



## SUBJECT DATASHEET

<b>Semester:</b>	2010/11/1
<b>Subject:</b>	General and Inorganic Chemistry
<b>Code:</b>	VEMKAKB112A
<b>Responsible department:</b>	Department of General and Inorganic Chemistry
<b>Responsible department code:</b>	MKAK
<b>Responsible lecturer:</b>	Dr. Lajos Fodor

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### Educational objectives:

To acquire the basic knowledge of general and inorganic chemistry

### Detailed content of the subject:

1. Properties of gas, liquid, and solid states. Basic characterization of the homogenous and the heterogeneous systems. 2. Chemical equilibrium. Basic principles of thermo chemistry. Spontaneity of chemical process. 3. Basic principles of electrochemistry. Characterization of some commercial batteries. Corrosion of iron. 4. Basic principles of reaction kinetics. Catalysis. Atomic structure. Atomic theories. 5. Atomic orbitals, quantum numbers, electron configuration. 6. Basic principles of chemical bonds. The types of chemical bond. Basic principles of molecular symmetry. (VSEPR, VB and LCAO-MO theory.) 7. 1st test paper. Periodic table of the elements, periodic properties. 8. Oxidation number. Completing chemical equations. Nomenclature of inorganic compounds. 9. Physical and chemical properties of hydrogen and its binary compounds. Production and application of hydrogen, and its abundance in the nature. Noble gases. 10. Characterization of the elements of the main group VII and its most important compounds. 11. Characterization of the elements of the main group VI and its most important compounds. 12. Characterization of the elements of the main group V and its most important compounds. 13. Characterization of the elements of the main group IV and III, and its most important compounds. 14. 2nd test paper. Characterization of the elements of the main group I and II, and its most important compounds. 15. Physical and chemical properties of transition metals. Their most important inorganic compounds, abundance in the nature, production, and application. Basic characterization of lanthanids and actinids.

### Requirements:

To get at least 40% of the overall maximum points of the two test paper

### Required and suggested references:

Horváth Attila, Sebestyén Attila, Zábó Magdolna: Általános Kémia, Veszprémi Egyetemi Kiadó, 1991 Bodor Endre: Szervetlen Kémia I., Veszprémi Egyetemi Kiadó, 1994 Geoff Rayner-Canham: Descriptive Inorganic



# UNIVERSITY OF PANNONIA

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### Required and suggested references:

Chemistry (2nd ed.), W. H. Freeman and Co., New York, 2000 Ebbing D. D.; General Chemistry, Houghton Mifflin Co, Boston, 1984 Cotton F. A., Wilkinson G.; Basic Inorganic Chemistry, J. Wiley and Sons, New York, 1976 Masterton, W. L. and Hurley C. N.; Chemistry: Principles and Reactions, Saunders College Publishing, Philadelphia, 1989