

Course Syllabus

Academic year: 2018-2019

Institution	University of Petroșani
Faculty	Mechanical and Electrical Engineering
Field of study	Industrial engineering
Level	Bachelor
Program of study	Machine Building Technology

Course	Chemistry
Code	2BB1OF01
Year of study (semester)	I (I)
Number of hours	56
Number of credits	4
Professor	Lecturer eng,Ph.D. MOLDOVAN Clementina

No.	Topic
1.	Fundamental Laws of Chemistry. Mass Conservation Law. The law of the defined proportions. The law of multiple proportions. The law of constant volumes. Avogadro's law. The molar volume.
2.	Structure of the atom. The nucleus of the atom
3.	Periodic system of elements. Periodicity of the physico-chemical properties of the elements. The valency of the elements towards oxygen, fluorine and hydrogen.
4.	Chemical bonds (ionic bond, covalent bond, covalent-coordinating bond). Mechanical quantum theory of covalent bonding. Metal bond, hydrogen and Van der Walls.
5.	Electrochemistry. Electrolytic dissociation. Ion ion dissociation. pH and pH of the solutions. Electric current action on electrolytes. Conductivity of electrolytes.



Ministry of Education
UNIVERSITY OF PETROSANI

20 Universitatii Street, Petrosani, County of Hunedoara, Romania
e-mail: erasmusplus@upet.ro | erasmus.upet@gmail.com
tel: +40 (254) 54 90 09 | www.upet.ro



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6.	Electric piles. Main types of electrodes. Potential of the electrode. Electromotor voltage of electric cells. Properties. Uses.
7.	Industrial and residual waters. Methods of softening of industrial waters.
8.	Chemical and electrochemical corrosion of metals. Methods of protection against corrosion

