Chemistry (English)			
Bachelor	TR-NQF-HE: Level 6	QF-EHEA: First Cycle	EQF-LLL: Level 6

Course Introduction and Application Information

Course Code:	CHEM210
Course Name:	Inorganic Chemistry 1
Semester:	Spring
Course Credits:	ECTS: 6
Language of instruction:	English
Course Condition:	
Does the Course Require Work Experience?:	No
Type of course:	Compulsory Courses
Course Level:	Bachelor | TR-NQF-HE:6. Master`s Degree | QF-EHEA:First Cycle | EQF-LLL:6. Master`s Degree
Mode of Delivery:	Face to face
Course Coordinator:	Dr. Öğr. Üy. MELİKE ATAKOL
Course Lecturer(s):	Dr. Arda Atakol
Course Assistants:	

Course Objective and Content

Course Objectives:	The primary aims of the course are to provide students with a perspective on the role of inorganic compounds in chemical events that occur in materials science, biological systems, and cosmic objects by explaining the principles on which inorganic chemistry is based on, and to place seeds that would stimulate their scientific curiosity.
Course	Explanations on the structures of atoms and molecules, molecular symmetry and symmetry

Content:	elements, chemical bonds and bonding theories, lattice structures and lattice energies of solids, acids and bases, introduction to coordination compounds, reduction and oxidation reactions, introduction to non-aqueous chemistry.

Learning Outcomes

The students who have succeeded in this course;
1) Can define the structures of atoms and molecules in detail.
2) Can interpret the chemical bonds and symmetry elements to explain molecular structures.
3) Can construct molecular orbital diagrams for polyatomic elements and compounds.
4) Can interpret reactions by using the acid-base theories and reduction-oxidation events.
5) Can construct ideas about the interactions and properties of materials by evaluating the chemical structures of particles.

Course Flow Plan

Week	Subject	Related Preparation
1)	Atoms	-
2)	Molecules	
3)	Introduction to molecular symmetry	
4)	Point groups and chirality	
5)	Bonding in polyatomic molecules	
6)	Molecular orbital theory	
7)	Structure of metallic and ionic solids	
8)	Midterm Exam	
9)	Lattice energy and defects in lattices	
10)	Acids, bases and ions in aqueous medium	
11)	Introduction to coordination compounds	
12)	Reduction and oxidation	
13)	Introduction to non-aqueous media	
14)	Intramolecular and intermolecular interactions	

Sources

Course Notes /	Inorganic Chemistry, C.E. Housecroft and A. G. Sharpe, fifth edition, Pearson

Textbooks:	Prentice Hall, 2018
References:	Inorganic Chemistry, P.F. Shriver, P.W.Atkins, 5th edition, Oxford, Uni. Press, 2010 Inorganic Chemistry. G. L. Miessler, P. J. Fischer, D. A. Tarr. 5th Edition, Pearson, 2014

Course - Program Learning Outcome Relationship

Course Learning Outcomes	1	2	3	4	5
Program Outcomes					
1) Knows the basic concepts related to the theory and applications of chemistry, uses theoretical and applied knowledge, can select, develop and design methods.					
2) Makes experimental planning and application for analysis, synthesis, separation and purification methods, provide solutions to the problems encountered and interpret the results.					
3) Expresses the basic principles of sample preparation techniques and instrumental analysis methods used in qualitative and quantitative analysis of items, discusses their application areas.					
4) Has knowledge about the sources, production, industrial applications and technologies of chemical substances.					
5) Makes structural analyzes of chemical substances and interprets the results.					
6) Work individually and in multidisciplinary groups, take responsibility, plan their tasks and use time effectively.					
7) Follows the information in the field and communicates with colleagues by using English at a professional level.					
8) Uses information and communication technologies along with computer software at the level required by the field.					
9) Follows the national and international chemistry literature, transfers the knowledge gained orally or in writing.					
10) Determines self-learning needs, manages/directs his/her learning.					
11) Takes responsibility and adheres to the ethical values required by these responsibilities.					

Course - Learning Outcome Relationship

No Effect	1 Lowest	2 Average	3 Highest

	Program Outcomes	Level of Contribution
1)	Knows the basic concepts related to the theory and applications of chemistry, uses theoretical and applied knowledge, can select, develop and design methods.	3
2)	Makes experimental planning and application for analysis, synthesis, separation and purification methods, provide solutions to the problems encountered and interpret the results.	
3)	Expresses the basic principles of sample preparation techniques and instrumental analysis methods used in qualitative and quantitative analysis of items, discusses their application areas.	
4)	Has knowledge about the sources, production, industrial applications and technologies of chemical substances.	
5)	Makes structural analyzes of chemical substances and interprets the results.	2
6)	Work individually and in multidisciplinary groups, take responsibility, plan their tasks and use time effectively.	
7)	Follows the information in the field and communicates with colleagues by using English at a professional level.	
8)	Uses information and communication technologies along with computer software at the level required by the field.	
9)	Follows the national and international chemistry literature, transfers the knowledge gained orally or in writing.	
10)	Determines self-learning needs, manages/directs his/her learning.	2
11)	Takes responsibility and adheres to the ethical values required by these responsibilities.	

Assessment & Grading

Semester Requirements	Number of Activities	Level of Contribution
Homework Assignments	4	% 20
Midterms	1	% 30
Final	1	% 50

total		**% 100**
PERCENTAGE OF SEMESTER WORK		% 50
PERCENTAGE OF FINAL WORK		% 50
total		**% 100**

Workload and ECTS Credit Calculation

Activities	Number of Activities	Preparation for the Activity	Spent for the Activity Itself	Completing the Activity Requirements	Workload
Course Hours	13	3			39
Study Hours Out of Class	13	4			52
Homework Assignments	5	2			10
Midterms	1	14			14
Final	1	24			24
Total Workload					**139**