

Study programmes: BACHELOR STUDIES - Mathematics			
Course name: Distributions and Partial Differential Equations A			
Lecturers: Miodrag Mateljević, Miloš Arsenović, Miljan Knežević, Đorđe Krtinić			
Status: Compulsory			
ECTS: 5			
Attendance prerequisites: No prerequisites.			
Course aims: Acquiring general and specific knowledge about partial differential equations			
Course outcome: Upon completion of the course, the student has basic knowledge about partial differential equations and their solving. He understands basic boundary problems and the concept of solutions. He is able to use partial equations as models of physical processes.			
Course content: Classification of PDE of second order. Canonic forms. Types of solution of PDE. Basic equations of mathematical physics and corresponding contour problems. Green formula. The boundary problem for ordinary differential equations of second order. Sturm-Liouville problem. Laplace's equation in the plane - the Dirichlet and Neumann problem. Fourier's method for Laplace's equation in the plane. Problem of eigenvalues for Laplace operator. Laplace's equation in three dimensional space. Basic properties of harmonic functions. Goursat (Darboux) problem. The general Cauchy problem for a hyperbolic equation in the plane (Riemann method). The Cauchy problem for the equation of the wave equation. A mixed problem for the wave equation. The Cauchy problem for the heat equation. A mixed problem for the heat equation.			
Literature:			
1. J. Knežević-Miljanović, S. Janković, J. Manojlović, V. Jovanović, <i>Parcijalne diferencijalne jednačine (teorija i zadaci)</i> , Univerzitet u Beogradu 2000.			
Number of hours: 4	Lectures: 2	Tutorials: 2	Laboratory: -
Research: -			
Teaching and learning methods: Frontal / Tutorial			
Assessment (maximal 100 points)			
Course assignments	points	Final exam	points
Lectures	-	Written exam	40
Exercises / Tutorials	-	Oral exam	30
Colloquia	30	Written-oral exam	-
Essay / Project	-		