Mathematical Institute
Polish Academy of Sciences

COURSE DESCRIPTION

Course Name	Seminar on Approximation Theory
Course type	reserach seminar (sd)
Supervisor	Anna Kamont
ECTS credit allocation	1 – IM PAN Ph. D. program; ; 3 recommended for MA programs
Duration	One semester
Number of hours	30
Language	English or Polish if every participant speaks Polish
Prerequisites	Mathematical analysis, functional analysis, probability theory, as required for Master's degree in mathematics
Course content	During the seminar, we discuss various topics from approximation theory, functional analysis, probability theory and mathematical statistics. We discuss results of participants and papers by other authors. There are also series of lectures on selected topic. The main topics discussed on the seminar are the following: bases in function spaces and their properties, wavelets, frames, splines, linear and non-linear methods of approximation, applications of techniques from approximation theory to mathematical statistics. The current programm of the seminar can be found on http://www.impan.pl/Sem/S/127.html.
Recommended reading	The list of lectures is updated each semester, including current papers and preprints. The list below includes seleted monographs on the subject. G.G. Lorentz, R.A. Devore, Constructive Approximation, Springer -Verlag 1993. E.Hernandez, G.Weiss, First Course on Wavelets, CRC Press, 1996. H. Triebel, Interpolation Theory, Function Spaces and Differential Operators, North-Holland Publishing Co, 1978. P.Wojtaszczyk, Banach Spaces for Analysts. Cambridge University Press 1991
Learning outcomes	

	1. The knowledge of selected topics in approximation theory, as presented during the seminar.
	2. The ability to present selected topics and to search independently for related references.
	3. The ability to formulate partial questions and to seek their solutions.
	4. The ability to collaborate with other participants and to discuss with them the topics presented during the seminar.
Assessment methods and criteria	Based on presented talks and other activities on a seminar
Remarks	