

<b>Study programmes:</b> Master studies – Mathematics				
<b>Course name:</b> Finite Element Method				
<b>Lecturers:</b> Milan Dražić, Aleksandra Delić, Sandra Živanović				
<b>Status:</b> Optional				
<b>ECTS:</b> 8				
<b>Attendance prerequisites:</b> Numerical analysis 2A and 2B				
<b>Course aims:</b> Introduction to the finite element method and training for creative work.				
<b>Course outcome:</b> After completing this course, the student has fundamental knowledge about the finite element method. He is able to independently solve real problems using appropriate software.				
<b>Course content:</b> Variational formulation of boundary value problems. The Ritz-Galerkin method, the collocation method and the least square method. Finite elements in one and two dimensions. Higher order finite elements. Hierarchical finite elements. Isoparametric elements. Error analysis in different norms. The effect of numerical integration in finite element methods. Computer algorithms and software packages.				
<b>Literature:</b> Morton K.W., <i>Basic Course in Finite Element Methods</i> , Oxford University Computing Laboratory, 1986. Strang G., Fix G., <i>An Analysis of the Finite Element Method</i> , Prentice-Hall, 1973.				
<b>Number of hours:</b> 5	<b>Lectures:</b> 3	<b>Tutorials:</b> 2	<b>Laboratory:</b> -	<b>Research:</b> -
<b>Teaching and learning methods:</b> Frontal and individual				
<b>Assessment (maximal 100 points)</b>				
<b>Course assignments</b>	<b>points</b>	<b>Final exam</b>	<b>points</b>	
Lectures	-	Written exam	30	
Exercises / Tutorials	-	Oral exam	40	
Colloquia	-	Written-oral exam	-	
Essay / Project	30			