# Course Descriptions None 2017-2018

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| Course Title | Dynamic Modelling and Dynamic Optimisation |
| Course Code | EBC2116 |
| ECTS Credits | 6,5 |
| Assessment | None |

Period

| Period | Start | End | Mon | Tue | Wed | Thu | Fri |
|---|---|---|---|---|---|---|---|
| 4 | 5-2-2018 | 6-4-2018 | X | | | X | |

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| 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,<br>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<br>Electronic Courseware for Mathematica. |
| Prerequisites | The student should be familiar with<br>- linear differential equations,<br>- non-linear optimisation,<br>- standard calculus on functions of more than one variable.<br><br>Exchange students need to follow a Bachelor in economics.<br>An advanced level of English. |
| Teaching methods | PBL / Lecture / Assignment / Groupwork |
| Assessment methods | Final Paper / 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

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| Bachelor Economics and Business Economics Specialisation Economics | QE Electives |
| Bachelor Economics and Business Economics Specialisation Emerging Markets | QE Electives |
| Bachelor Economics and Business Economics Specialisation Economics and Management of Information | QE Electives |
| Bachelor Economics and Business Economics Specialisation International Business Economics | QE Electives |
| Bachelor International Business | QE electives |
| SBE Exchange Bachelor | Bachelor Exchange Courses |
| SBE Exchange Master | Bachelor Exchange Courses |
| SBE Non Degree Courses | Bachelor Courses |