

## Course Descriptions None 2017-2018

Course Title	Game Theory																
Course Code	EBC4146																
ECTS Credits	6,5																
Assessment	Whole/Half Grades																
Period	<table border="1"> <thead> <tr> <th>Period</th> <th>Start</th> <th>End</th> <th>Mon</th> <th>Tue</th> <th>Wed</th> <th>Thu</th> <th>Fri</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>4-9-2017</td> <td>27-10-2017</td> <td>X</td> <td></td> <td>X</td> <td></td> <td></td> </tr> </tbody> </table>	Period	Start	End	Mon	Tue	Wed	Thu	Fri	1	4-9-2017	27-10-2017	X		X		
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1	4-9-2017	27-10-2017	X		X												
Level	Advanced																
Coordinator	Hans Peters For more information:h.peters@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	<p>Topics in optimization include duality theorems in LP, branch and bound and cutting plane algorithms in IP, and Kuhn-Tucker conditions for NLP.</p> <p>Topics in game theory and economics include computation of Nash equilibrium and refinements, selfish routing in networks and the price of anarchy, and non-emptiness of the core.</p>																
Literature	<p>The course will be based on chapters from standard textbooks plus additional readers.</p> <p>Recommended literature for background reading :</p> <p>Hans Peters : Game Theory : A Multi-Leveled Approach. Springer-Verlag.</p> <p>David Luenberger and Yinyu Ye : Linear and Nonlinear Programming.</p> <p>Stephen Boyd and Lieven Vandenberghe : Convex optimization. Cambridge University Press.</p> <p>Christos H. Papadimitriou and Kenneth Steiglitz : Combinatorial Optimization: Algorithms and Complexity.</p> <p>Laurence A. Wolsey and George L. Nemhauser : Integer and Combinatorial Optimization, John Wiley &amp; Sons.</p> <p>Sebastian Bubeck (2015) : Algorithms and complexity. Foundations and trends in machine learning 8 (231-358).</p> <p>Roger Myerson : Game Theory : Analysis of Conflict. Harvard University Press.</p>																
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 <a href="http://iwio-sbe.maastrichtuniversity.nl/rapporten.asp?referrer=codeUM">http://iwio-sbe.maastrichtuniversity.nl/rapporten.asp?referrer=codeUM</a>																
This course belongs to the following programme / specialisation	<table border="0"> <tr> <td>Master Business Research</td> <td>Free Electives</td> </tr> <tr> <td>Master Business Research Track OR</td> <td>Free Electives</td> </tr> <tr> <td>Master Economic and Financial Research Track Econometrics</td> <td>Economic Theory, Behaviour &amp; Computing</td> </tr> <tr> <td>Master Economic and Financial Research</td> <td>Economic Theory, Behaviour &amp; Computing</td> </tr> <tr> <td>SBE Exchange Master</td> <td>Master Exchange Courses</td> </tr> <tr> <td>SBE Non Degree Courses</td> <td>Master Courses</td> </tr> </table>	Master Business Research	Free Electives	Master Business Research Track OR	Free Electives	Master Economic and Financial Research Track Econometrics	Economic Theory, Behaviour & Computing	Master Economic and Financial Research	Economic Theory, Behaviour & Computing	SBE Exchange Master	Master Exchange Courses	SBE Non Degree Courses	Master Courses				
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