

Course: Microbiology

Lectures: The emergence and development of microbiology. Structure of a prokaryotic cell. Morphological and ecological characteristics of various groups of microorganisms (mainly viruses, bacteria, actinomycetes and moulds). Metabolism of microorganisms (aerobic and anaerobic, metabolism of phototrophs and chemolithotrophs). The role of enzymes in metabolic processes. Participation and role of microorganisms in fermentation processes (e.g. alcoholic, lactic and butter fermentation). Methane fermentation and the role of archaeobacteria. Growth and reproduction of microorganisms. Occurrence and role of microorganisms in various environments. The participation of microorganisms in the circulation of elements. Influence of environmental factors on microorganisms in soil, water and sewage. Mutual interaction of microorganisms. The use of microorganisms in industry and environmental engineering.

Laboratory: Getting to know the basic principles and techniques of work as well as equipment used in a microbiological laboratory. Microscopic analysis of bacteria, actinomycetes and moulds. Breeding methods used in microbiology. Examination of the size, shape and arrangement of bacteria cells. Gram's method. Number of microorganisms in water, soil and air. Sanitary analysis. Soil and air microbiological analysis.

Responsible person: Katarzyna Łuszczynska, PhD Eng.

More info:

<https://webapps.uz.zgora.pl/syl/index.php?/course/showCourseDetails/1221773>