

<b>Study programmes:</b> PhD studies - Informatics			
<b>Course name:</b> R415 - Text Algorithms - Advanced Concepts			
<b>Lecturers:</b> Miodrag Živković and other teachers of the Department of Computing and Informatics			
<b>Status:</b> Electoral			
<b>ECTS:</b> 9			
<b>Attendance prerequisites:</b> There are no prerequisites			
<b>Course aims:</b> The aim of the course is to introduce the student into an area that is the basis for understanding important contemporary research areas, such as natural language processing or bioinformatics. In the course, the student realizes the theory of text algorithms, the aspects of their implementation and application.			
<b>Course outcome:</b> The student understands the research area, basic problems and research methods.			
<b>Course content:</b> Exact search - basic pre-analysis and algorithms; classification of algorithms based on comparison; a deeper overview of classic methods; arithmetic search method. Suffix trees and applications - introduction; linear complexity algorithms for the construction of a suffix tree; important applications; finding the lowest common ancestor for constant time and application. Approximate search, array alignment, dynamic programming - basic algorithms, advanced algorithms. Suffix arrays and applications.			
<b>Literature:</b> D. Gusfield: Algorithms on Strings, Trees and Sequences, Cambridge University Press, 1997. (the teacher can choose another relevant current literature)			
<b>Number of hours: 10</b>	<b>Lectures: 4</b>	<b>Tutorials: -</b>	<b>Laboratory: -</b>
<b>Research: 6</b>			
<b>Teaching and learning methods:</b> Frontal, group, individual and practical.			
<b>Assessment (maximal 100 points)</b>			
<b>Course assignments</b>	<b>points</b>	<b>Final exam</b>	<b>points</b>
Lectures	-	Written exam	70
Exercises / Tutorials	-	Oral exam	-
Colloquia	-	Written-oral exam	-
Essay / Project	30		