УНИВЕРЗИТЕТ У БАЊОЈ ЛУЦИ
UNIVERSITY OF BANJA LUKA
ПРИРОДНО-МАТЕМАТИЧКИ ФАКУЛТЕТ
FACULTY OF NATURAL SCIENCES AND MATHEMATICS

CHEMISTRY DEPARTMENT | FIRST CYCLE OF STUDY | Chemistry/Chemistry Education

Course name	Chemical Kinetics and Catalysis			
Course code	**Course status**	**Semester**	**Hours of instruction**	**ECTS**
1C16HOS1103	elective	V	2+2	5 (GC) and 6 (TC)
Teacher(s)	**Prof. Dijana Jelić PhD**			

Prerequisite course(s)	**Entry requirements**
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Course goals

Introducing students the kinetics, catalysis and mechanisms of basic catalytic processes and the most common used catalytic reactions, the most common chemical reaction pathways, as well as biochemical and biological catalysis reactions.

Learning outcomes

Student has ability to: interpret mechanism of chemical reaction, recognize catalytic process, process the experimental data on stability using kinetic parameters, and characterize the stability and activity of catalysts.

Course content

Basic kinetics laws. Complex chemical reactions- reverse, consecutive, parallel. Determination of reaction order. Effect of temperature on rate of reaction. Transition state theory. Processing of experimental data. Application of kinetics. Homogenous and heterogeneous catalysis. Definition of simple and complex catalytic processes. Energetic diagrams and mechanisms of monomolecular, bimolecular and trimolecular processes. Enzymes and biocatalysts. Enzymes reactions catalysis. Metals as catalysts. Catalytic poisons.

Experimental part:

Exploring temperature, pH, catalysts effect on different chemical reactions

Teaching methods

Lectures, laboratory exercises, seminar work

Books and other learning materials

Vera Dondur, Hemijska kinetika, Fakultet za fizičku hemiju, Beograd, 1992.
K. Leidler, Chemical Kinetics, Harrper and Row, New York, 1987.
S.R.Logan, Fundamentals of Chemical Kinetics, Longman, 1996.

Course activities and grading method

Students have one laboratory exam and seminar paper. Oral exam.

Test	**20**		
Paper work	**20**	**Final exam**	**60**

Additional course notes

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Name of the teacher who prepared this form	Dijana Jelić