Course Descriptions NonDegree 2019-2020

Course Title	Dynamic Modelling and Dynamic Optimisation
Course Code	EBC2116
ECTS Credits	6,5
Assessment	Whole/Half Grades

Period								
Period	Start	End	Mon	Tue	Wed	Thu	Fri
4	3-2-2020	3-4-2020	X			X	

Level	Advanced
Coordinator	Ton Storcken, Hans de Graaff For more information:t.storcken@maastrichtuniversity.nl; h.degraaff@maastrichtuniversity.nl
Language of instruction	English
Goals	In this course the student will learn to analyse stability properties of equilibria of dynamic systems in qualitative terms, to apply the maximum principle to optimal control problems, draw phase diagrams with Mathematica and use these to analyse solutions of optimal control problems.
Description	Besides a great amount of static models in Economic Theory dynamic models are also frequently studied. These models can be found in various fields such as Macro and Micro Economics, Public Choice, Game Theory and Finance. First, dynamic models, in terms of systems of differential equations are studied with respect to stability. Next optimal control problems are solved by means of the maximum principle of Pontryagin. Applications range from optimal investment to optimal fishing and problems concerning environmental economics.
Literature	Léonard, D. and N. van Long, Optimal Control Theory and Static Optimization in Economics, Cambridge University Press, Cambridge, UK, 1992, ISBN 0-521-33746-1 Electronic Courseware for Mathematica.
Prerequisites	The student should be familiar with - linear differential equations, - non-linear optimisation, - standard calculus on functions of more than one variable. Exchange students need to follow a Bachelor in economics. An advanced level of English.
Teaching methods	PBL / Lecture / Assignment / Groupwork
Assessment methods	Final Paper / 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		
Bachelor Economics and Business Economics - Economics		Year 3 Quantitative Economics Elective(s)
Bachelor Economics and Business Economics - Emerging Markets		Year 3 Elective Course(s)
Bachelor Economics and Business Economics - Economics and Management of Information		Year 2+3 Quantitative Economics Elective(s)
Bachelor Economics and Business Economics - International Business Economics		Year 3 QE Elec(s) - Maj Accounting
Bachelor Economics and Business Economics - International Business Economics		Year 3 QE Elec(s) - Maj Finance
Bachelor Economics and Business Economics - International Business Economics		Year 3 QE Elec(s) - Maj Inf Mgmt
Bachelor Economics and Business Economics - International Business Economics		Year 3 QE Elec(s) - Maj Marketing
Bachelor Economics and Business Economics - International Business Economics		Year 3 QE Elec(s) - Maj Org
Bachelor Economics and Business Economics - International Business Economics		Year 3 QE Elec(s) - Maj SCM
Bachelor Economics and Business Economics - International Business Economics		Year 3 QE Elec(s) - Maj Strategy
Bachelor International Business - Emerging Markets		Year 3 Elective Course(s)
Bachelor International Business		Year 3 QE Elec(s) - Maj Accounting
Bachelor International Business		Year 3 QE Elec(s) - Maj Finance
Bachelor International Business		Year 3 QE Elec(s) - Maj Inf Mgmt
Bachelor International Business		Year 3 QE Elec(s) - Maj Marketing
Bachelor International Business		Year 3 QE Elec(s) - Maj Org
Bachelor International Business		Year 3 QE Elec(s) - Maj SCM
Bachelor International Business		Year 3 QE Elec(s) - Maj Strategy
SBE Exchange Bachelor		Bachelor Exchange Courses
SBE Exchange Master		Bachelor Exchange Courses
SBE Non Degree Courses		Bachelor Courses