

Course Descriptions None 2025-2026

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	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 <div class="trreg"><div class="subtitle">TRANSITIONAL REGULATIONS</div><ul class="trcohorts">Master Business ResearchMaster Business Research - Operations ResearchIn 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;"><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></div>

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+2 Elective Courses
	Master Econometrics and Operations Research	Elective Courses
	Master Economic and Financial Research - Econometrics	Elective Courses
	Master Economic and Financial Research - Econometrics	Year 1 Core Courses
	SBE Non Degree Courses	Master Courses