



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Enzymology - Enzymes in Pharmaceutical Engineering

Course

Field of study

Pharmaceutical Engineering

Area of study (specialization)

-

Level of study

First-cycle studies

Form of study

full-time

Year/Semester

2/3

Profile of study

general academic

Course offered in

polish

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

Lecturers

Responsible for the course/lecturer:

dr hab. Violetta Krajka-Kuźniak

Responsible for the course/lecturer:

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:

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 DNazymes.
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	1,0
Classes requiring direct contact with the teacher	15	0,5
Student's own work (literature studies, preparation for tutorials, preparation of presentation) ¹	15	0,5

¹ delete or add other activities as appropriate