### Module title
Algorithmic Graph Theory

### Abbreviation
10-I-AGT-141-m01

### Module coordinator
holder of the Chair of Computer Science I

### 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
--

### 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. 60 to 120 minutes); if announced by the lecturer at the beginning of the course, the written examination can be replaced by an oral examination of one candidate each (approx. 20 minutes) or an oral examination in groups (groups of 2, approx. 30 minutes)

### Language of assessment
German, English

### Allocation of places
--

### Additional information
--

### Referred to in LPO I
(examination regulations for teaching-degree programmes)

### Module appears in
- Bachelor' degree (1 major) Computer Science (2014)
- Bachelor' degree (1 major) Mathematics (2014)
- Bachelor' degree (1 major) Computational Mathematics (2014)
- Bachelor' degree (1 major) Aerospace Computer Science (2014)