Level: master

Course title: Bioinformatics (IB-512)

Status: elective

ECTS: 6

Requirements: none

Learning objectives

To enable students to work with sequences and structures of proteins, DNA and RNA. Developing practical skills for using selected bioinformatics software and independent use of appropriate Internet services.

Learning outcomes

Upon successful completion of this course, the student is able to search databases of nucleic and protein sequences on the Internet; to use the selected bioinformatics software for prediction and presentation of the secondary and tertiary structure of proteins and nucleic acids.

Syllabus

Theoretical instruction

Nucleotide and protein sequence databases. Working with a single nucleotide sequence. Working with a single protein sequences. Similarity searches on sequence databases. Methods for comparing two sequences. The construction of multiple protein and nucleic sequences. Working with 3D protein and RNA structures. Prediction and visualization of the secondary and tertiary protein structures. Prediction of 3D RNA structures.

Practical instruction

Practical application of "Open-Source" bioinformatics software and using the relevant Internet services.

Weekly teaching load				Other:
Lectures: 2	Exercises: 2	Other forms of teaching: 1	Student research:	