COURSE DESCRIPTION CARD - SYLLABUS

Course name
Identification of organic compounds - active substances with potential pharmaceutical application [S1IFar1>IZOsaopzf]

Course

Field of study
Pharmaceutical Engineering

Year/Semester
2/4

Area of study (specialization)
–

Profile of study
general academic

Level of study
first-cycle

Course offered in
polish

Form of study
full-time

Requirements
elective

Number of hours

Lecture
0

Laboratory classes
30

Other (e.g. online)
0

Tutorials
0

Projects/seminars
0

Number of credit points

2,00

Coordinators

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Lecturers

Prerequisites

1. Basic knowledge of inorganic, organic, physical and analytical chemistry. 2. Experience in basic laboratory techniques in synthesis, isolation and purification chemical compounds. 3. Understanding the need for further training and increasing professional and personal competences.

Course objective

Understanding the need for further training and increasing professional and personal competences.

Course-related learning outcomes

Knowledge:
k_w7
1. student has knowledge of techniques and methods for the characterization and identification of chemicals, typical environmental pollution.
2. student is able to describe the methods, techniques, tools and materials used in solving simple problems related to the identification of the substance with which it may encounter realizing pharmaceutical engineering tasks.

Skills:
k_u8
1. student uses spectroscopic methods for basic qualitative and quantitative determinations organic compounds.
2. student is able to determine the suitability and choose tools (methods) to solve the problem with scope of pharmaceutical engineering.

Social competences:
k_k1
1. student understands the need to improve professional qualifications.
2. student is responsible for the tasks carried out in the team.

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

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Knowledge control during the laboratory classes (three tests with 3 open questions, each for 1 point). Reports from classes (submitted electronically, graded for pass or not, the necessity to obtain approval of correctness of all the reports in order to pass the course) and interpretation of the results (final colloquium during the last classes). The final course grade is a weighted average of test grades (weighted at 1 each) and colloquium grades (weighted at 7). Tests and colloquium will be written for onsite classes and for remote classes via the e-Kursy platform.

Programme content

The use of interactions between electromagnetic radiation and organic compound molecules and the possibility of use these phenomena to identify them. The scope of information provided allow for individual interpretation of spectra. Experimental technique is presented sufficiently to operate individually common equipment and contact with the operator of highly specialised equipment. Gaining the ability to perform the nalysis of specific organic compounds using spectroscopic methods (UV, IR, FTIR), including selection of method of sample preparation, individual operation of the equipment allowing to perform the analysis and interpret results.
Identification and characterization of active substances with potential pharmaceutical applications. The new information will relate to techniques for analyzing pharmaceuticals in pharmaceutical products. The possibilities and limitations of UV/VIS, IR analytical techniques in the analysis of active substances with potential pharmaceutical applications will be presented.

Teaching methods

Practical laboratory classes, work with didactic materials, multimedia presentations.

Bibliography

Basic
1. Spektroskopowe metody identyfikacji związków organicznych, R.M. Silverstein, F.X. Webster, D.J. Kremle, PWN, Warszawa, 2007
2. Metody spektroskopowe wyznaczania struktury związków organicznych, L.A. Kazicyna, N.B. Kupletska, PWN, Warszawa, 1974
3. Określanie struktury związków organicznych metodami spektroskopowymi, M. Szafran, Z. Dega-Szafran, PWN, Warszawa, 1988
4. Metody spektroskopowe i ich zastosowanie do identyfikacji związków organicznych, W. Zieliński, praca zbiorowa, WNT, Warszawa, 1995.
5. Spektroskopia mas związków organicznych, A. Płaziak, wyd. UAM, Poznań, 1997.

Additional
1. N.P.G. Roeges, A guide tot He complete interpretation of infrared spectra of organic structures, Wile, Chichester, 1994.
2. J.S. Splitter, F. Turecek, Application of mass spectrometry to organic stereochemistry, VCH, New York, 1994.

Breakdown of average student's workload

	Hours	ECTS
Total workload	48	2,00
Classes requiring direct contact with the teacher	30	1,00
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	18	1,00