



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	Photochemistry			
Course code	Course status	Semester	Hours of instruction	ECTS
1C16HOS1116	elective	VII	2+2	5
Teacher(s)	Prof. Dijana Jelić PhD			

Prerequisite course(s)	Entry requirements
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Course goals
Student will through theoretical and experimental work get knowledge about chemical and related processes based on electron excitation in molecules, types of photochemical processes, mechanisms and kinetics, experimental methods which are used in photochemical research work, as well as in new age studies.

Learning outcomes
Student ability to: understand basic phenomena and laws of photochemistry, explain, relate and discuss about experimental data and make research work in photochemistry.

Course content
History, basic definition and concept. Photochemical source of light. Interaction between electromagnetic radiation and matter, photochemical activation. Photophysical non-radiation transitions, types of non-radiation transitions. Photophysical radiation transitions, types of fluorescence emission, phosphorescence. Factors that affect the radiation transitions. Quantum income. Intermolecular and intramolecular photophysical electron energy transfer, mechanisms, types of electron energy transfer. Experimental methods in photochemistry, sources of radiation, measuring of light intensity, determination of quantum income. Characteristic photochemical reactions. Photochemical aspects of sunlight accumulation: fluorescence of chlorophyll, part in photosynthesis, photosynthetic organisms, basic principles and characteristics.

Experimental part:

Synthesis of photocatalysts and their characterization

Teaching methods
Lectures (seminar work), laboratory exercises

Books and other learning materials
Marković J.D. Fotohemija, Grafopan, Beograd, 2015 Turro N.J., Scaiano J. C., Ramamurthy V., Principles of Molecular Photochemistry: An Introduction, Wiley 2008. Turro N.J., Scaiano J. C., Ramamurthy V., Modern Molecular Photochemistry of Organic Molecules, Wiley 2010. Wayne C.E., Wayne R.P., Photochemistry, Oxford University Press. New York, 1996.

Course activities and grading method
Students have one laboratory test, seminar work and 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	prof. dr Dijana Jelić
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