Course Descriptions None 2022-2023

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

Period

Period	Start	End	Mon	Tue	Wed	Thu	Fri
2	31-10-2022	16-12-2022	X			X	

Level	Advanced
Coordinator	Lars Rohwedder For more information:l.rohwedder@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	PLEASE NOTE THAT THE INFORMATION ABOUT THE TEACHING AND ASSESSMENT METHOD(S) USED IN THIS COURSE IS WITH RESERVATION. A RE-EMERGENCE OF THE CORONAVIRUS AND NEW COUNTERMEASURES BY THE DUTCH GOVERNMENT MIGHT FORCE COORDINATORS TO CHANGE THE TEACHING AND ASSESSMENT METHODS USED. THE MOST UP-TO-DATE INFORMATION ABOUT THE TEACHING/ASSESSMENT METHOD(S) WILL BE AVAILABLE IN THE COURSE SYLLABUS. 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	E&OR Electives
SBE Non Degree Courses	Master Courses