

Course Name	Discrete Optimization
Contents and Objectives	<p><u>Content:</u></p> <ul style="list-style-type: none"> • optimization problems with discrete ground sets • theory and practical methods for linear optimization with integrality constraints (mixed integer programming) • relaxations and dual problems • algorithmic complexity • approximation algorithms <p><u>Objectives of the course:</u> Practical optimization and planning problems typically comprise integrality constraints that model discrete decisions or discrete states. Besides teaching basic results of the field the course enables to categorize and model these problems, to estimate their computational complexity and to choose or develop suitable algorithmic approaches.</p>
Teaching	<p>This course consists of lectures and exercise classes.</p> <ul style="list-style-type: none"> • Lecture: Discrete Optimization (4h/week) • Exercise class: Discrete Optimization (2h/week) <p>This class can be taught remotely.</p>
Prerequisites	Basic notions of Linear Algebra, Linear Optimization and Discrete Mathematics
Verwendbarkeit des Moduls	-
Examination	Oral exam (30 minutes)
Credits	8 ECTS points
Frequency	This course is given at least every second year.
Workload	The estimated total working time for this course is 240 hours.
Duration	This course is given during one semester.