

Module title		Abbreviation
Algorithms and data structures		10-I-ADS-152-m01
Module coordinator		Module offered by
Dean of Studies Informatik (Computer Science)		Institute of Computer Science
ECTS	Method of grading	Only after succ. compl. of module(s)
10	numerical grade	--
Duration	Module level	Other prerequisites
1 semester	undergraduate	--
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		
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 (type, number of weekly contact hours, language — if other than German)		
V (4) + Ü (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)		
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). creditable for bonus		
Allocation of places		
--		
Additional information		
--		
Referred to in LPO I (examination regulations for teaching-degree programmes)		
§ 49 I Nr. 1a § 69 I Nr. 1a		
Module appears in		
Bachelor' degree (1 major) Computer Science (2015) Bachelor' degree (1 major) Mathematics (2015) Bachelor' degree (1 major) Economathematics (2015) Bachelor' degree (1 major) Human-Computer Systems (2015) Bachelor' degree (1 major) Computational Mathematics (2015) Bachelor' degree (1 major) Aerospace Computer Science (2015) First state examination for the teaching degree Realschule Computer Science (2015) First state examination for the teaching degree Gymnasium Computer Science (2015) Bachelor' degree (1 major) Aerospace Computer Science (2017) Bachelor' degree (1 major) Computer Science (2017) Bachelor' degree (1 major) Computer Science (2019) Bachelor' degree (1 major) Aerospace Computer Science (2020)		