

## **Biology and Systematics of Certain Prokaryotic Groups**

1. Lecturer: Vinnikova Olha Ivanivna, associate professor of the department of plant and microorganism physiology and biochemistry.
2. Status: optional for masters.
3. Course, semester: 2th academic year, 3th semester.
4. Number of credits – 4, general academic hours – 120, lectures – 36; seminars – 18; labs and practices – 18; self-study – 48.
5. Preliminary requirements: basics of Biochemistry, Microbiology, Genetics, Biotechnology, Molecular Biology, Plant Physiology and Biochemistry
6. Description of the course: the course "Biology and systematics of certain groups of bacteria" is integrative. The course deals with the place of bacteria archaea in the biological system, the history of the discovery of microorganisms and their first attempts to systematize, the concept of phylum and domains and phylogenetic tree. The course presents the basic concept of taxonomic categories of prokaryotic organisms and the principles of their systematics. Typical representatives of prokaryotic phyla are described in details according to the modern manuals of determinative microbiology and benefits of prokaryote taxonomy.

Sections: 1) Systematics and taxonomy of bacteria; 2) Systematics of archaea.

### Knowledge and skills:

- Knowledge of principles of microorganism classification;
  - Knowledge of the general characteristics of prokaryotic phyla;
  - Understanding of the biology of pathogens, pathogenic and non-pathogenic prokaryotes;
  - Ability to apply theoretical knowledge on taxonomy of prokaryotes to identify microbiological objects.
7. Course organization: lectures, seminars, labs Forms of control: tests, lab protocols, reports, exam.
  8. Language: Ukrainian.
  9. Educational and methodological support: program, schedule of classes, educational and multimedia presentations, methodical complex, guidelines for practice.

### Studentbooks:

1. *Bergey's manual of systematic bacteriology*: 2<sup>nd</sup> edition. Vol 1 ,2A, 2B, 2C, 3, 4, 5. – Springer, 2001-2012.
2. *Определитель бактерий Берджи* (Под ред. Заварзина Г.А.). – М. Мир, 1997. – т. 1. – 430 с., т. 2. – 800 с.
3. *Пуневич А.В.* Микробиология. Биология прокариотов: Учебник. В 3 т. Т. 1. – СПб.: Изд-во С.-Петербур. Ун-та, 2007. – 352 с.
4. *Лысак В.В.* Конспект лекций по спецкурсу «Важнейшие группы прокариотических организмов». – Минск: БГУ, 2007. – 138 с.
1. <http://www.bacterio.net/> - список законних назв бактерій та їх номенклатура
2. <http://www.ncbi.nlm.nih.gov/books/NBK8817/> - кодекс номенклатури бактерій
3. <https://microbewiki.kenyon.edu/index.php/MicrobeWiki> - пошук таксономічних груп прокариот та їх короткої характеристики
4. <http://ijs.microbiologyresearch.org/content/journal/ijsem> - міжнародний журнал з систематики та еволюції бактерій
5. <http://www.hindawi.com/journals/archaea/> - міжнародний журнал з систематики та біології архей