Study programme(s): Mathematics (MD)	
Level: PhD	
Course title: Wavelets and Gabor analysis 2	
Lecturer: Nenad M. Teofanov, Stevan R. Pilipovic	
Status: optional	
ECTS: 10	
Requirements: none	

Learning objectives

Understanding of basic results in frame theory, time-frequency analysis and their applications.

Learning outcomes

 It is expected that a student meets and learns basic properties and examples of frames and analysis of spaces of functions through frames.

It is desirable that a student adopts the knowledge of basic theorems and their proofs and understands corresponding applications in signal analysis and synthesis.

Syllabus

Системи оквира, малоталасни и Габорови оквири. Оператор оквира.Габорова трансформација, анализа и синтеза з просторима функција.

Frame systems, wavelet and Gabor frames. Frame operator. Gabor transform, analysis and synthesis in spaces of functions.

Literature

 1. Gröchenig, K. *Foundations of time-frequency analysis.* Birkhäuser Boston, 2001.
 2. Y. Meyer, *Wavelets and Operators*, Cambridge University Press, 1992.
 3. I Daubechies, *Ten Lectures on Wavelets.* SIAM, 1992.

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

Teaching methodology

Exposition of theoretical basics with comments.
Applications of theory through various examples of applications.

Grading method (maximal number of points 100)			
Pre-exam obligations	**points**	**Final exam**	**points**
Colloquia	60	Oral exam	40