

## GRADUATE PROFILE

### **Mathematics – studies of second degree**

The graduate acquires in-depth knowledge in the field of mathematics and computer science, demonstrates the ability to construct mathematical models and can apply advanced information technology tools to solving mathematical problems. The graduate is able to use acquired knowledge and skills in various disciplines depending on the chosen specialty.

#### Specialisation: mathematical computer science

The graduate of this specialization receives a thorough education in the field of mathematics and computer science enabling him or her to work as an independent computer scientist, and to begin interdisciplinary cooperation with those who in their professional activity use mathematics and computer science. Students who major in mathematical computer science acquire knowledge essential for data processing, solving optimization problems, constructing algorithms and analyzing their computational complexity, modeling and computer simulations, as well as skills required to administer and use local and wide area computer networks. Employment prospects: graduates of this specialisation can find employment in computer companies, IT centers or in research institutions which use information technologies.

#### Specialisation: mathematics and computer science in economics

The graduate acquires in-depth knowledge in the field of mathematics and its applications in economics and management; the graduate also receives a thorough education in the field of computer science enabling him or her to solve practical economic problems using quantitative methods. The graduate of this specialisation is able to construct and analyze mathematical models of economic processes, construct and verify econometric models, collect, analyze and use data to facilitate economic decisions. Employment prospects: graduates of this specialisation are ready to work independently and creatively for companies and institutions which use advanced quantitative analysis of economic processes, as well as in research institutions.

#### Specialisation: mathematics and computer science in finance and insurance

The graduate receives a thorough education in the field of mathematics and computer science. The graduate acquires interdisciplinary knowledge enabling him or her to participate in processes of making capital decisions. The graduate of this specialisation demonstrates skills and knowledge of actuarial calculus, financial evaluation of investment projects and statistical elaboration of data and is able to use adequate computer packages for the above purposes, the graduate shows the ability to construct mathematical models of both capital and insurance markets issues. Employment prospects: graduates of this specialisation can find employment in big companies where capital decisions are of special importance, i.e. banks, insurance companies, companies operating on capital market, and in research institutions.

#### Specialisation: mathematical modelling

The graduate of this specialization receives a thorough education in the field of mathematics, statistics and computer science necessary for interdisciplinary cooperation with economists, engineers and social scientists. The knowledge acquired during the course enables the graduate to develop and analyze mathematical models for problems whose sources can be traced to natural, technical, financial, and social processes. Employment prospects: the graduates of this specialisation can find employment in industrial plants, financial and insurance institutions, centers for implementing advanced technology, universities, research institutions, and consulting companies.

#### Specialisation: teaching mathematics

The graduate has in-depth knowledge of mathematics and computer science, he or she has the ability to construct a line of mathematical reasoning and to deepen the knowledge of contemporary research results. The graduate is prepared to test mathematical hypotheses using information tools, as well as to constantly develop his or her knowledge and skills. Employment prospects: graduates of this specialisation are well-prepared to teach mathematics in all types of schools (cycles – II, III, IV).