**Module title**  
Computational Economics

**Abbreviation**  
12-CE-152-m01

**Module coordinator**  
holder of the Chair of Public Finance  

**Module offered by**  
Faculty of Business Management and Economics

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<tr>
<th>ECTS</th>
<th>Method of grading</th>
<th>Only after succ. compl. of module(s)</th>
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<tr>
<td>5</td>
<td>numerical grade</td>
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**Duration**  
1 semester

**Module level**  
undergraduate

**Other prerequisites**  
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### Contents

This module introduces students to the numerical implementation of economic models. It consists of three main parts:

1. The programming language FORTRAN 90
2. Numerical solution methods
3. Economic applications:
   - The static general equilibrium model
   - Topics in finance and risk management
   - Life cycle model
   - Overlapping generations model

### Intended learning outcomes

After finishing this module students are able to

1. implement simple economic models on the computer using Fortran 90
2. using Monte Carlo techniques to find optimal portfolio structures and option prices
3. quantify the risks of portfolios of banks and insurance companies
4. simulate simple reforms of the tax and transfer system
5. interpret the simulation results economically.

### Courses

(type, number of weekly contact hours, language — if other than German)

P (2)

### Method of assessment

(type, scope, language — if other than German, examination offered — if not every semester, information on whether module is creditable for bonus)

project: term paper and programming a model (approx. 10 pages total)

### Allocation of places

20 places. (1) Should the number of applications exceed the number of available places, places will be allocated by lot among all applicants irrespective of their subjects. (2) Places on all courses of the module with a restricted number of places will be allocated in the same procedure. (3) A waiting list will be maintained and places re-allocated by lot as they become available.

### Additional information

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### Referred to in LPO I  
(examination regulations for teaching-degree programmes)

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### Module appears in

Bachelor’ degree (1 major) Business Management and Economics (2015)
Bachelor’ degree (1 major) Economathematics (2015)
Bachelor’ degree (1 major) Business Information Systems (2015)
Master's degree (1 major) China Business and Economics (2016)
Bachelor’ degree (1 major) Business Information Systems (2016)
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<tr>
<th>Bachelor' degree (1 major) Economathematics (2017)</th>
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<tr>
<td>Master's degree (1 major) China Business and Economics (2019)</td>
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