Course Descriptions None 2019-2020

Course Title	Mathematical Research Tools
Course Code	EBC4182
ECTS Credits	6,5
Assessment	None

Period

Period	Start	End	Mon	Tue	Wed	Thu	Fri
1	2-9-2019	25-10-2019		X		X	

Level	Advanced
Coordinator	Hans Peters For more information:h.peters@maastrichtuniversity.nl
Language of instruction	English
Goals	This course offers basic mathematical methods for economic research. The focus is on static and dynamic optimisation and on the underlying mathematics, necessary to understand and apply these optimisation methods. These tools are relevant for all specialisations within the Economic and Finance Research (EFR) master program.
Description	Multi-variable calculus, static optimisation methods in particular Lagrange and Kuhn-Tucker, connection with linear and non-linear programming, dynamic (discrete and non-discrete) optimisation methods (Bellman principle, calculus of variations, optimal control, Pontryagin maximum principle), basic elements of difference and differential equations and of dynamic systems.
Literature	Jehle, Geoffrey A. and Philip J. Reny : Advanced Microeconomic Theory (2nd edition). Sydsaetter, K., Hammond, P., Seierstad, A. and A. Strom : Further Mathematics for Economic Analysis (Financial Times / Prentice Hall, 2008).
Prerequisites	Basic level of mathematics (e.g. Sydsaetter et.al, Mathematics for Economic Analysis).
Teaching methods	PBL / Lecture / Assignment
Assessment methods	Participation / 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 Business Research - No specialisation	Year 2 Methodology Elective(s)
Master Business Research - Operations Research	Year 1 Elective Course(s)
Master Business Research - Operations Research	Year 2 Elective Course(s)
Master Economic and Financial Research - No specialisation	Year 1 Compulsory Course(s)