Course Descriptions Exchange 2022-2023

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Course Title	Game Theory and Optimisation							
Course Code	EBC4188							
ECTS Credits	6,5							
Assessment	Whole/Half Grades							
Period	Period 1	Start 5-9-2022	End 21-10-2022	Mon X	Tue	Wed	Thu X	Fri
Level	Advanced							
Coordinator	Marc Schröder, Veerle Timmermans For more information:m.schroder@maastrichtuniversity.nl; vm.timmermans@maastrichtuniversity.nl							
Language of instruction	English							
Goals	This course provides a comprehensive overview of optimization techniques such as linear and integer programming, and non-linear programming, with applications in game theory and economics. Students learn optimization techniques from mathematics and operations research, and how to apply them in models from game theory and economic theory.							
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.							
	Topics in optimization include duality theorems in LP, branch and bound and cutting plane algorithms in IP, and Kuhn-Tucker conditions for NLP.							
	Topics in game theory and economics include computation of Nash equilibrium and refinements and mechanism design.							
Literature	The course will be based on chapters from standard textbooks plus additional readers.							
	Recommended literature for background reading: * Hans Peters : Game Theory : A Multi-Leveled Approach. Springer-Verlag. * Stephen Boyd and Lieven Vandenberghe : Convex Optimization. Cambridge University Press. * Roger Myerson : Game Theory : Analaysis of Conflict. Harvard University Press. * L.J. Vanderbei : Linear Programming - Foundations and Extensions. 4th Edition, Springer. * Jorge Nocedal and Stephen J. Wright : Numerical Optimization. 2nd Edition, Springer.							
Prerequisites	Only Master students can take this course. Exchange students need to have obtained a BSc degree in Economics, International Business, Econometrics, or a related topic. Familiarity with the basic concepts of optimization and linear programming will be helpful. A solid basis in mathematics and calculus is also recommendable.							
Teaching methods	PBL / Lecture							
Assessment methods	Written Exam							
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 Busin	ess Research	n - No speciali	sation	Year 2 Free	Elective(s)		
	Master Busin	ess Research	n - Operations	Research	Year 1 Comp	oulsory Cours	e(s)	
	Master Econometrics and Operations Research Compulsory Course(s)							
	Master Economic and Financial Research - Year 1 Core Course(s) Econometrics							
	Master Economic and Financial Research - Year 1 Elective Course(s) Econometrics							
	Master Economic and Financial Research - Year 2 Elective Course(s) Econometrics							
	Master Economic and Financial Research - No Year 2 Elective Course(s) specialisation							
	SBE Exchange Master Master Exchange Courses							
	SBE Non De	gree Courses			Master Courses			