COURSE DESCRIPTION CARD - SYLLABUS

Course name
Enzymes in pharmaceutical engineering [S1IFar1>EwIF]

Course

Field of study
Pharmaceutical Engineering

Year/Semester
2/3

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
0

Other (e.g. online)
0

Tutorials
15

Projects/seminars
0

Number of credit points

1,00

Coordinators

prof. dr hab. Violetta Krajka-Kuźniak

Lecturers

Prerequisites

Basic knowledge of biochemistry

Course objective

Understanding the specifics, mechanism of action and the possibilities of modification of enzymes - the basic pharmacological points of the drug handle

Course-related learning outcomes

Knowledge:
k_w5
has knowledge of physicochemical and biological foundations
health sciences to the extent appropriate for pharmaceutical engineering, with
basic issues within the scope of biochemistry
k_w24
has a basic knowledge of methods of searching for new substances
medicinal, plant and synthetic medicine and their biochemical and molecular form
target points
k_w25

has detailed knowledge of substances for pharmaceutical and cosmetic use,
dietary supplements, plant materials in relation to metabolism and metabolic changes occurring in the body and cell

Skills:
k_u9, k_u8
can use the basic equipment and apparatus used in engineering pharmaceutical, receives pharmaceutically active substances using synthetic and biotechnological methods, isolates active bodies from plant materials based on knowledge of basic operations physical and chemical as well as biochemical and molecular processes, develops the form of the drug, performs research in the field of character quality assessment drug, interprets and documents the results of product quality tests
k_u10
has the ability to conduct chemical, pharmaceutical and research toxicological pharmaceutical active substances and medicinal products
k_u24
has the ability to self-study

Social competences:
k_k1
is ready to critically assess knowledge, understands the need for further training complementing one"s own knowledge and raising one"s own professional, personal and social competences, understands the meaning knowledge in solving problems and is ready to consult experts

Methods for verifying learning outcomes and assessment criteria

Learning outcomes presented above are verified as follows:

Learning outcomes presented above are verified as follows:
The basis for passing the seminars is the student"s presence in class, participation in discussions related to the discussed issues and preparation of presentations in the scope of material designated for discussion

Programme content

1. Structure and properties of enzymatic proteins.
2. Design and acquisition of enzyme inhibitors.
3. Acquisition of therapeutic ribozymes and DNazyms.
4. Artificial enzymes and biomimetics - methods of obtaining and using in biomedical sciences. The use of enzymes in the assessment of biotransformation of potential drugs.
5. The use of enzymes in medical diagnostics.

Teaching methods

Seminars with multimedia presentation and combined with discussion.

Bibliography

Basic
Berg J.M., Tymoczko J.L., Stryer L. Biochemia WN PWN Warszawa ostatnie wydania
Murray R. i wsp. Biochemia Harpera PZWL Warszawa ostatnie wydania
Witwicki J, Ardelt W. Elementy Enzymologii PWN
Additional
Selected source materials

Breakdown of average student's workload

	Hours	ECTS
Total workload	30	1,00
Classes requiring direct contact with the teacher	15	0,50
Student's own work (literature studies, preparation for laboratory classes/ tutorials, preparation for tests/exam, project preparation)	15	0,50