load				58			
	Total work load/25				2,32			
	ECTS of the course				2			
Course's Contribution To Program	No	Program 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			
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