

<i>Programme</i>	Chemistry BSc
<i>Course title</i>	Bioinorganic Chemistry
<i>Name of lecturer</i>	Margit Varga
<i>Type of course</i>	compulsory, <u>semi-optional</u> , elective
<i>Module</i>	non-chemical, core-chemical, <u>specialized chemical</u> , chemistry teacher
<i>Course code</i>	KV3EN7
<i>Number of credits</i>	2
<i>Year of study</i>	3
<i>Semester</i>	<u>Fall, spring</u>
<i>Form of tuition</i>	<u>lectures</u> , practice, laboratory practice, other
<i>Course contents</i>	Development of bioinorganic chemistry. Biochemical evolution: the effect of primeval atmosphere to the biochemical evolution of copper and iron. Summarized presentation of the role of elements in biological systems. Interaction of geological and biological environment; uptake of elements. Bioinorganic chemistry of essential (Na, K, Mg, Ca, Fe, Mn, Co, Cr, Ni, Cu, Zn and Mo) and some non-essential (Ti, V) metals. Biochemistry of oxygen and nitrogen groups, complexes of oxygen and nitrogen. Biomineralization. Toxicity of elements: molecular mechanism of toxicity, effects of some toxic elements (Hg, Pb, Cd, Al, As) for the living organisms. Natural detoxification. Medical problems: disorder of copper metabolism (Wilson-, Menkes disease) and therapy. Effect of deficiency and excess of elements. Metals and metal-complexes in the therapy of different diseases (Li, Au): Anticarcinogenic metal-complexes. Methods of physical-chemistry for the investigation of biological systems.
<i>Assessment method</i>	written/ <u>oral examination</u> , practical course mark, other
<i>Recommended reading</i>	Endre Kőrös: Bioinorganic chemistry (lecture notes) W. Kaim, B. Schwederski: Bioinorganic Chemistry, Wiley, 1994
<i>Language of instruction</i>	Hungarian