UNIWERSYTET GDAŃSKI

**Course title**
Wykład monograficzny - Wprowadzenie do fotochemii/ Monographic lecture - Introduction into photochemistry

**ECTS code**
13.3.0401

**Name of unit administrating study**
Faculty of Chemistry

**Studies**

| Field of study | Type | Form | |
|---|---|---|---|
| Chemistry | Master | Full-time studies | |

**Teaching staff**
Prof. dr hab. Janusz Rak

**Forms of classes, the realization and number of hours**

**A. Forms of classes, in accordance with the UG Rector's regulations**
lecture

**B. The realization of activities**
In-class learning

**Number of hours**
lecture 30 h

**ECTS credits**

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

**The academic cycle**
Second year, winter semester

**Type of course**
obligatory

**Language of instruction**
Polish

**Teaching methods**
Lecture with multimedial presentation

**Form and method of assessment and basic criteria for evaluation or examination requirements**

**A. Final evaluation, in accordance with the UG study regulations**
Course completion (with a grade)

**B. Assessment methods**
**written test**

**C. The basic criteria for evaluation** or exam requirements

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

**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**

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**

**A. 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

**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.

**Social competence**

A student:

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