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

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Specialization module

Module number	220000-331 (version 02)
Module name	Game Theory (Spieltheorie)
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: • Non-cooperative game theory: Nash equilibria, correlated equilibria, evolutionary stable strategies, partial game perfect equilibria, sequential equilibria, trembling-hand-perfect equilibria • cooperative game theory: core, kernel, nucleolus, Shapley value, negotiation solution Qualification objectives: Students are able to model strategic interdependencies, which typically occur in economic and political contexts, using tools of game theory. They can classify games into cooperative and non-cooperative, strategic and in extensive form, with perfect and imperfect information and apply appropriate equilibrium concepts to them. Students are also proficient in calculating equilibria in simple situations. They are able to deduce and contrast their game theory features.
Teaching methods	The module teaching methods are lecture and exercise course. • Lecture: Game Theory (Spieltheorie) (4 teaching units) • Exercise course: Game Theory (Spieltheorie) (2 teaching units) The classes may be conducted in English or in German.
Requirements for participation (recommended knowledge and skills)	none
Module application	---
Requirements for the award of credit points	Successfully passing the module examination is required for the awarding of credit points.
Module examination	The module examination consists of one assessment component. • 30-minute oral examination on the contents of the module (Examination number: 20056) The assessment component must be taken in English or in German.
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 every second 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.