Module title
Algorithmic Graph Theory

Abbreviation
10-I-GT-102-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)--

Duration
1 semester

Module level
undergraduate

Other prerequisites
Admission prerequisite to assessment: exercises (type and scope to be announced by the lecturer at the beginning of the course).

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

Method of assessment
written examination (approx. 50 to 60 minutes); if announced by the lecturer by four weeks prior to the examination date, the written examination can be replaced by an oral examination of one candidate each or an oral examination in groups (one candidate each: 15 minutes, groups of 2: 20 minutes, groups of 3: 25 minutes)

Language of assessment: German, English if agreed upon with the examiner

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 (2010)
Bachelor' degree (1 major) Aerospace Computer Science (2009)
Bachelor' degree (1 major) Aerospace Computer Science (2011)
Master's degree (1 major) Computer Science (2010)
Master's degree (1 major) Mathematics (2010)
First state examination for the teaching degree Gymnasium Computer Science (2009)