**Module number**: 207

**Title**: Financial Modeling

**Applicability**: Module is an instrument for the quantitative calculation of all financial transactions.

**Module type**: Extension module (EM)

**Language of instruction**: English

**Teaching methods**: Seminaristic teaching

**Frequency of offer**: weekly

**Semester**: 7th Semester

**SWS**: 4

**ECTS**: 5

**Workload**: 50 / 40 / 40 / 20

**Corresponding courses**: none

**Prerequisites**: none

**Assessment method**: SP

**Exam aids to be used**: Open-book incl. PC

**Responsibility for Lecturer(s)**: Prof. Dr. Bernd Hofmann

**Lecturer(s)**: Prof. Dr. Dr. Joachim Häcker

### Learning Objectives / Competences:

After passing the exam, students will be able to give an overview of the most important valuation methods and compare them. They will also be able to relate business planning to business valuation and describe the interrelationships in their own words. The students learn to independently structure complex company valuation tasks and asset management tasks and to develop independent modules for their solutions as well as to check the structure of the valuation model and the results of the company valuation by means of model review. The students can work interactively on the problem by working in small groups. After attending the module, the students will recognize how the process can be structured in company valuation and how Financial Modeling Standards can be applied.

With regard to the level of competence, the course participants are particularly capable,
- to transfer the results of the company valuation to other modules such as investment and financing and to combine them with these;
- manage a company valuation project and develop their own solutions in a group of valuation specialists;
- to create a transparent and complete documentation of the assumptions and methods in the given valuation project;
- Structure the process of company valuation and apply the standards of professional financial modeling; master theoretical and empirical challenges of company valuation;
- apply their knowledge to given valuation projects and adapt it to real valuation situations;
- Critically question the assumptions, algorithms and results of any valuation approach.

### Contents:

The lecture "Financial Modeling" combines the knowledge in the most important financial areas with sound computer skills in Microsoft Excel. This makes it possible to optimally use the contents of Finance to solve given problems and to minimize errors. Financial Modeling is based on a basic philosophy that will change future work in the financial sector in the long term. The student will holistically construct all models in such a way that the highest degree of efficiency and transparency will facilitate his daily work.

The course deals with corporate planning and valuation issues, which form the core of all corporate finance transactions. Furthermore, the basic topics of portfolio management are presented. The Financial Modeling Standards and the Model Review form the basis for this.

### Applied methods of business administration:

- **Models and methods of analysis (research and analysis models):**
  The models presented there are applied to current issues in the financial sector.
  The models are essentially the following
- Capital asset pricing model (e.g. derivation of beta, risk-free interest rate; market risk premium)
- Arbitrage Pricing Theory
- Trading Multiples method (e.g. peer group determination)
- Transaction Multiples method (e.g. selection of transactions)
- Entity method (e.g. WACC)
- **Quantitative empirical methods** (comparative - statistical, mathematical method, data analysis):
  EXCEL-based quantitative methods are used to represent the models shown above. These are essentially:
  - Scenario analyses (e.g. best case and worst case scenarios)
  - simulation techniques
  - Iteration method (e.g. solution of the circularity problem)
  - Sensitivity analyses (e.g. Sensitivity Tables)
  - input-output models
- **Qualitative interpretative methods** (expert interviews, surveys, standardised surveys):
  - A qualitative analysis of the valuation methods (e.g. from "value" to "price" by means of the analysis of takeover premiums) is carried out, which leads to a valuation range.
  - Expert interviews are used to check the practicability of the result.
  - Qualitative recommendations for action are then derived (e.g. use in negotiations (M&A) or derivation of the book-building spread (IPO)).

**Teaching and learning methods:**
Seminaristic teaching with quantitative Excel-modelled calculations.

**Literature:**