



COURSE DESCRIPTION CARD - SYLLABUS

Course name

Enzymes as reaction biocatalysts in biological systems [S1IFar1>EJBRwUB]

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:

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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

Structure and properties of enzymatic proteins.

Kinetics of enzymatic reactions.

Mechanisms of action of protein and non-protein enzymes.

Mechanisms regulating enzymatic activity.

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