KAPITAŁ LUDZKI
NARODOWA STRATEGIA SPÓJNOŚCI
Projekt współfinansowany przez Unię Europejską w ramach Europejskiego Funduszu Społecznego
UNIA EUROPEJSKA
EUROPEJSKI FUNDUSZ SPOŁECZNY

Course title

MSc laboratory course

ECTS code

13.3.1307

Name of unit administrating study

null

Studies

faculty	field of study		
Faculty of Chemistry	Chemistry	type	second tier studies (MA)
		form	full-time
		specialty	all
		specialization	all

Teaching staff

dr hab. Jolanta Kumirska, profesor uczelni

Forms of classes, the realization and number of hours

Forms of classes

Laboratory classes

The realization of activities

classroom instruction

Number of hours

Laboratory classes: 370 hours

ECTS credits

20
Classes 370 h
180 h in 3 semester
190 h in 4 semester
Tutorial classes 60 h
20 h in 3 semester
20 h in 4 semester
Student's own work 260 h
45 h in 3 semester
45 h in 4 semester
TOTAL: 500 h - 20 ECTS
245 h and 10 ECTS in 3 semester
255 h and 10 ECTS in 4 semester

The academic cycle

2023/2024 winter semester

Type of course

obligatory

Language of instruction

english

Teaching methods

Practical laboratory work – computational chemistry experiments and case studies, analysis of obtained results and discussion.

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

Final evaluation

Graded credit

Assessment methods

Realization of master project and presentation of the obtained results

The basic criteria for evaluation

an assessment of the quality of performed master's researches, including substantive preparation, independence in their realization, correctness of conducted researches (if performed), correctness of interpretation of the obtained results

Method of verifying required learning outcomes

The method of verifying the acquisition of knowledge: oral presentation and argumentation during the discussion, the student solves problems in writing (reports).
The method of verifying the acquisition of skills: the student solves problems in writing (reports) or oral (oral answer) in the related field of master thesis.
The method of verifying the acquisition of social competences:
observation of the student's behavior during classes and during consultations.

Required courses and introductory requirements

A. Formal requirements

Knowledge of general, inorganic, and organic chemistry, biochemistry, and mathematics at the first-cycle education. Knowledge of basic issues in the field of quantum chemistry, chemometrics and/or related scientific fields. Specific knowledge and skills in programming in Python and/or R.

B. Prerequisites

Knowledge of general, inorganic, and organic chemistry, biochemistry, and mathematics at the first-cycle education. Knowledge of basic issues in the field of quantum chemistry, chemometrics and/or related scientific fields. Specific knowledge and skills in programming in Python and/or R.

Aims of education

Planning and performance of experimental research project by each student working under the control /guidance of supervisor.
Presentation of obtained research results in the form of written master thesis

Course contents

The program content is varied and depends on the scope of the topic of the master thesis

Bibliography of literature

Literature required to pass the course

A.1. Literature used during classes:

Specialist literature in the scope of realized master thesis. The scope of literature is corrected and still adopted to conducted master research topics

A.2. Literature for individual studies:

Specialist literature in the scope of realized master thesis. The scope of literature is corrected and still adopted to conducted master research topics

Extracurricular readings

Specialist literature in the scope of realized master thesis. The scope of literature is corrected and still adopted to conducted master research topics

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

K_W02: has in-depth knowledge in the field of basic chemistry
K_W09: classifies specialist IT tools used in statistical evaluation of experiment results
K_W10: uses knowledge of the principles of operation of the scientific and research apparatus used in chemistry
K_W12: knows the principles of occupational health and safety to the extent that allows independent work on a research and/or measurement position
K_W13: demonstrates knowledge of legal and ethical conditions related to scientific and didactic work
K_W14: explains the basic concepts and principles in the field of industrial property and copyright protection and recalls knowledge about the management of intellectual property resources; is able to use patent information
K_U07: defines and implements the directions of own further education
K_U10: reads with understanding scientific and popular science chemical texts in English
K_K05:understands the need for independent search of information in scientific literature and popular science magazines

Knowledge

Student:
names and describes methods of analysis and/or methods of computer theoretical calculations used during realization of master project
distinguishes and characterizes individual experimental/ IT techniques used during realization of research project
identifies scientific and research apparatuses used during realization of research project and explains the principles of their operations.

Skills

Student:
performs scheduled experiments, makes observations
analyzes the obtained results and compares them with available literature data
draws conclusions from the conducted tests and proves their correctness in based on available literature data
presents the same content in a different language convention
systematically collects and prepares documentation of her/his research work.

Social competence

Student:
works independently
correctly defines priorities necessary for realization of her/his own aims
cares for safety during own-self realization of chemical experiments
takes into account the made arrangements for realization of experiments.

Contact

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