### Module title

Computational Complexity

### Abbreviation

10-I-KT-152-m01

### Module coordinator

Dean of Studies Informatik (Computer Science)

### Module offered by

Institute of Computer Science

### ECTS

5

### Method of grading

Numerical grade

### Only after succ. compl. of module(s)

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### Duration

1 semester

### Module level

Undergraduate

### Other prerequisites

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### Contents

Complexity measurements and classes, general relationships between space and time classes, memory consumption versus computation time, determinism versus indeterminism, hierarchical theorems, translation methods, P-NP problem, completeness problems, Turing reduction, interactive proof systems.

### Intended learning outcomes

The students possess a fundamental and applicable knowledge in the areas of complexity measurements and classes, general relationships between space and time classes, memory consumption versus computation time, determinism versus indeterminism, hierarchical theorems, translation methods, P-NP problem, completeness problems, Turing reduction, interactive proof systems.

### Courses

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### Method of assessment

Written examination (approx. 60 to 120 minutes). If announced by the lecturer at the beginning of the course, the written examination may be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups of 2 candidates (approx. 15 minutes per candidate).

Language of assessment: German and/or English creditable for bonus

### Allocation of places

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### 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) Computer Science (2015)
- Bachelor' degree (1 major) Mathematics (2015)
- Bachelor' degree (1 major) Computational Mathematics (2015)
- First state examination for the teaching degree Gymnasium Computer Science (2015)
- Master's teaching degree Gymnasium MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)
- Supplementary course MINT Teacher Education PLUS, Elite Network Bavaria (ENB) (2016)
- Bachelor' degree (1 major) Computer Science (2017)