Annex 2: Module description for the Consecutive Degree Programme in Business & Economics leading to the award of Master of Science

Specialization module

Module number	220000-020 (version 02)
Module name	Mathematical models in economics (Mathematische Modelle in den Wirtschaftswissenschaften)
Module coordinator	Dean of Student Affairs for all degree programs of the faculty of Mathematics (except for the degree programs Data Science, MINT, Advanced and Computational Mathematics)
Content and qualification objectives	Content: Basic concepts of mathematical economics (consumption behavior, production management, market equilibrium, commodity pricing, location planning, allocation of raw materials, etc.), Linear, discrete, stochastic, dynamic and game theory models from micro- and macroeconomics, such as input-output analysis, discrete selection experiments, economic growth, oligopoly, diffusion of innovations, income inequality, etc. Qualification objectives: Students are able to model problems with economic relevance. They can classify and analyze them with adequate mathematical tools. Students are aware of the limited interpretability of the obtained results and know about the importance of model assumptions. They may slightly adjust the models they have learned about and discuss that in a mathematically precise way.
Teaching methods	The module teaching methods are lecture and exercise course. • Lecture: Mathematical models in economics (Mathematische Modelle in den Wirtschaftswissenschaften) (4 teaching units) • Exercise course: Mathematical models in economics (Mathematische Modelle in den Wirtschaftswissenschaften) (2 teaching units) The classes may be conducted in German or in English.
Requirements for participation (recommended knowledge and skills)	none
Module application	---
Requirements for the award of credit points	Meeting the admission requirement for the assessment component and successfully passing the module examination are prerequisites for the awarding of credit points. The admission requirement is the following examination prerequisite (no limit to the number of attempts): • Proof for complete exercise tasks on Mathematical models in economics (Mathematische Modelle in den Wirtschaftswissenschaften) amounting to a total of 120 assessment units (per student in the case of teamwork). Proof is provided if at least 50% of the assessment units are proved.
Module examination	The module examination consists of one assessment component. • 30-minute oral examination on Mathematical models in economics (Mathematische Modelle in den Wirtschaftswissenschaften) (Examination number: 20077) The assessment component must be taken in German or in English.
Credits and grades	This module is worth 10 credit points. Section 10 of the Examination Regulations specifies how the assessment component is assessed and how the module grade is calculated.
Frequency	The module is offered each academic year in the winter semester.
Number of hours	The module requires students to complete a total of 300 study hours.
Module duration	Under normal circumstances, the module is completed in one semester.