

## Course Descriptions NonDegree 2018-2019

Course Title Modelling and Solver Technology  
 Course Code EBC4051  
 ECTS Credits 6,5  
 Assessment Whole/Half Grades

Period	Period	Start	End	Mon	Tue	Wed	Thu	Fri
4	4	4-2-2019	5-4-2019		X		X	

Level Advanced  
 Coordinator Aida Abiad Monge For more information: [a.abiadmonge@maastrichtuniversity.nl](mailto:a.abiadmonge@maastrichtuniversity.nl)  
 Language of instruction English  
 Goals After this course, the student is able to model (hard) optimisation problems as mathematical programs and knows several techniques to solve these problems. Moreover, the student can use general purpose software tools to solve these problems.  
 Description This course is devoted to mathematical modelling of hard optimisation problems. We focus on integer programming techniques to solve these optimisation problems. During this course techniques as branch and bound, cutting planes and column generation will be discussed as well as the theory needed to understand these techniques. Furthermore, partially by using LP and ILP solvers, these techniques will be implemented in C++.  
 Literature Selected papers.  
 Lecture notes.  
 Recommended background literature : L.A. Wolsey, "Integer Programming", 1998, ISBN 0-471-28366-5.  
 Prerequisites Linear programming (including the simplex method), duality, basics in integer programming, combinatorial optimisation, graph theory, C++. Exchange students need to have obtained a Bachelor degree and an advanced level in mathematics.  
 An advanced level of English  
 Teaching methods PBL / Presentation / Lecture / Groupwork  
 Assessment methods Final Paper / Attendance / Participation  
 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	Methodology Electives
Master Business Research - Operations Research	Compulsory Courses
Master Business Research - Operations Research	Methodology Electives
Master Econometrics and Operations Research	Econometrics & OR Electives
Master Econometrics and Operations Research	Operations Research
SBE Exchange Master	Master Exchange Courses
SBE Non Degree Courses	Master Courses