

**Аннотации рабочих программ дисциплин (модулей) учебного плана по специальности**

**06.05.01 Биоинженерия и биоинформатика**

**СПЕЦИАЛЬНЫЕ ДИСЦИПЛИНЫ ОТРАСЛИ НАУКИ И НАУЧНОЙ СПЕЦИАЛЬНОСТИ**

**Аннотация рабочей программы дисциплины  
Microbiology**

<b>Объём дисциплины (модуля)</b>	54
<b>Объём учебных занятий студентов</b>	54
<i>Лекции</i>	18
<i>Практики</i>	-
<i>Семинары</i>	-
<i>Лабораторные работы</i>	-
<i>Практические занятия</i>	36
<b>Цель освоения дисциплины</b>	<p>Formation of students' knowledge of the theoretical foundations of general microbiology. Gaining knowledge about microbial ecology and the role of microorganisms in biosphere, as well as on the application of microorganisms in biotechnology.</p> <p>The aim of practical training in the discipline is the formation of skills of the working in a microbiological laboratory, familiarization of students with the basic methods of microbiological researches, as well as development of skills in microbial genome annotation.</p>
<b>Место дисциплины в структуре основной профессиональной образовательной программы послевузовского профессионального образования (аспирантура)</b>	<p>Б1.Б.23 "Microbiology" is a compulsory discipline of professional education in the specialty "Bioengineering and Bioinformatics". Б1.Б.23 "Microbiology" discipline is interconnected with other disciplines of the education curriculum, as it creates a foundation for learning of disciplines such as immunology, virology, genetic engineering, and microbial bioengineering.</p>
<b>Знания, умения, навыки, получаемые в результате освоения дисциплины</b>	<p>By the end of the course, the students:</p> <ul style="list-style-type: none"><li>- must have acquired a sufficient knowledge on the fundamentals of general microbiology;</li><li>- will be able to use educational and reference literature, have the skills of working in a microbiological laboratory, perform basic manipulations for the cultivation and microscopy of bacterial cultures;</li><li>- will have an understanding about the role of microorganisms in biosphere and their application in biotechnology, as well as contribution of bioinformatics to the microbiology;</li></ul>

	- will possess the necessary skills to use Internet resources to search for the genetic basis of antibiotic resistance and virulence in microbial genomes.
<b>Содержание дисциплины</b>	<p>The course includes lectures, after which students will gain knowledge about the subject and tasks of modern microbiology, structure and function of cells in bacteria, archaea, and eukaryotic microorganisms. Students will be introduced to the principles of modern classification of microorganisms based on polyphasic taxonomy. The course will highlight the role of microorganisms in the biosphere, as well as their application in biotechnology. Within the framework of the discipline, the basics of medical microbial ecology, immunity and its types will be outlined. Students will gain knowledge about the important role of bioinformatics in the microbiology.</p> <p>Practical classes in the discipline will form the skills of working in a microbiological laboratory, introduce the main methods of cultivation and testing in microbiological research, as well as examples of functional annotation of microbial genomes.</p>
<b>Виды учебной работы</b>	Lectures, practical classes, independent work.
<b>Формы текущего контроля успеваемости аспирантов</b>	Oral questioning
<b>Форма итоговой аттестации</b>	Credits