

Microbiology - opis przedmiotu

Informacje ogólne	
Nazwa przedmiotu	Microbiology
Kod przedmiotu	13.4-WB-OS2P-Mikrob-S17
Wydział	Wydział Nauk Ścisłych i Przyrodniczych
Kierunek	Environmental Protection
Profil	ogólnoakademicki
Rodzaj studiów	pierwszego stopnia z tyt. licencjata
Semestr rozpoczęcia	semestr zimowy 2021/2022

Informacje o przedmiocie	
Semestr	4
Liczba punktów ECTS do zdobycia	5
Typ przedmiotu	obowiązkowy
Język nauczania	angielski
Sylabus opracował	<ul style="list-style-type: none">prof. dr hab. Michał Stosikdr Sylwia Andrzejczak-Grządko

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. Metabolic processes of bacteria and mechanisms of their regulation. Genetics of bacteria. Bacteria in the environment. Microbial associations with other microorganisms. 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. Gram stain. Complex staining - structural elements of bacteria. Decontamination. Microbiological growth media. Culturing techniques. Isolation of bacteria - pure cultures. Quantification and enumeration of bacteria. Testing sensitivity to antimicrobial substances. 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 osiągnięcia efektów uczenia się

Opis efektu	Symbolce efektów	Metody weryfikacji	Forma zajęć
knows and understands the basics of general microbiology in the field of bacteriology, virology and mycology	<ul style="list-style-type: none">K1A_W27	<ul style="list-style-type: none">test końcowy	<ul style="list-style-type: none">WykładLaboratorium
explains the principles of using techniques used in microbiological research, has knowledge of the use of laboratory equipment in a microbiological laboratory	<ul style="list-style-type: none">K1A_W28	<ul style="list-style-type: none">test	<ul style="list-style-type: none">Laboratorium
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	<ul style="list-style-type: none">K1A_U07	<ul style="list-style-type: none">test	<ul style="list-style-type: none">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	• K1A_U08	• test • test końcowy	• Wykład • Laboratorium
works in a group and organizes work in a specific area	• K1A_K01	• test	• Laboratorium

Warunki zaliczenia

Lecture - final exam, which the student is admitted on the basis of the prior pass of the laboratory classes. Exam: I term - written form - 50 question test, further deadlines – oral. Exam time - 90 min. Rating - satisfactory - over 60% of all points.

Laboratory - 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. Basic Practical Microbiology. Society for General Microbiology 2006
2. Essential Microbiology. S. Hogg. John Wiley & Sons Ltd. 2005
3. Medical microbiology. P. Murray, K. Rosenthal, M. Pfaller. Elsevier. 2016
4. Textbook of microbiology. C.K.J. Paniker. Orient Longman. 2005
5. Laboratory Manual and Workbook in Microbiology. J. A. Morello, P. A. Granato, H. E. Mizer. The McGraw-Hill Companies, 2003

Literatura uzupełniająca

1. Microbiology. M. Sattley, M.T. Madigan. John Wiley & Sons, Ltd. 2015

Uwagi

Zmodyfikowane przez dr Olaf Ciebiera (ostatnia modyfikacja: 19-05-2021 22:02)

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