

<b>Study programmes:</b> BACHELOR STUDIES - Mathematics			
<b>Course name:</b> Distributions and Partial Differential Equations B			
<b>Lecturers:</b> Miodrag Mateljević			
<b>Status:</b> Compulsory			
<b>ECTS:</b> 5			
<b>Attendance prerequisites:</b> No prerequisites.			
<b>Course aims:</b> Acquiring general and specific knowledge about partial differential and integral equations.			
<b>Course outcome:</b> Upon completion of the course, the student has a basic knowledge about partial and integral equations and their solving. He knows the basic results of the theory of distributions and the Sobolev space, understands the concept of a generalized solution.			
<b>Course content:</b> Classification of integral equations. Iterated kernel and a resolution. Integral equations with a degenerate kernel. Fredholm's alternative. Fredholm's formula. Hilbert-Schmitt's theory. Integral equations of the first type.			
<p>Test functions. Definition and basic properties of distributions. Regular and singular distribution. Differentiating distributions. Primitive distribution. Direct product and convolution distribution.</p> <p>Sobolev spaces. Extension function. Trace operator. Equivalent norms in <math>H^1(\Omega)</math>. Embedding theorems.</p> <p>Classical and generalized solutions of boundary problems. The existence and uniqueness of the generalized solution in the simplest case. A generalized problem of eigenvalues. Existence of a generalized solution.</p>			
<b>Literature:</b>			
<ol style="list-style-type: none"> <li>1. B. Jovanović, Parcijalne i integralne jednačine, Zavod za udžbenike Beograd, 2010.</li> <li>2. L. C. Evans, Partial Differential Equations (second edition), 2010.</li> </ol>			
<b>Number of hours:</b> 4	<b>Lectures:</b> 2	<b>Tutorials:</b> 2	<b>Laboratory:</b> -
<b>Research:</b> -			
<b>Teaching and learning methods:</b> Frontal / Tutorial			
<b>Assessment (maximal 100 points)</b>			
<b>Course assignments</b>	<b>points</b>	<b>Final exam</b>	<b>points</b>
Lectures	-	Written exam	40
Exercises / Tutorials	-	Oral exam	30
Colloquia	30	Written-oral exam	-
Essay / Project	-		