Study programme(s): Mathematics (MD)

Level: PhD studies

Course title: Spaces of functions (AN-10)

Lecturer: Jelena O. Aleksić

Status: elective

ECTS: 10

Requirements:

Learning objectives

Introduction to spaces of classical and generalized functions.

Learning outcomes

Full understanding of fundamental spaces of functions and their applications.

Syllabus

Measures. Hausdorff measure. Regularization. Sobolev spaces. Pointwise behavior of Sobolev functions. Poincare estimates. Functions of bounded variation. Hoelder spaces. Spaces of generalized functions. Schwartz spaces of tempered distributions, distributions with compact support. Integral transforms in distribution spaces.

Literature

1. R. Adams. *Sobolev Spaces*. Academic Press, 1975.
2. L.C: Evans, R.F. Gariepy., *Measure Theory and Fine Properties of Functions*. CRC Press, 1992.
3. S. Pilipović, B. Stanković,. *Teorija distribucija* (II izdanje). Novi Sad, 2004.

Weekly teaching load				Other: 0
Lectures: 2	Exercises 0	Other forms of teaching: 0	Student research: 6	

Teaching methodology

Plenary lectures, problem sessions, independent presentations carried out by students.

Grading method (maximal number of points 100)

Pre-exam obligations	**points**	**Final exam**	**points**
Colloquia	50	Oral exam	50