

General Information			
Course name and code	Bioinformatics UBEV/BI/14	ECTS Credits	5
		Semester	2nd (Summer) Master & Doctoral Degree
Aims			
<p>Grasp of specialized bioinformatic knowledge in the field of genetics of the selected organisms. Gain experiences in working with the various databases and data processing of various types.</p>			
Contents			
<p>Introduction to the basic and advanced bioinformatic tools in the field of genetics. Work with the databases dedicated for the students specialized in biological disciplines. Basics of Linux operating system, command line approaches. Computational tools in the analysis of the PCR reaction dependent methods. Possibilities of sequencing and genotyping. Study of individual sequences of DNA, RNA and proteins. Presentation of biological data originating from the different "Omics" areas. Cloud analysis and NGS data. RNAseq data testing, assembly, contigs mapping, analysis of different expression levels of genes.</p>			
Evaluation			
<p>Active participation on seminars, accomplishment of bioinformatic tasks, oral examination.</p>			
Bibliography			
<p>Zvelebil, Baum: Understanding Bioinformatics. Taylor & Francis 2008. Neil C. Jones, Pavel A. Pevzner: An Introduction to Bioinformatics Algorithms, ISBN: 0262101068, MIT Press, 2004. Andreas D. Baxevanis, B. F. Francis Ouellette: Bioinformatics: A Practical Guide to the Analysis of Genes and Proteins, ISBN: 0-471-47878-4, Wiley-Interscience, 2005.</p>			