



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
KİM121	GENERAL CHEMISTRY II	SPRING	C	4+0+0		5	Turkish

COURSE INFORMATION

Course Catalog Description (Content)	Solutions: Solutes and solutes, factors affecting dissolution, why dissolution occurs, colligative properties of solutions. Kinetics: Concentration and rate, control of reaction rate, reaction mechanisms. Chemical Equilibrium: Equilibrium and composition, use of equilibrium constant, reaction of equilibrium to change, Acids and Bases: What are acids and bases? Calculation of the pH of strong acids and bases, weak acids and bases, weak and strong acid and base solutions. Salts: Neutral, acidic and basic ions, calculation of pH of mixed solutions, titration, buffer solutions, solubility. Thermochemistry: Energy, heat, and enthalpy, enthalpy of chemical reactions, heats of reaction. Thermodynamics: First law of thermodynamics, direction of spontaneous reaction, reaction entropy, free energy. Electrochemistry: Electron transfer, galvanic cells, cell representation, electrolysis. Nuclear chemistry and radioactivity. Organic Chemistry: organic compounds and their structures, nomenclature of organic compounds.
The Aim of the Course	The main aim of the course is to give basic concepts about properties of solutions, chemical kinetics, chemical equilibrium, acids and bases, solubility equilibrium, thermodynamics, electrochemistry and organic chemistry that may be necessary in chemistry education.
Course Level	Bachelor degree
Course Language	Turkish
Teaching method	(X) Formal () Online () Mixed/Hybrid
Teaching Staff of the Course	Relevant Lecturer
Prerequisite Course(s) of the Course	
Learning Outcomes from the Course	<ol style="list-style-type: none">1- Learns the properties and numerical properties of solutions, can prepare solutions in different concentration units.2- Learns the chemical reaction rate and its measurement, the factors affecting the reaction rate and can make calculations.3- Comprehends the phenomenon of chemical equilibrium and the factors affecting it, can make calculations about the balance.4- Learns acid-base concepts, can prepare buffer solution, measure pH.5- Learns the concepts of thermodynamics, can determine whether the reaction is voluntary or involuntary, and relates thermodynamic results to daily life.6- Learns electrochemical cell types, can produce batteries from chemical reactions and learns about industrial electrolysis processes.7- Learns the structures and naming of organic compounds.

COURSE CONTENT

Week	Theory	Practice/Laboratory
1	Introduction, Definition and General Information	

2	Chemical Kinetics	
3	Chemical Kinetics	
4	Chemical Equilibrium	
5	Chemical Equilibrium	
6	Acids and Bases	
7	Acids and Bases	
8	Acid-Base Balances	
9	Solubility and Complex Ion Balances	
10	Solubility and Complex Ion Balances	
11	Electrochemistry	
12	Corrosion Chemistry	
13	Core Chemistry	
14	Organic Chemistry	
15	Final Exam	

Course Learning Resources

1- Genel Kimya: İlkeler ve Modern Uygulamalar 1, R.H. Petrucci, W.S. Harwood, F.G. Herring, Çeviri Editörleri: T. Uyar, S. Aksoy, R. İnam, Onuncu Baskıdan Çeviri, Palme Yayıncılık, 2001.

2- Temel Kimya: Moleküller, Maddeler ve Değişimler, Atkins ve Jones, Çeviri Editörleri: E. Kılıç, F. Köseoğlu, H. Yılmaz, İkinci Baskıdan Çeviri, Bilim Yayıncılık

3- Genel Kimya-Temel Kavramlar, R. Chang, K.A. Golsby, Çeviri Editörleri: R. İnam, S. Aksoy, T. Uyar, Yedinci Baskıdan Çeviri, Palme Yayıncılık, 2016.

4- Prof. Dr. Ender Erdik, Prof. Dr. Yüksel Sarıkaya, Temel Üniversite Kimyası, Gazi Kitabevi, 2000.

ASSESSMENT CRITERIA

Work Activities During the Semester	Number	Contribution
Homework	2	%40
Practice		
Forum/ Discussion Application		
Short Exam (Quiz)	3	%60
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
Brainstorming	14	1	14
Individual study	14	2	28
Attendance to Class	14	4	56
Homework	2	1	2
Quiz (Quiz)	2	1	2
Quiz Preparation	2	3	6
Final Exam	1	2	2
Preparation for the Final Exam	3	5	15
Total Workload			125
Total Workload / 25 (s)			125/25

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.					
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			