Course Descriptions None 2015-2016

Course Title	Operations Research
Course Code	EBC2106
ECTS Credits	6,5
Assessment	Whole/Half Grades

Period

Period	Start	End	Mon	Tue	Wed	Thu	Fri
4	1-2-2016	1-4-2016			X		X

Level	Advanced
Coordinator	Tjark Vredeveld For more information:t.vredeveld@maastrichtuniversity.nl
Language of instruction	English
Goals	Application of deterministic and stochastic techniques to theoretical and practical optimisation problems in OR.
Description	The course concentrates on algorithmic techniques to approach both theory and practice of problem solving in Operations Research. As a foundation, we start with an introduction to problem encoding and analysis of algorithms and computation times. The focus is then on classical problems from Combinatorial Optimisation, namely shortest path problems, minimum spanning trees, maximum flow and minimum cost flow problems and matching problems. For all problems, one or several algorithms will be discussed and analysed in-depth. Along the way, several other classical problems from Operations Research will be mentioned, such as colouring problems, scheduling problems, project management, and facility location. Finally, we study the foundations of stochastic processes and Markov Chains, with applications to the analysis of queues and queueing systems
Literature	"Network Flows" by Akuja, Magnanti, and Orlin (chapters 2-7, 9, 12, 13). In addition, several chapters of other textbooks in Combinatorial Optimiziation and Operations Research.
Prerequisites	Analysis, linear algebra, basic probability theory, linear programming (modelling and solving), C++. Exchange students need to be aware that very specific pre-knowledge is required for this course. A solid background in mathematics is necessary.
Teaching methods	PBL / Lecture / Assignment / Groupwork
Assessment methods	Final Paper / 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

Bachelor Econometrics and Operations Research	Year 2 Compulsory Courses
SBE Exchange Bachelor	Bachelor Exchange Courses
SBE Exchange Master	Bachelor Exchange Courses
SBE Non Degree Courses	Bachelor Courses