

<b>Course title: Didactical research in mathematics</b>			
<b>Lecturers: Dragoslav Herceg, Đurđica Takači</b>			
Status: elective			
ECTS: 15			
<b>Requirements:</b>			
<b>Learning objectives:</b> Introduction to the basics of teaching methods in discrete mathematics			
<b>Learning outcomes: Didactic-methodical research in mathematics</b>			
<b>Syllabus</b>			
<i>Theoretical study</i>			
The concept of basic education in the field of mathematics. The system of mathematical knowledge. The structure of knowledge in mathematics. Invariant core of the structure of knowledge in mathematics. The variable part of the structure of knowledge in mathematics and factors that determine it. Standardization of knowledge in mathematics. Sources of learning in mathematics. Problem-based learning in mathematics. The role of teachers in problem solving in mathematics. Designing a problem situation in mathematics education. Targeted planned solving of problem situations in teaching mathematics. Knowledge of mathematics in solving complex problem situations. Communication in mathematics. Strategy to acquire and apply knowledge in mathematics: objectification, identification, classification and systematization, accumulation, structuring, anticipation, decision making and argumantacija optimization.			
<b>Suggested literature:</b>			
1) Derek Holton, The Teaching and Learning of Mathematics at University Level: An Icmi Study Springer, 2001			
2) William Flannery , Calculus Without Tears: Lesson Sheets for Learning Calculus for Students from the 4th Grade Up Publisher: Berkeley Science Books 2002			
3) Benchara Branford <i>A Study of Mathematical Education including the Teaching</i> Oxford, The Clarendon Press 2000			
Weekly teaching load	Lectures: 5	Student research: 5	
<b>Teaching methods</b>			
Lectures, solving tasks with and without the use of computers. Laboratory classes and tests in PC lab.			
<b>Grading (maximal number of points 100)</b>			
<b>Pre-exam requirements</b>	points	<b>Final exam</b>	points
Activities during lectures	<b>4</b>	Oral exam	<b>40</b>
Practical teaching	<b>4</b>		
Colloquia	<b>52</b>		
Seminar papers			