

## Quantitative Economic Analysis

Faculty of Informatics and Statistics  
University of Economics, Prague, Czech Republic

Academic year 2019/2020

**Academic Guarantor:** prof. Ing. Josef Arlt, CSc.

### QUANTITATIVE ECONOMIC ANALYSIS

The master's programme in Quantitative Economic Analysis is a multidisciplinary academic programme that was established in cooperation with the departments of econometrics, statistics and probability, mathematics and demography with focusing on the development and application of quantitative methods for analysing economic issues in a broad sense. It presents a successful preparation for a professional career in which econometrics, operation research, statistics and demography is used in analysing and solving complex issues in general economics, and business and financial economics. Graduates can be employed as experts in optimizing strategic and operational business processes like transport flows, stock management and operating systems. They can be found working at the central banks, central government agencies and ministries, financial institutions and consultancy firms. The components of the master's programme correspond closely with the departments' research interests, which means that many of the latest scientific developments in areas like financial econometrics, logistics, statistics, economic geography and game theory find their way directly into the teaching programme.

The master's programme takes two years with an ideal load of 30 ECTS credits per semester involving mandatory and elective course from both major and minor specialization, state exams and final thesis. Much attention is paid to an active method of studying. This includes writing study papers, working out cases, preparing practical assignments with a strong practical focus using the statistical and optimizing packages that helps students to prepare for entry into professional life. Course descriptions and the evaluation procedures are specified in the syllabus of each course. The final thesis is usually written during the fourth semester and it is evaluated by the supervisor and second independent opponent. For more details please check the website [qea.vse.cz](http://qea.vse.cz).

Quantitative Economic Analysis	ECTS	Semester			
		1.	2.	3.	4.
Compulsory courses	60	27	12	6	15
Elective courses	15	3		12	
Minor specialization	30		18	12	
State exams and thesis defence	15				15
<b>Total sum</b>	<b>120</b>	<b>30</b>	<b>30</b>	<b>30</b>	<b>30</b>

Compulsory courses	Code	ECTS	Semester			
			1.	2.	3.	4.
Combinatorial Optimization	4EK605	6	●			
Economic Demography I	4DM465	3	●			
Economic Statistics	4ES611	6	●			
Multiple Criteria Decision Making	4EK606	6	●			
Probability and Mathematical Statistics I	4ST621	6	●			
Introduction to Financial and Insurance Mathematics	4ST608	6		●		
Regression	4ST616	6		●		
Advanced Econometrics 1	4EK608	6			●	
Case Studies in Operations Research	4EK607	6				●
Statistical Methods and Capital Markets	4ST441	3				●
Time Series	4ST631	6				●

Elective courses	Code	ECTS
Advanced Statistical Methods	4ST650	3
Applied Multivariate Statistics	4ST611	6
Computational Methods and Data Analysis	4MM451	6
Credit Risk Modelling and Management	1BP450	4
Czech for Foreigners	4SA628	4
Economic Demography II	4DM475	6
Information Systems Management	4SA431	3
Information Technologies in Entrepreneurship	4IT487	6
Introduction to Data Analysis with R and SQL	4ST604	3
Project Management	4EK603	3
Real Data Analysis	4ST606	6
Statistics with R	4ST605	3
Understanding Economic and Social Indicators	4ES526	3
International Week courses		3



## MINOR SPECIALIZATION IN INSURANCE MATHEMATICS

The specialization covers statistical and probabilistic models applied in the field of insurance. It is a combination of theory, methodology and applications. Many examples and study cases are based on real data. The specialization covers tasks from both life and non-life insurance.

Compulsory courses	Code	ECTS	Semester			
			1.	2.	3.	4.
Probabilistic and Statistical Methods in non-life Insurance	4ST625	6	●			
Probability and Mathematical Statistics 2	4ST630	6	●			
Mathematical and Probabilistic Methods in life Insurance	4ST624	6	●			

Elective courses	Code	ECTS
Games and Decisions	4EK602	3
Introduction to Data Analysis with R and SQL	4ST604	3
Statistics with R	4ST605	3
Stochastic Processes and Risk in Finance and Insurance	4ST644	6
Choose from list: min. 12 ECTS		



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