

Program	Level		Third cycle			
	Name of the program		SEE Doctoral Studies in Mathematical Science			
<b>COURSE</b>						
Course title	<b>Finite Fields and Their Applications</b>					
Course code	Semester	Course status	ECTS	Contact hours (L+AE+LE)		
PMAT 615	I	<b>Elective course</b>	10	30		
Lecturer						
Course Goals	The goal is to introduce the students to the theory of the finite fields and their applications in theory of cryptology, etc., so that the student is able to apply this area in practice and to be able to carry out further research in this field.					
<b>COURSE CONTENT</b>						
<ul style="list-style-type: none"> <li>• Finite field structure</li> <li>• Polynomials over finite fields</li> <li>• Equations over finite fields</li> <li>• Polynomial factorization</li> <li>• Exponential sums</li> <li>• Permutation polynomials</li> <li>• Linear recurrent strings</li> <li>• Applied in combinatorics, coding theory and pseudo-random numbers.</li> </ul>						
<b>LITERATURE</b>			<b>GRADING</b>			
[1] Lidl, Niederreiter, Finite Fields and Their Applications, Encyclopedia of mathematics, Vol 20 [2] Finite Fields, D. Jungnickel, Wissenschaftsverlag, 1993 [3.] Handbook of Finite Fields, Gary L. Mullen, Daniel Panario, Chapman and Hall/CRC, 2013.			Criterion		Maximum points	Minimum points
			1.	Assignments	30	17
			2.	Projects	20	13
			3.	Final exam	50	25
			Total		100	55