

Microbiology - opis przedmiotu

Informacje ogólne	
Nazwa przedmiotu	Microbiology
Kod przedmiotu	13.4-WB-P-MzEI-S14
Wydział	Wydział Nauk Biologicznych
Kierunek	WNB - oferta ERASMUS
Profil	-
Rodzaj studiów	Program Erasmus
Semestr rozpoczęcia	semestr zimowy 2018/2019

Informacje o przedmiocie	
Semestr	2
Liczba punktów ECTS do zdobycia	5
Typ przedmiotu	obowiązkowy
Język nauczania	polski
Sylabus opracował	- prof. dr hab. Michał Stosik - dr Justyna Mazurek-Popczyk

Formy zajęć					
Forma zajęć	Liczba godzin w semestrze (stacjonarne)	Liczba godzin w tygodniu (stacjonarne)	Liczba godzin w semestrze (niestacjonarne)	Liczba godzin w tygodniu (niestacjonarne)	Forma zaliczenia
Wykład	30	2	-	-	Egzamin
Laboratorium	45	3	-	-	Zaliczenie na ocenę

Cel przedmiotu

Acquire by the student the theoretical and practical knowledge, resulting in the student should describe: biological and physiological functions of bacteria and fungi; metabolic processes and their regulation in these organisms; possibilities of using biological potential of bacteria and fungi in biotechnology; biological properties and regulatory functions of viruses. As part of the laboratory classes students should know the basic principles of safe work in the biological laboratory, master the techniques of microbial breeding and principles of microbiological diagnostics.

Wymagania wstępne

Knowledge of basic biology / microbiology, chemistry, biochemistry at secondary level.

Zakres tematyczny

Lecture: Place of microorganisms in the world of living organisms. Structure and function of the bacterial cell. Phototrophic, chemolithotrophic, chemo-organotrophic bacteria. Metabolic processes of bacteria and mechanisms of their regulation. Bacteriophages, plasmids, transposons. Genetics of bacteria - variability and heredity. Bacteria in the biosphere. Mutual interaction of bacteria. Viruses and their biological properties. Fungi and their biological properties. Pathogenic microorganisms for plants, animals and humans.

Laboratory classes: Microscopic observations. Size and shape of microorganisms. Simple staining, complex staining (Gram stain)- structural elements of bacteria. Sterilization. Microbiological media. Culture techniques. Isolation of bacteria and getting pure cultures. Determining the number of bacteria. Impact of physical and chemical factors on bacteria. Diagnostic tests.

Metody kształcenia

- feeding method (lecture in the form of multimedia presentation),

- practical (laboratory exercises using classical and molecular techniques used in microbiological studies)

Efekty uczenia się i metody weryfikacji osiągania efektów uczenia się

Opis efektu	Symbole efektów	Metody weryfikacji	Forma zajęć
apply the principles of safe work in the laboratory; plans and conducts an experiment; He can use the researched techniques (biological material preparation, microscopic analysis); interprets and draws conclusions; He can use the acquired skills in the professional environment and in other environments		practical skills test	Laboratorium
knows and understands the basics of general microbiology in the field of bacteriology, virology and mycology		test końcowy	- Wykład - Laboratorium

Opis efektu	Symbole efektów	Metody weryfikacji	Forma zajęć
uses literature sources, also electronic ones, can interpret and combine information obtained in a coherent way, uses self-learning methods and sees the need to learn and improve your cognitive skills; is aware of dynamic changes in knowledge, takes care of updating it		• test końcowy • test	• Wykład • Laboratorium
explains the principles of using techniques used in microbiological research, has knowledge of the use of laboratory equipment in a microbiological laboratory		• practical skills test	• Laboratorium
works in a group and organizes work in a specific area		• practical skills test	• Laboratorium

Warunki zaliczenia

Lecture - final exam, which the student is admitted on the basis of the prior pass of the exercises

Exam: I term - written form, further deadlines – oral

Question: question I - 2 points, question II - 2 points, question III - 2 points

Exam time - 90 min.

Rating - satisfactory - 4 points, sufficient plus - 5 points, good - 6 points, good plus or very good - 6 points + originality of the answer given.

Laboratory exercises - a condition of credit is to obtain positive marks from all laboratory exercises, which are to be performed within the framework of the laboratory program.
Assessment: knowledge tests (closed and open) - positive score over 60% of points obtained and practical skills test. Final score is the arithmetic mean of the partial scores.

Literatura podstawowa

1. Gwendolyn R.W. Burton. Microbiology for Health Sciences.Wyd. Lippincott Williams & Wilkins, 2006.
2. Pearson New International Edition. Microbiology: A Laboratory Manual. N. Sherman James G. Cappuccino,. Parson Education, 2013.
3. Microbiological Applications, Harold J. Benson, Wyd. McGraw-Hill. 2013.

Literatura uzupełniająca

Uwagi

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Zmodyfikowane przez dr Justyna Mazurek-Popczyk (ostatnia modyfikacja: 14-05-2018 19:15)

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