

Module title		Abbreviation
Operations Research		10-I=OR-232-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	graduate	--
Contents		
<p>Production plans, railway timetables, the assignment of radio frequencies, planning of delivery tours, or the construction of an 'optimal' university timetable: these problems – and many more – can be modeled as (mixed-) integer linear optimization problems and solved with integer programming methods.</p> <p>This course teaches integer programming methods like branch-and-bound, cutting plane, and decomposition methods. Furthermore, we practice our modeling skills by studying a variety of application examples.</p>		
Intended learning outcomes		
<p>After completing the course</p> <ul style="list-style-type: none"> • The students are able to model optimization problems as mathematical program (in particular: mixed-integer linear programs). • The students are able to apply integer programming methods and understand how and why these work. 		
Courses (type, number of weekly contact hours, language – if other than German)		
V (2) + Ü (2) Module taught in: German and/or English		
Method of assessment (type, scope, language – if other than German, examination offered – if not every semester, information on whether module is creditable for bonus)		
<p>written examination (approx. 60 to 120 minutes)</p> <p>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).</p> <p>Language of assessment: German and/or English</p> <p>creditable for bonus</p>		
Allocation of places		
--		
Additional information		
Focuses available for students of the Master's programme Informatik (Computer Science, 120 ECTS credits): IN		
Workload		
150 h		
Teaching cycle		
--		
Referred to in LPO I (examination regulations for teaching-degree programmes)		
--		
Module appears in		
<p>Master's degree (1 major) Information Systems (2019)</p> <p>Master's degree (1 major) Information Systems (2022)</p> <p>Master's degree (1 major) Computer Science (2023)</p> <p>Master's degree (1 major) Computational Mathematics (2024)</p> <p>Master's degree (1 major) Management (2024)</p> <p>Master's degree (1 major) Mathematics (2024)</p>		



Master's degree (1 major) Information Systems (2024)
Master's degree (1 major) Econometrics (2024)