

## PhD program in Applied Mathematical (2013)

The total minimum required number of credits:	91 credits
- Coursework:	21 credits
+ Basic courses:	09 credits
• Required:	06 credits
• Elective:	03/9 credits
+ Advanced foreign languages for academic purposes:	04 credits
+ Advanced courses:	06/27 credits
+ Overview:	02 credits
- Research	
- PhD Thesis:	70 credits

### Available curriculum:

No	Code	Subjects	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
<b>I</b>	<b>Part 1. Coursework</b>						
<b>I.1</b>	<b>Basic courses</b>		<b>9</b>				
<b>I.1.1</b>	<b>Required</b>		<b>6</b>				
1	MAT8033	<i>Numerical methods for partial differential equations</i>	3	15		30	
2	MAT8034	<i>Numerical methods for extremal problems</i>	3	15		30	
<b>I.1.2</b>	<b>Elective</b>		<b>3/9</b>				
3	MAT8035	<i>Advanced course on solution methods for operator equations</i>	3	15		30	

No	Code	Subjects	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
4	MAT8036	<i>Nonlinear ill-posed problems involving monotone operators</i>	3	15		30	
5	MAT8037	<i>Finite element methods</i>	3	15		30	
<b>I.2</b>	<b><i>Advanced foreign languages for academic purposes (choose one of languages below):</i></b>		<b>4</b>				
6	ENG 8001	<i>Advanced English for Academic Purposes</i>	4			60	
	RUS 8001	<i>Advanced Russian For Academic Purposes</i>	4			60	
	FRE 8001	<i>Advanced French For Academic Purposes</i>	4			60	
	WES 8001	<i>Advanced General For Academic Purposes</i>	4			60	
	CHI 8001	<i>Advanced Chinese For Academic Purposes</i>	4			60	
<b>I.3</b>	<b>Advanced courses</b>		<b>6/27</b>				
7	MAT8036	<i>Nonlinear ill-posed problems involving monotone operators</i>	3	15		30	
8	MAT8037	<i>Finite element methods</i>	3	15		30	
9	MAT8038	<i>Advanced numerical methods for ordinary differential equations</i>	3	15		30	
10	MAT8039	<i>Global optimization</i>	3	15		30	
11	MAT8040	<i>Advanced predictive and optimal models in Renewal theory</i>	3	15		30	
12	MAT8041	<i>Advanced nonlinear mathematical programming</i>	3	15		30	
13	MAT8042	<i>Numerical methods for optimal control problems</i>	3	15		30	

No	Code	Subjects	Credits	Credit hours			Prerequisite
				Lecture	Practice	Self-study	
14	MAT8043	<i>Advanced course on Monte-Carlo methods in high-dimensional numerical analysis</i>	3	15		30	
15	MAT8044	<i>Difference equations</i>	3	15		30	
<b>I.4</b>	<b>Overview</b>		<b>2</b>				
16	MAT8193	<i>Research Perspective Report</i>	2			30	
<b>II</b>	<b>Part 2. Research (research planning, publishing ...)</b>						
<b>III</b>	<b>Part 3. Doctoral Thesis</b>						
17	MAT9005	<i>Ph.D thesis</i>	70				
		<b>Total</b>	<b>91</b>				