

## Course Descriptions None 2018-2019

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

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

Level Advanced  
 Coordinator Aida Abiad Monge For more information: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>

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| 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              |