

## **Research Methods**

**Instructors:** Prof. Dr. Wilhelm Althammer; Oliver Hoßfeld

**Org-unit:** MSC

**Credits:** 2,0

**Language of instruction:** English

### **Learning objectives and outcomes:**

The aim of this course is to provide a thorough understanding of regression analysis and related statistical concepts.

By the end of the course, students should:

- understand the statistical theory underlying regression analysis and be able to apply the methods in areas such as economics, finance, marketing and management using econometric software.
- be able to formulate linearized models for concrete problems,
- be able to apply regression analysis in own empirical projects, using econo-metric software
- be able to interpret the results and the limitations of their analysis.

### **Content:**

1. Introduction
2. Ordinary Least Squares Estimation
3. The Classical Model of Linear Regression
4. Confidence Intervals and Hypothesis Testing
5. Functional Specification I: Omitted and Irrelevant Variables
6. Functional Specification II: Choice of Functional Form
7. Stochastic Specification I: Autocorrelation
8. Stochastic Specification II: Heteroskedasticity

### **Teaching Methods:**

The sub-module will be presented in lectures supplemented by exercises. In order to allow self study, the students receive comprehensive reading material and additional references in advance.

### **Conditions of Participation:**

Admission to the HHL full-time Master Program in Management (M.Sc.).

### **Application, combination and frequency:**

The course is part of the core module “Economics” and can only be chosen in combination with all other courses of the module. The contents are matched with the other lectures within the module “Economics”. The course is held once a year.

**Conditions for credit points and grades:**

Credit points are awarded for passing the module "Economics". The module is passed if the weighted average of the single grades of the courses is 4.0 or better. The grade of the course is determined by the weighted average of the single grades of the examinations.

**The course contains the following examinations:**

Final exam (100 %)

Grades range from 1 to 5 (very good to failing).

**Workload:**

The course "Research Methods" accounts for 2 ECTS, which are equivalent to a total workload of 60 hours (approx. 20 hours of classes and 40 hours of preparation and self study).

**Duration:**

The course extends over one term.

**Literature:**

- A.H. Studenmund, Using Econometrics: A Practical Guide, 2008, 5th edition
- J.M. Wooldridge, Introductory Econometrics, 2009, 4th ed.