



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
KİM 244	Analytical Chemistry Laboratory II	4	C	0+4+4	4	4	Turkish

COURSE INFORMATION

Course Catalog Description (Content)	Gravimetric Determinations/ Determination of Mn^{2+} / Determination of Fe^{2+} / Volumetric Determination / Neutralization titrations / Determination of $OH^-CO_3^{2-}$ / Alkalimetry / Determination of $H_3PO_4-NaHPO_4$ / Oxidation-reduction titrations / Permanganate titrations / Determination of Mn^{2+} / Determination of NO_3^- / Iodometry / Determination of $Cr_2O_7^{2-}$ / Determination of active chlorine/ Bromometry / Determination of As(III) / Titrations dichromate / Determination of $Fe^{2+}-Fe^{3+}$ mixture / Precipitation titrations / Determination of bromide / Complexation titrations / Determination of Mg (II) - Zn (II) mixture / Determination of Fe (III) – Al(III) mixture / Determination of SO_4^{2-} , Quantitative analysis of solid samples of natural
The Aim of the Course	Chemistry details the design of the experiment, and collecting, analyzing and interpreting the efficient and accurate use of property, provide the opportunity to develop the skills to make the application in laboratory
Course Level	Undergraduate
Course Language	Turkish
Teaching method	(X) Formal () Online (X) Mixed/Hybrid
Teaching Staff of the Course	Prof. Dr. İsmail AKDENİZ
Prerequisite Course(s) of the Course	-
Learning Outcomes from the Course	<ol style="list-style-type: none">1. Learn to be self-confident and progressive groups more likely to work.2. Getting ability to identify problems in chemistry and related fields, the ability to identify and solve.3. Having scientific and multi-dimensional thinking skills.4. Having researching and questioning, sharing the ability to have the mentality.5. Defines and comprehends chemical concepts and theories in Analytical Chemistry.

COURSE CONTENT

Week	Theory	Practice/Laboratory
1		Gravimetric Determinations / Determination of Mn^{2+}
2		Gravimetric Determinations / Determination of Fe^{2+}
3		Volumetric Determination / Neutralization titrations / Determination of $OH^-CO_3^{2-}$
4		Determination of $H_3PO_4-NaHPO_4$
5		Oxidation-reduction titrations Permanganate titrations / Determination of Mn^{2+} / Determination of NO_3^-
6		Iodometry / Determination of $Cr_2O_7^{2-}$ / Determination of active chlorine

7	Bromometry / Determination of As(III)
8	Bromometry / Determination of As(III)
9	Titrations dichromate / Determination of Fe ²⁺ -Fe ³⁺ mixtures
10	Precipitation titrations / Determination of bromide
11	Complexation titrations / Determination of Mg (II) - Zn(II) mixture
12	Complexation titrations / Determination of Fe (III) - Al(III) mixture
13	Complexation titrations / Determination of SO ₄ ²⁻
14	Quantitative analysis of solid samples of natural
15	Final Exam

Course Learning Resources

1. Fundamentals of Analytical Chemistry, D. A. Skoog , D. M. West, F.J. Holler S. College Pub. US, 1996
2. Quantitative chemical analysis, D.C. Harris, W.H. Freeman and Company, US, 1982
3. Analytical Chemistry Laboratory Experiment Sheet, 2018

ASSESSMENT CRITERIA

Work Activities During the Semester	Number	Contribution
Homework		
Practice		
Forum/ Discussion Application		
Short Exam (Quiz)	7	100
Ratio Of Semester Studies To Semester Success (%)		50
Ratio of Final to Success (%)		50
Total		%100

COURSE WORKLOAD TABLE

Activity	Total Weeks	Duration (Weekly Hours)	Total Workload
Theory	14	4	56
Practice			
Forum/ Discussion Application			
Reading			
Internet Scanning, Library Study			
Material Design, Application			
Report Preparation	14	2	28
Presentation Preparation			
Presentation			
Final Exam	1	2	2
Preparation for the Final Exam	1	10	10
Other(s) (Preparation for Quizzes and Exams)	7	2	14
Total Workload			110
Total Workload / 25 (s)			110/25
ECTS Credits of the Course			≅4
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	