Faculty of Metalurgy and Technology / ENVIRONMENTAL PROTECTION / INORGANIC CHEMISTRY

Course:	INORGANIC CHEMISTRY			
Course ID	**Course status**	**Semester**	**ECTS credits**	**Lessons** (Lessons+Exercises+Laboratory)
2257	Mandatory	2	6	2+0+2
Programs	ENVIRONMENTAL PROTECTION			
Prerequisites	There are no requirements for registering and listening to the subject			
Aims	By studying this subject, students acquire basic knowledge of inorganic chemistry: they get to know the elements of PSE, their most important compounds, properties and applications, and they are trained for practical work through laboratory exercises.			
Learning outcomes	- Knows the general characteristics of s, p and d elements - It connects the regularities and trends of changes of essential quantities in the periodic system of elements with the position of the element in the PSE, atomic structure and chemical bond - Classifies the basic types of inorganic compounds according to their properties, structure and application - Compares the physical and chemical properties of the basic types of inorganic compounds depending on the elements that make them up and their oxidation number - Assesses the potential toxicity of important groups of inorganic compounds to plant and animal life, humans and ecosystems - Demonstrates laboratory and teamwork skills			
Lecturer / Teaching assistant	Prof. Dr. Željko Jaćimović, MSc Mia Stanković			
Methodology	Lectures and laboratory exercises. Students perform 12 laboratory exercises and do 3 homework assignments related to the material covered in the laboratory exercises and 2 control tests related to the material covered in the lectures. Students have special preparation dates for taking the colloquium and exam.			
Plan and program of work				
Preparing week	Preparation and registration of the semester			
I week lectures	Introduction to the subject and sharing information about the subject. Chapter processing: Complex (coordinating compounds)			
I week exercises	Oxido-reduction reactions			
II week lectures	Processing of the chapter: General characteristics of s and p elements, hydrogen			
II week exercises	Complex (coordination) compounds			
III week lectures	Processing of the chapter: Elements of group I PSE (alkali metals)			
III week exercises	Laboratory production and purification of hydrogen, oxygen, nitrogen, carbon(IV)-oxide and hydrogen sulfide Pz: Control test			
IV week lectures	Chapter treatment: Elements 13 of the PSE group (boron group)			
IV week exercises	Characteristic reactions of the most important cations. Results and analysis of the control test.			
V week lectures	Chapter Cover: Elements 14 of Group PSE (Carbon Group)			
V week exercises	Characteristic reactions of the most important anions (sulfate, carbonate, phosphate, chloride and sulfide anion) Distribution of homework - lecture term			
VI week lectures	Chapter treatment: Elements 15 of group PSE (nitrogen group)			
VI week exercises	Elements of group 14 PSE (tin and lead). Division of homework. Handing in homework.			
VII week lectures	Chapter processing: Elements 16 of the PSE group (chalcogenous elements, oxygen)			
VII week exercises	Elements 15 of the PSE group (arsenic, antimony and bismuth). Submission of homework II.			
VIII week lectures	Processing of the chapter: Elements 16 of the PSE group (chalcogenous elements, sulfur, selenium, tellurium and polonium)			
VIII week exercises	Elements of group 11 (copper and silver)			
IX week lectures	Chapter processing: Elements 17 of the PSE group (halogen elements)			
IX week exercises	Group 6 and 7 elements (chromium and manganese)			
X week lectures	Chapter processing: Elements 18 of the PSE group (noble gases). General characteristics of d and f elements.			

X week exercises	Elements 8,9 and 10 of the PSE group (iron, cobalt, nickel) Pz Control test Division III homework
XI week lectures	Processing of the chapter: Elements 11 of the PSE group (copper, silver, gold)
XI week exercises	Synthesis of inorganic preparation and yield calculation. Control test results and analysis. Handing in homework III.
XII week lectures	Chapter treatment: Elements of group 12 PSE (zinc, cadmium and mercury)
XII week exercises	Synthesis of inorganic preparation and yield calculation - Part II COLLOQUIUM
XIII week lectures	Chapter treatment: Elements 6 and 7 of the PSE group (chromium, molybdenum, tungsten and manganese)
XIII week exercises	Colloquium results and analysis
XIV week lectures	Chapter treatment: Elements 8,9 and 10 PSE (Iron, Cobalt, Nickel)
XIV week exercises	CORRECTION COLLOQUIUM
XV week lectures	Consultations, answers to students questions and exam preparation
XV week exercises	Compensation for missed exercises. Colloquium results and analysis
Student workload	weekly 8 credits x 40/30 = 11.06 hours Lectures: 2.15 hours Exercises: 2.15 hours Individual student work: 6.36 hours of independent study in the semester Teaching and final exam: (11.06 x16)= 177.36 hours Necessary preparation before the beginning of the semester (administration, registration, certification) 2 x 11.06 = 22 hours and 18 minutes Total workload for the course 8x30 = 240 hours Supplementary work Preparation of the remedial colloquium and exam, including taking the remedial colloquium and exam of 32 hours 36 minutes. Necessary preparations for performing laboratory exercises (15 x 0.5 hours) = 7 hours and 30 minutes Load structure: 177 hours and 36 minutes (teaching) + 22 hours and 18 minutes (preparation) + 40 hours and 06 minutes (additional work):

Per week	**Per semester**
6 credits x 40/30=8 hours and 0 minuts 2 sat(a) theoretical classes 2 sat(a) practical classes 0 excercises **4 hour(s) i 0 minuts** of independent work, including consultations	Classes and final exam: **8 hour(s) i 0 minuts x 16 =128 hour(s) i 0 minuts** Necessary preparation before the beginning of the semester (administration, registration, certification): **8 hour(s) i 0 minuts x 2 =16 hour(s) i 0 minuts** Total workload for the subject: **6 x 30=180 hour(s)** Additional work for exam preparation in the preparing exam period, including taking the remedial exam from 0 to 30 hours (remaining time from the first two items to the total load for the item) **36 hour(s) i 0 minuts** Workload structure: **128 hour(s) i 0 minuts (cources), 16 hour(s) i 0 minuts (preparation), 36 hour(s) i 0 minuts (additional work)**
Student obligations	Students are required to complete the program of exercises provided.
Consultations	Prof. Dr. Željko Jaćimović - Wednesday from 10 a.m. to 12 p.m MSc Mia Stanković- appointments after lab exercises
Literature	(1) Filipović, S. Lipanović, Opća i organska kemija, Školska knjiga, Zagreb, (2) D. Poleti, Opsta hemija II dio/Hemija elemenata, TMF Beograd (3) M.Dragović, M.Popović,S.Stević, V. Šćepanović, Opšta hemija I dio (4) V. Češljević, V. Leovac, E. Ivegeš, Praktikum neorganske hemije- prvi dio, PMF Novi Sad (5) S. Nešić, J.Vučetić, Neorganska preparativna hemija (6) S. Nešić ,R.Bulajić, A. Kostić, S. Marinković, Praktikum opšte hemije sa kvalitativnom analizom
Examination methods	Attendance at lectures and control tests - 3 points (2 control tests), attendance at exercises and submitted reports - 4 points, homework 3 points, colloquium - 40 points, final exam - 50 points. The exam was passed with 50 points
Special remarks	Laboratory exercises are performed in groups with a maximum of 12 students
Comment	-

Grade:	F	E	D	C	B	A
Number of points	less than 50 points	greater than or equal to 50 points and less than 60 points	greater than or equal to 60 points and less than 70 points	greater than or equal to 70 points and less than 80 points	greater than or equal to 80 points and less than 90 points	greater than or equal to 90 points