

Course title: BIOPOLYMERS IN MEDICINE AND PHARMACY

ECTS credit allocation (and other scores): 1.5

Semester: winter

Level of study: ISCED-7 - second-cycle programmes (EQF-7)

Branch of science: Natural sciences

Language: English

Number of hours per semester: 20 h

Course coordinator/ Department and e-mail: Justyna Mozejko-Ciesielska, Department of Microbiology and Mycology, justyna.mozejko@uwm.edu.pl

Type of classes: classes

Substantive content

CLASSES: Division of biopolymers based on the type of contact with the human body; biomaterials as implants, prostheses and drug carriers; microorganisms involved in the synthesis of biopolymers for applications in medicine and pharmacy; microbial cultivations towards the synthesis of biopolymers; properties of biopolymers that determine their application in medicine and pharmacy.

LECTURES: not applicable

LEARNING PURPOSE: Acquiring skills in conducting a biotechnological process towards the microbial synthesis of biopolymers for applications in medicine and pharmacy.

On completion of the study programme the graduate will gain:

KNOWLEDGE: student knows and understands the potential of using biopolymers in medicine and pharmacy; student understands the relationship between microbial culture conditions and the biopolymer's productivity.

SKILLS: student is able to plan, describe and carry out the cultivation of microorganisms for the synthesis of biopolymers; student can estimate the possibilities of using bacteria and fungi grown on various sources of carbon, nitrogen and phosphorus for the effective synthesis of biopolymers for applications in medicine and pharmacy.

SOCIAL COMPETENCIES: student knows the purpose of lifelong learning of biopolymers in medicine and pharmacy; student knows to continuously expand his/her knowledge and critically evaluate his/her knowledge and skills.

Basic literature: 1) Sessini V., Ghosh S., Mosquera M.E.G., Biopolymers Synthesis, Properties, and Emerging Applications. Elsevier, 2023.

Supplementary literature: 1) Different authors, Original and review articles related to the field of biopolymers derived from microbial processes, Wyd. Scientific Journals from Journal Citation Report list (with Impact Factor), from 2023.

The allocated number of ECTS points consists of:

Contact hours with an academic teacher: 22 h.

Student's independent work: 15.5 h.