

FACULTY:	Institute of Technology and Education
FIELD OF STUDY:	Materials Science and Engineering
COURSE TITLE:	Chemistry
LECTURER'S NAME:	Ewa Dobruchowska, PhD, lecturer
E-MAIL ADDRESS OF THE LECTURER:	ewa.dobruchowska@tu.koszalin.pl
ECTS POINTS FOR THE COURSE:	4
ACADEMIC YEAR:	2014/2015
SEMESTER: (W – winter, S – summer)	W
HOURS IN SEMESTER:	30+30=60
LEVEL OF THE COURSE: (1 st cycle, 2 nd cycle, 3 rd cycle)	1 st cycle
TEACHING METHOD: (lecture, laboratory, group tutorials, seminar, other-what type?)	Lectures (30h), Classes (30h)
LANGUAGE OF INSTRUCTION:	English
ASSESSMENT METOD: (written exam, oral exam, class test, written reports, project work, presentation, continuous assessment, other – what type?)	Written exam, class test
COURSE CONTENT:	The course focuses on chemical reactions occurring in the nature, and subsequently on the importance of the certain reactions in production of engineering materials and designing their properties, as well as potential energy sources. Topics cover the structure of mater including information on the periodic table of elements, chemical bonding, chemical formulas and composition stoichiometry; some types of chemical reactions, chemical equilibrium and chemical kinetics; basis of electrochemistry including properties of solutions and electrolytes, electrolytic dissociation processes, electrochemical cells – structure and principles of operation. Lecture and related exercises also explore the fundamentals of solid state chemistry, which is the basis for understanding the physicochemical properties of engineering materials. Additionally, the lecture provides basic information on the chosen groups of organic compounds, their properties and application.
ADDITIONAL INFORMATION:	Required knowledge – basics of inorganic, organic and physical chemistry
RECOMMENDED LITERATURE	Basic handbook: K.W. Whitten, R.E. Davis, L. Peck, G.G. Stanley, <i>General Chemistry</i> , e.g. 7 th edition, Brooks/Cole 2003. Supplementary handbooks: 1. J. Kotz, P.M. Teichel, J.R. Townsend, <i>Chemistry and Chemical Reactivity</i> , e.g. 7 th edition, Cengage Learning 2005. 2. W.L. Masterton, C.N. Hurley, E.J. Neth, <i>Chemistry Principles and Reactions</i> , e.g. 7 th edition, Brooks/Cole

and Cengage Learning 2009.

3. E.W. Pitzer, *Inductory Chemistry*, 1st edition, <http://bookboon.com> 2014.

4. D. Fahlman, *Materials Chemistry*, Springer 2007.

5. P. Atkins, J. de Paula, *Atkins' Physical Chemistry*, e.g. 8th edition, Oxford University Press 2006.