

Study programmes: PhD studies - Informatics				
Course name: R476 - Data mining in bioinformatics - Advanced topics				
Lecturers: Nenad Mitić and other lecturers at Department of computer Science				
Status: Optional				
ECTS: 9				
Attendance prerequisites: -				
Course aims: Mastering of advanced topics and techniques of data mining that are applied in various fields of Bioinformatics.				
Course outcome: After completion of the course, the student is able to perform bioinformatics data analysis using complex data mining methods.				
Course content: Introduction to advanced data mining methods in bioinformatics. Advanced techniques of pattern and motif discovery. Biological data networks (genes, proteins, metabolic and phylogenetic), their interactions and characteristics analysis. Advanced statistical methods for data mining in bioinformatics.				
Literature:				
1. Laxmi Parida: Pattern Discovery in Bioinformatics: Theory & Algorithms, Chapman & Hall/CRC, 2008.				
2. Bjorn H. Junker and Falk Schreiber: Analysis of biological networks, John Wiley & Sons, 2008.				
(The lecturer can choose another relevant current literature)				
Number of hours: 10	Lectures: 4	Tutorials: -	Laboratory: -	Research: 6
Teaching and learning methods: Frontal lectures, group and individual tutorials and exercises.				
Assessment (maximal 100 points)				
Course assignments	points	Final exam	points	
Lectures	-	Written exam	-	
Exercises / Tutorials	-	Oral exam	-	
Colloquia	-	Written-oral exam	40	
Essay / Project	60			