

Module description

Module title					Abbreviation
Algorithmic Graph Theory 10-GE-AGT-162-m01					
Module coordinator				Module offered by	
holder of the Chair of Computer Science I				Institute of Computer Science	
ECTS Method of grading		Only after succ. compl. of module(s)			
5 numerical grade					
Duration		Module level	Other prerequisites		
1 semester undergraduate		undergraduate			
Contents					
We discuss typical graph problems: We solve round trip problems, calculate maximal flows, find matchings and colourings, work with planar graphs and find out how the ranking algorithm of Google works. Using the examples of graph problems, we also become familiar with new concepts, for example how we model problems as linear programs or how we show that they are fixed parameter computable.					
Intended learning outcomes					
The students are able to model typical problems in computer science as graph problems. In addition, the parti- cipants are able to decide which tool from the course helps solve a given graph problem algorithmically. In this course, students learn in detail how to estimate the run time of given graph algorithms.					
Courses (type, number of weekly contact hours, language — if other than German)					
V (2) + 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 (ap- prox. 15 minutes per candidate). Language of assessment: German and/or English creditable for bonus					
Allocation of places					
Additional information					
Workload					
150 h					
Teaching cycle					
Referred to in LPO I (examination regulations for teaching-degree programmes)					
Module appears in					
Bachelor's degree (1 major) Games Engineering (2016)					
Dachelor 5 degree (1 major) dames Engmeeting (201/)					
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