

PROGRAMME PROFILE

Educational Programme	Applied Mathematics (in Romanian)
Degree Awarded	Master in Applied Mathematics
Standard Length of Studies (Number of ECTS Credits)	2 years – 4 semesters – 120 ECTS
Type of Study	Full-time
Higher Education Institution	Babeş-Bolyai University Cluj-Napoca, Romania
Faculty / Department	Faculty of Mathematics and Computer Science
Contact Person	Professor Radu PRECUP
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Website	http://www.cs.ubbcluj.ro/www/index.php
Profile of the Degree Programme	Applied Mathematics
Target Group / Addressees	Graduates in Mathematics, Informatics, Physics, Chemistry, Biology, Economics and Engineering
Entrance Conditions	The overall three-year undergraduate average grade is taken into consideration as selection criterion
Further Education Possibilities	Doctoral and postdoctoral studies; Continuous self-education and study
Description of Study	<p>Applied mathematics focuses on the creation and study of mathematical and computational tools broadly applicable in science and engineering, and on their use in solving challenging problems in these and related fields. From ecological modeling to mechanics, from statistical analysis to mathematical economics, areas of investigation are diverse. The Applied Mathematics master's program offers advanced theoretical knowledge in this complex and dynamic domain.</p> <p><i>Core courses:</i> Sobolev spaces and partial differential equations; Topological methods for nonlinear partial differential equations ; Applied nonlinear analysis; Numerical methods for operator equations; Advanced numerical analysis; Boundary and finite element methods; Fluid mechanics; Heat transfer in porous media; Linear approximation processes; Biomathematics; Nonlinear dynamic systems; Financial mathematics; Mathematical statistics and applications; Stochastic processes and applications; Methodology of scientific research in mathematics.</p>
Purposes of the Programme	The program was created to respond to the demand of specialists in mathematical modeling, numerical simulation and statistical analysis for various domains of science, economy and industry.
Specialization / Area of Expertise	Mathematical modeling; numerical simulation and approximation; statistical analysis; mathematical interdisciplinary approaches
Extra Peculiarities	Optional: Practice of Education

Practical Training	Participation in a research project of applied mathematics during the last semester
Final Examinations	Research thesis
Gained Abilities and Skills	<ul style="list-style-type: none"> - Knowledge of some of the most recent results and methods from nonlinear analysis, in connection with concrete applications; - Capacity to identify and use fundamental models of partial differential equations in mathematical analysis of real processes; - Ability to construct new mathematical models and to maintain the feedback towards reality; - Knowledge of statistical methods and stochastic analysis; - Ability to use numerical simulations and approximation techniques; - Ability of self -documentation and to carry out independent mathematical work and research.
Job Placement, Potential Field of Professional Activity	Mathematicians and experts in mathematical modeling in: research, academic and educational institutes, banking system, industry and production companies.

Date: October 11, 2010

Signature: