KAPITAŁ LUDZKI
NARODOWA STRATEGIA SPÓJNOŚCI

Projekt współfinansowany przez Unię Europejską w ramach Europejskiego Funduszu Społecznego

UNIA EUROPEJSKA
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FUNDUSZ SPOŁECZNY

Course title	ECTS code
Analysis of natural origin products	13.3.1160

Name of unit administrating study

null

Studies

faculty	field of study		
Wydział Chemii	Chemia	type	drugiego stopnia
		form	stacjonarne
		specialty	chemia biomedyczna
		specialization	wszystkie

Teaching staff

dr hab. Marek Gołębiowski, profesor uczelni; prof. dr hab. Piotr Stepnowski; dr hab. Jolanta Kumirska, profesor uczelni; prof. UG, dr hab. Monika Paszkiewicz; dr Alan Puckowski; dr hab. Łukasz Haliński; dr hab. Anna Białk-Bielińska, 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: 45 hours

ECTS credits

2
classes 45 h
tutorial classes 2 h
student's own work 3 h
TOTAL: 50 h - 2 ECTS

The academic cycle

2023/2024 winter semester

Type of course

obligatory

Language of instruction

polish

Teaching methods

conducting experiments

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

Final evaluation

Graded credit

Assessment methods

- (mid-term / end-term) test
- graded course credit based on individual grades obtained during the semester

The basic criteria for evaluation

The final grade will be a weighted average of grades of the final test covering laboratory issues (40%), partial tests (40%) and reports (20%).
Negative grade can be improved on the basis of an additional colloquium from the material covering the entire range of exercises (min 51% of points possible to obtain)

Method of verifying required learning outcomes

Required courses and introductory requirements

A. Formal requirements
General chemistry, Organic chemistry, Inorganic chemistry, Analytical chemistry

B. Prerequisites
Knowledge of basic issues in the field of chemistry, organic chemistry, inorganic chemistry and analytical chemistry

Aims of education

- familiarizing students with analytical techniques used to analyze compounds in natural products,
- acquiring the ability to independently perform the calculations necessary for the correct interpretation of the results of analyzes,
- developing the ability to independently select the appropriate analytical technique for a given purpose,

• obtaining practical skills related to the conduct in the chromatographic laboratory

Course contents

Extraction and determination of organic compound content in natural products. Qualitative and quantitative analysis using chromatographic and spectroscopic techniques such as gas chromatography, high performance liquid chromatography, thin layer chromatography, UV / Vis spectroscopy, mass spectrometry

Bibliography of literature

Literature required to pass the course
A.1. Literature used during classes
Stepnowski P., Synak E., Szafranek B., Kaczyński Z. Techniki separacyjne. Wydawnictwo UG 2010
Witkiewicz Z. Podstawy chromatografii, WNT, Warszawa, 2005.
Johnstone W. R. A., Rose M. E., Spektrometria mas, PWN, Warszawa 2001
Grajek W.(red.), Przeciwutleniacze w żywności. Aspekty zdrowotne, technologiczne, molekularne i analityczne. WNT, Warsza-wa, 2007,
A.2. Literature for individual studies
Stepnowski P., Synak E., Szafranek B., Kaczyński Z. Techniki separacyjne. Wydawnictwo UG 2010
Witkiewicz Z. Podstawy chromatografii, WNT, Warszawa, 2005.
R. M. Silverstein, F. X. Webster, D. J. Kiemle, Spektroskopowe metody identyfikacji związków organicznych, PWN, Warszawa 2007
Extracurricular readings
Kocjan R. Chemia analityczna. Podręcznik dla studentów. Tom 2. PZWL, Warszawa, 2000.
Szczepaniak W. Metody instrumentalne w analizie chemicznej, PWN, Warszawa, 1996.
Witkiewicz Z., Hepter J. Chromatografia gazowa, WNT, Warszawa, 2009.
Minczewski J., Marczenko Z., Chemia analityczna, tom III, PWN, W-wa, 1986
Kohlmunzer S. Farmakognozja. Wydawnictwo Lekarskie PZWL. Warszawa, 1993.
Kączkowski J. Biochemia roślin. Wydawnictwo Naukowe PWN. Warszawa, 1993
Sikorski Z. E.(red.), Chemia Żywności, wyd. 4, WNT, Warszawa, 2002.
Klepacka M. (red.), Analiza żywności, Fundacja Rozwój SGGW, Warszawa 2005.

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

Knowledge

1. knows and describes selected techniques and research tools used in the analysis of compounds in natural products
2. knows the structure and principle of operation of selected research equipment
3. knows and describes the methods of determining selected analytes
4. can present methods of quantitative and qualitative analysis,
5. draws conclusions from experimental data,

Skills

1. is able to prepare a report on the performed experiments in Polish,
2. can independently operate the scientific and research equipment,
3. can plan and perform experiments in the analytical laboratory and analyze their results,
4. knows the need to follow established analytical procedures,
5. is able to perform quantitative and qualitative analyzes,
6. uses professional terminology in the discussion on analytical and instrumental chemistry.

Social competence

1. demonstrates responsibility for the work performed,
2. shows creativity in the work of the group by taking various roles in it,
3. observes the arrangements made,
4. is cautious / critical in expressing opinions,
5. appreciates the importance of constructive discussions,
6. understands the need for further development and education.

Contact

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