Study programmes: Master studies - Informatics

Course name: R376 - Data mining in bioinformatics

Lecturers: Nenad Mitić and other lecturers at Department of computer Science

Status: Optional

ECTS: 8

Attendance prerequisites: -

Course aims: Mastering of data mining methods and techiques of data mining that are applied in Bioinformatics.

Course outcome: After completion of the course, the students is able to use data mining methods in analysis of various bioinformatics data (genomic, proteomic or microarray).

Course content: Introduction to data mining methods in bioinfortmatics. Overview of various bioinformatic analyses from data mining point of view. Data clensing and integration (of bioinformatic data). Strings, patterns, their allignemnt and searching. Data mining in genomic and proteomic. Microarrays and analysis of their contents. Visulaization of results.

Literature:

1. Jason T.L. Wang, Mohammed J. Zaki, Hannu T.T. Toivonen and Dennis Shasha: Data mining in bioinformatics, Springer 2005.

2. Darius M. Dziuda: Data Mining for Genomics and Proteomics - Analysis of Gene and Protein Expression Data, John Wiley & Sons, 2010.

(The lecturer can choose another relevant current literature)

Number of hours: 7	**Lectures: 2**	**Tutorials: 3**	**Laboratory: -**	**Research: 2**

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	20	Written-oral exam	40
Essay / Project	40		