## Module description

### Module title
Algorithm and data structures

### Abbreviation
10-I-ADS-072-m01

### Module coordinator
Dean of Studies Informatik (Computer Science)

### Module offered by
Institute of Computer Science

### ECTS
8

### 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
Design and analysis of algorithms, recursion vs. iteration, sort and search methods, data structures, abstract data types, lists, trees, graphs, basic graph algorithms, programming in Java.

### Intended learning outcomes
[Version 1: The students are able to independently design algorithms as well as to precisely describe and analyse them. They are able to apply recursion in algorithms and data structures. The students are familiar with the three basic programming paradigms and are able to apply them in practical programs.]  [Version 2: The students are able to independently design algorithms as well as to precisely describe and analyse them. The students are familiar with the basic paradigms of the design of algorithms and are able to apply them in practical programs. The students are able to estimate the run-time behaviour of algorithms and to prove their correctness.]

### Courses
V + Ü (no information on SWS (weekly contact hours) and course language available)

### Method of assessment
written examination (80 minutes) or oral examination (one candidate each: 20 minutes, groups of 2: 30 minutes, groups of 3: 40 minutes)

### Allocation of places
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### Additional information
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### Referred to in LPO I
(examination regulations for teaching-degree programmes)

### Module appears in
Bachelor’s degree (1 major) Computer Science (2007)
Bachelor’s degree (1 major) Mathematics (2008)
Bachelor’s degree (1 major) Mathematics (2007)
Bachelor’s degree (1 major) Economathematics (2009)
Bachelor’s degree (1 major) Economathematics (2008)
Bachelor’s degree (1 major) Business Information Systems (2007)
Bachelor’s degree (1 major) Business Information Systems (2008)
Bachelor’s degree (1 major) Computational Mathematics (2009)