Course Descriptions None 2025-2026

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	27-10-2025	12-12-2025		X		X	

Level	Advanced
Coordinator	Tjark Vredeveld, Tom van der Zanden For more information:t.vredeveld@maastrichtuniversity.nl; t.vanderzanden@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)
Transitional Regulations	TRANSITIONAL REGULATIONS <ul class="trcohorts"> - Master Business Research - Master Business Research - Operations Research - In 2024-2025 and 2025-2026 education and exam/resit opportunities are offered. - In 2026-2027 exam/resit opportunities are offered. - From 2027-2028 onwards, the course is cancelled. <table><col style="width: 200px;"><col style="width: 120px;"><col style="width: 120px;"><col><thead><tr><th>Academic Year</th><th>Education</th><th>Exam/Resit</th><th>Replacement(s)</th></tr></thead><tbody><tr><td>2024-2025 - 2025-2026</td><td>X</td><td>X</td><td> </td></tr><tr><td>2026-2027</td><td> </td><td>X</td><td> </td></tr><tr><td>2027-2028 onwards</td><td> </td><td> </td><td> </td></tr></tbody></table>
Teaching methods	PBL / Presentation / Lecture / Papers / Groupwork / Coaching
Assessment methods	Attendance / Written Exam / 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	In transition - Y2 Methodology Electives
Master Business Research - Operations Research	In transition - Year 1 Compulsory Courses
Master Econometrics and Operations Research	E&OR Electives
Master Economic and Financial Research - Econometrics	Elective Courses
Master Economic and Financial Research - Econometrics	Year 1 Core Courses
SBE Non Degree Courses	Master Courses