Faculty of Metalurgy and Technology / CHEMICAL TECHNOLOGY / INORGANIC CHEMICAL TECHNOLOGY I

Course:	INORGANIC CHEMICAL TECHNOLOGY I			
Course ID	**Course status**	**Semester**	**ECTS credits**	**Lessons** (Lessons+Exercises+Laboratory)
5717	Mandatory	6	5	2+3+0
Programs	CHEMICAL TECHNOLOGY			
Prerequisites	Without conditions for lecture			
Aims	Getting familiar with process of processing raw materials. During this process the chemical structure of inorganic non metal raw materials is changed. Getting familiar with instruments for chemical reactions of industrial proportions.			
Learning outcomes	After passing this exam, student will be able to: 1. Explain the development and intensification of technological processes 2. Differentiate the concentration of raw materials in gaseous, liquid and solid state 3. Differentiate the products of classic and modern ceramics 4. Explain the difference in production of air-based and hydraulic binders 5. Present the reaction model in solid state 6. Posses the knowledge about the differences between the crystalline and glassy state 7. Explain the differences in production of various pigments			
Lecturer / Teaching assistant	dr Biljana Zlatičanin			
Methodology	Lectures, exercise (laboratory and calculus). Consulting.			
Plan and program of work				
Preparing week	Preparation and registration of the semester			
I week lectures	Getting students familiar with lecture, tests, and with final exam. Introduction. Basic technical vocabulary. Raw materials in chemical indusrty.			
I week exercises	Granulometric analysis by Andreasen			
II week lectures	Concetration of raw materials. Mater. and energ. balance.The new processes in inorganic chemical technolog			
II week exercises	Chemical analysis of silicates.			
III week lectures	Inorganic mortar bonding agents. Mechanisms of strengthening. Plaster.			
III week exercises	Determination of SiO2 and insoluble residue.			
IV week lectures	Lime. Manufacturing and binding of lime.			
IV week exercises	Determination of total oxides (R2O3)			
V week lectures	Magnesium bonding agents.			
V week exercises	Detirmination of CaO.			
VI week lectures	Cements, types and method of productions. Influence of some clincker minerals in solidification of cement.			
VI week exercises	Field exercise – plant visit.			
VII week lectures	Ceramics based on clay as raw material. Basic processes in production of clays as raw material.			
VII week exercises	Field exercise – plant visit.			
VIII week lectures	Methods of processing ceramics materials. Processes before and during firings.			
VIII week exercises	I test			
IX week lectures	Production of NaCl.			
IX week exercises	Correctional first test			
X week lectures	Refractory materials. Characteristics subject to the conditions exploitation. Processes od production.			
X week exercises	Calculus exercise.			
XI week lectures	Glass.Structure and properties of glass. Raw materials for production of glass.			
XI week exercises	Determination of mass loss on 110oC technical NaCl			
XII week lectures	Glass melting. Glass annealing. Types of glass.			
XII week exercises	Determination of content of substances insoluble in water and technical NaCl			

XIII week lectures	The basic proces of leaching of bauxite. Production of aluminium hydroxide from bauxite.
XIII week exercises	Hydrolytic resistance of glass.
XIV week lectures	Inorganic pigments,classification and use of inorganic pigments.
XIV week exercises	II test
XV week lectures	Production of inorganic pigments with different procedures.
XV week exercises	Correctional second test.
Student workload	weekly: 5 credits x 40/30 hours=6 hours & 40 min in semester: 5 X 30=150 hours

Per week	**Per semester**
5 credits x 40/30=6 hours and 40 minuts 2 sat(a) theoretical classes 0 sat(a) practical classes 3 excercises **1 hour(s) i 40 minuts** of independent work, including consultations	Classes and final exam: **6 hour(s) i 40 minuts x 16 =106 hour(s) i 40 minuts** Necessary preparation before the beginning of the semester (administration, registration, certification): **6 hour(s) i 40 minuts x 2 =13 hour(s) i 20 minuts** Total workload for the subject: **5 x 30=150 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) **30 hour(s) i 0 minuts** Workload structure: **106 hour(s) i 40 minuts (cources), 13 hour(s) i 20 minuts (preparation), 30 hour(s) i 0 minuts (additional work)**
Student obligations	Students are obligated to follow classes and to be present on both tests.
Consultations	Thursday: 9-11am; Friday 9-11am
Literature	Lj. Kostić Gvozdenović, R. Ninković, ”Neorganska hemijska tehnologija”, TMF, Beograd, 1997 D. Vitorović, ”Hemijska tehnologija”, Naučna knjiga, Beograd, 1990 M. Krgović, Lj. Kostić Gvozdenović, R. Ninković, ”Neorganska hemijska tehnologija-praktikum”,
Examination methods	- Activities during exercise and reports given: (0-5 pts) - Seminary work: (0-5 pts) - I test: (0-20 pts) - II test: (0-20 pts) - Final exam: (0-50 pts). Student pass the exa
Special remarks	
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