



**MATHEMATICS PhD Program (on MSc)**

<b>REMEDIAL COURSES</b>				
<b>Dept.</b>	<b>Code</b>	<b>Course Name</b>	<b>CR.</b>	<b>ECTS</b>
MATH	132	Calculus II	NC	
MATH	231	Linear Algebra I	NC	
MATH	232	Linear Algebra II	NC	
MATH	245	Ordinary Differential Equations	NC	
MATH	246	Advanced Ordinary Differential Equations	NC	
MATH	255	Vector Analysis	NC	
MATH	256	Introduction to Real Analysis	NC	
MATH	312	Elementary Differential Geometry	NC	
MATH	321	Introduction to Group Theory	NC	
MATH	322	Abstract Algebra	NC	
MATH	343	Partial Differential Equations	NC	
MATH	351	Measure and Integration	NC	
MATH	357	Complex Analysis	NC	
MATH	421	Basic Number Theory	NC	
MATH	439	Metric and Topological Spaces	NC	
MATH	452	Introduction to Functional Analysis II	NC	
<b>PROGRAM COURSES</b>				
<b>Dept.</b>	<b>Code</b>	<b>Course Name</b>	<b>CR.</b>	<b>ECTS</b>
		Departmental Elective I	3	10
		Departmental Elective II	3	10
		Departmental Elective III	3	10
		Departmental Elective IV	3	10
		Departmental Elective V	3	10
		Departmental Elective VI	3	10
		Departmental Elective VII*	3	10
MATH	690	Seminar II	NC	10
MATH	691	Independent Study for Qualifying Exam	NC	30
MATH	700	PhD Dissertation	NC	150
		<b>TOTAL</b>	<b>21</b>	<b>260</b>
<b>EXTRA/NON-DEGREE COURSES</b>				
<b>Dept.</b>	<b>Code</b>	<b>Course Name</b>	<b>CR.</b>	<b>ECTS</b>
		Extra/Non-degree	NC	

\* If a student did not take a research methods/methodologies course during MS work, he/she shall take one of the courses in Research Methodologies instead of Departmental Elective III.

<b>Course Group</b>	<b>Description</b>
Departmental Elective I-VII	Mathematics courses under the GSNAS.
Research Methodologies	MATH 580.
Extra/Non-degree	Optional non-credit (NC) courses that are not part of the program.
Remedial Courses	Undergraduate level courses offered by department.