

## Course Descriptions NonDegree 2021-2022

Course Title Algorithms and Optimisation  
 Course Code EBC4049  
 ECTS Credits 6,5  
 Assessment Whole/Half Grades

Period	Start	End	Mon	Tue	Wed	Thu	Fri
2	25-10-2021	10-12-2021	X			X	

Level Advanced  
 Coordinator Stan van Hoesel For more information:s.vanhoesel@maastrichtuniversity.nl  
 Language of instruction English

Goals Students learn how to recognize NP-hard optimization problems, and to formulate them. Moreover, the students learn to select appropriate exact and/or heuristic methods to solve the problems.

Description We introduce complexity theory. We discuss exact optimization algorithms as well as approximate algorithms for NP-hard problems. Students learn how standard techniques from mathematical programming, combinatorial optimisation, and heuristics and search methodologies work, and learn to read research articles and to give presentations on the subjects.

Literature \* L.A. Wolsey Integer Programming (2nd edition, 2021),  
 Edmund K. Burke and Graham Kendall (eds.) Search Methodologies, Springer, Boston, MA, 2014  
 \* Various research articles

Prerequisites Game theory and Optimization (EBC4188)  
 Teaching methods PBL / Presentation / Lecture / Papers / Groupwork / Coaching  
 Assessment methods Attendance / Presentation

Evaluation in previous academic year For the complete evaluation of this course please click <http://iwio-sbe.maastrichtuniversity.nl/rapporten.asp?referrer=codeUM>

This course belongs to the following programme / specialisation	Master Business Research - No specialisation	Year 2 Methodology Elective(s)
	Master Business Research - Operations Research	Year 1 Compulsory Course(s)
	Master Business Research - Operations Research	Year 1 Elective Course(s)
	Master Business Research - Operations Research	Year 2 Elective Course(s)
	Master Econometrics and Operations Research	Elective Course(s)
	SBE Non Degree Courses	Master Courses