

Applied Mathematics MSc

Applied Analysis, Industrial Mathematics, and Financial Mathematics Specialisation

University Of Szeged, Faculty of Science and Informatics, Bolyai Institute

Program Outline

Abbreviations:

l – lecture; pr – practical; cr – credit

field/subject <i>responsible professor</i>	semester				credits	evaluation
	1.	2.	3.	4.		
	number of classroom hours/semester					
Compulsory courses						
Algorithms and Their Complexity <i>Péter Hajnal PhD</i>	30 l, 30 pr				6 cr	exam
Applied Analysis <i>Lajos Molnár PhD, DSc</i>	30 l, 30 pr				6 cr	exam
Probability Theory <i>Gyula Pap PhD, DSc</i>	30 l, 30 pr				7 cr	exam
Optimization Methods <i>Péter Hajnal PhD</i>				30 l, 30 pr	6 cr	exam
Differential Equations <i>Tibor Krisztin PhD, DSc.</i>	30 l, 30 pr				6 cr	exam
Functional Analysis <i>Lajos Molnár PhD, DSc</i>		30 l, 30 pr			6 cr	exam
Discrete Mathematics <i>Péter Hajnal PhD</i>	30 l, 30 pr				6 cr	exam

Applied Analysis Specialisation						
Compulsory courses						
Numerical Methods for Differential Equations <i>Mónika Van Leuven-Polner PhD</i>		30 l, 30 pr			6 cr	exam
Numerical Mathematics <i>László Stachó PhD, DSc</i>		30 l, 15 pr			4 cr	exam
Partial Differential Equations <i>Tibor Krisztin PhD, DSc</i>			30 l, 30 pr		6 cr	exam
Dynamical Systems <i>Gergely Röst PhD</i>			30 l, 30 pr		6 cr	exam
Dynamic Modelling <i>János Karsai PhD</i>		30 l, 30 pr			6 cr	exam
Topology and Manifolds <i>Árpád Kurusa PhD</i>			30 l, 30 pr		6 cr	exam
Statistical Analysis of Time Series <i>Gyula Pap PhD, DSc</i>		30 l, 30 pr			6 cr	exam
Nonlinear Programming <i>Péter Gábor Szabó PhD</i>				30 l, 15 pr	4 cr	exam

Master's thesis						
Research project – thesis work in applied mathematics			30 pr	30 pr	20 cr	practical grade, thesis defence, final exam
Elective courses						
Elective mathematics courses					7 cr	exam
General elective courses					6 cr	exam
Total credits					120 cr	

Industrial Mathematics Specialisation						
Compulsory courses						
Numerical Methods for Differential Equations <i>Mónika Van Leuven-Polner PhD</i>		30 l, 30 pr			6 cr	exam
Numerical Mathematics <i>László Stachó PhD, DSc</i>		30 l, 15 pr			4 cr	exam
Dynamic Modelling <i>János Karsai PhD</i>		30 l, 30 pr			6 cr	exam
Control Theory <i>Attila Dénes PhD</i>			2 ea 2 gy		6 cr	exam
Statistical Analysis of Time Series <i>Gyula Pap PhD, DSc</i>		30 l, 30 pr			6 cr	exam
Theoretical Mechanics <i>László Fehér PhD, DSc</i>			60 l		4 cr	exam
Electrodynamics <i>Zoltán Keresztes PhD</i>			30 l		3 cr	exam
Coding Theory <i>Gábor Czédli PhD, DSc</i>			30 l		3 cr	exam
Advanced Approximate and Symbolic Computations <i>Tamás Vinkó PhD</i>				30 l, 15 pr	4 cr	exam + practical grade

Master's thesis						
Research project – thesis work in applied mathematics			30 pr	30 pr	20 cr	practical grade, thesis defence, final exam
Elective courses						
Elective mathematics courses					9 cr	exam
General elective courses					6 cr	exam
Total credits					120 cr	

Financial Mathematics Specialisation						
Compulsory courses						
Numerical Methods for Differential Equations <i>Mónika Van Leuven-Polner PhD</i>		30 l, 30 pr			6 cr	exam
Statistical Analysis of Time Series <i>Gyula Pap PhD, DSc</i>		30 l, 30 pr			6 cr	exam
Mathematical Statistics <i>László Viharos PhD</i>				30 l, 30 pr	6 cr	exam
Stochastic Processes <i>Gyula Pap PhD, DSc</i>		30 l, 30 pr			6 cr	exam
Financial Mathematics and Ruin Theory <i>Péter Kevei PhD</i>			30 l, 30 pr		6 cr	exam
Microeconomics <i>Ferenc Mozsár, PhD</i>			30 l, 30 pr		5 cr	exam + practical grade
Macroeconomics <i>Benedek Nagy, PhD</i>				30 l, 30 pr	5 cr	exam + practical grade
Introduction to Finance <i>Andreász Kosztópulosz, PhD</i>			30 l		3 cr	koll
Corporate Finance I. <i>Gábor Dávid Kiss, PhD</i>				15 l, 15 pr	4 cr	exam + practical grade
Master's thesis						
Research project – thesis work in applied mathematics			30 pr	30 pr	20 cr	practical grade, thesis defence, final exam
Elective courses						
Elective mathematics courses					8 cr	exam
General elective courses					6 cr	exam
Total credits						
					120 cr	