Program	Level	Second cycle
	Name of the program	Pure Mathematics, Applied Mathematics

COURSE

Course title	**Functional Analysis**			
Course code	Semester	Course status	ECTS	Contact hours (L+AE+LE)
PMAT 470	II	Mandatory course	8	3+2+0
Lecturer				
Course Goals	Applications of general concepts of fuctional analysis to establish conditions of existence and unicity of solutions of classical partial differential equations.			
Learning Outcomes	The ability to determine facts relating - The theory of proper functions of operators and orthonormal families in Hilbert spaces - Orthogonality structures on Hilbert spaces and existence of solutions of partial differential equations. - Differential operators and spectar theory.			

COURSE CONTENT

- Compact operators
- Adjoint operator and Fredholm theory
- Proper functions
- Dirichlet problem

LITERATURE

[1]   S. Fučik, J. Nečas, J. Součak, V. Souček: Spectral Analysis of Nonlinear Operators, Springer, 1973
[2]   Abdul Hassan Siddiqi: Applied Functional Analysis, CRC, 2004
[3]   Walter Rudin, Functional Analysis, 2nd Edition, McGraw Hill, 1991.

STUDENT WORKLOAD (hours in a semester)

Lectures	45	Exercises	30	Individual work	125	T o t a l	200

GRADING			REMARKS	
Criterion	Maximum points	Minimum points		
Midterm exams	60	30		
Final exam	40	25		
T o t a l	100	55		