

## **Methodische Grundlagen der Wirtschaftsinformatik: Computational Economics Summer Term 2023 - Lecture -**

### **Course Description:**

This course strives for a hands-on approach on computational economics. The ability to conceptualize an economic problem verbally, to formulate it as a mathematical model, and then represent the mathematics in software so that the model can be solved on a computer is a crucial skill for economists. Computational Economics contains well-known models designed to help students move from verbal to mathematical to computational representations in economic modeling. The course not only focuses on just solving the models, but also on developing the ability to modify them to reflect one's interest and point of view.

### **Target Group:**

This course addresses students in the first year of their integrated master program, M.Sc. VWL, and M.Sc. Computer Science students.

### **Organization:**

This course consists of a lecture, and exercises. The contents of lecture and exercises are relevant for the exam. Students can earn bonus points for the exam. Submission of the bonus point solutions will be made via Ilias.

**The course will be held as a Block course from 02.05-09.05, 10:15-18:00 (with break) in PC-Pool 3 with lecture in the morning/noon and exercise sessions in the evening.**

**The first lecture will take place on 02.05 10:15.**

**Please register for the course via HisInOne. You will then receive an email with the password for Ilias.**

### **Communication:**

All announcements will be made via email. Materials will be uploaded on Ilias..

**Language:** English

**Topics:**

1. Introduction
2. Computer Arithmetic
3. Error Estimation
4. Linear Algebra
5. Taylor Approximation
6. One-dimensional optimization
7. Multi-dimensional optimization

**Literature:**

David A. Kendrick, P. Ruben Mercado, & Hans M. Amman (2005) “*Computational Economics*”, Princeton University Press

**Policies and Procedures:**

**Grading:** final exam + bonus points

**Exam date:** tba

**Credit points:** 6

**Chair:**

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