KAPITAŁ LUDZKI
NARODOWA STRATEGIA SPÓJNOŚCI

Projekt współfinansowany przez Unię Europejską w ramach Europejskiego Funduszu Społecznego

UNIA EUROPEJSKA
EUROPEJSKI FUNDUSZ SPOŁECZNY

Course title	ECTS code
Monographic lecture - Introduction into photochemistry	13.3.0401

Name of unit administrating study

Faculty of Chemistry

Studies

faculty	field of study		
Wydział Chemii	Chemia	type	drugiego stopnia
		form	stacjonarne
		specialty	chemia biomedyczna, chemia i technologia środowiska, analityka i diagnostyka chemiczna, chemia obliczeniowa
		specialization	wszystkie

Teaching staff

prof. dr hab. Janusz Rak; dr Lidia Chomicz-Mańka

Forms of classes, the realization and number of hours

Forms of classes

Lecture

The realization of activities

classroom instruction

Number of hours

Lecture: 30 hours

ECTS credits

3
classes 30 h
tutorial classes 10 h
student's own work 35 h.
TOTAL: 75 h - 3 ECTS

The academic cycle

2023/2024 winter semester

Type of course

obligatory

Language of instruction

polish

Teaching methods

multimedia-based lecture

Form and method of assessment and basic criteria for eveluation or examination requirements

Final evaluation

Graded credit

Assessment methods

- (mid-term / end-term) test
- oral course credit

The basic criteria for evaluation

Passing with no less than 51% of the maximum score. Students who do not reach the required threshold take an oral examination.

Method of verifying required learning outcomes

Required courses and introductory requirements

A. Formal requirements

spectrochemistry

B. Prerequisites

ability to describe chemical reaction in the context of thermodynamics and kinetics, knowledge on the basics of molecular spectroscopy.

Aims of education

Familiarization of students with basic concepts and laws of photochemistry; developing ability to describe photochemical processes and reactions and to judgement the possibility of their use in practice.

Course contents

Course contents
interactions between electromagnetic radiation and matter, basic terms and photochemistry laws, excited states of molecules, Jablonski diagram, the radiation and radiation-less deactivation processes of the excited state, solvent effects, radiation-less inter-molecular energy transfer, kinetics of

photochemical reactions, basic types of photochemical reactions, photochemistry of nucleic acids and proteins, process of vision, photosynthesis, equipment and methods in photochemical studies.

Bibliography of literature

Literature required to pass the course

S. Paszyc, „Podstawy fotochemii", PWN, Warszawa, 1981.
J. P. Simons, „Fotochemia i spektroskopia", PWN, Warszawa, 1976.
J. A. Barltrop, J. D. Coyle, „Fotochemia. Podstawy", PWN, Warszawa, 1987
P. Suppan, „Chemia i Światło", PWN, Warszawa, 1997.
B. Extracurricular readings

K. Pigoń, Z. Ruziewicz, „Chemia Fizyczna. Fizykochemia molekularna", PWN, Warszawa, 2005

The learning outcomes (for the field of study and specialization)

Knowledge

A student:
• has knowledge on concepts, rules and theories functioning in photochemistry,
• explains the radiation and radiation-less process of excited state deactivation,
• characterizes electron and energy transfer processes in the excited states,
• identifies basic photochemical reactions,
• mentions photochemical processes in proteins and nucleic acids.

Skills

Social competence

A student:
• can work independently,
• keeps caution and criticism in expressing opinions.

Contact

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