



FP7-PEOPLE-2009-IRSES:  
Project ID 246647

**Optimization and its Applications**  
in **Learning and Industry**  
**(OptALI)**

IRSES

**Tasks 2.1, 2.2, 2.3**

**Lectures**

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Participants: UniGoe  
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UOA  
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In this document we list the lectures which experienced researchers gave during within the framework of OptALI.

## 1 Lectures on Robustness

Researcher	Seconded from	Title of Lecture	Date	Place
Anita Schöbel	UNIGOE	Robust Optimization	01.02.11	UOA
Sven Krumke	UNIKL	Online Optimization	01.02.11	UOA
Matthias Ehrgott	UOA	Multiobjective Optimization for Robust Solutions in Practice	27.08.12	UNIGOE
Andrea Raith	UOA	Robust Bicriteria Paths - Robustness Concepts and Solution Methods	28.08.12	UNIGOE
Anita Schöbel	UNIGOE	Robust Optimization	30.08.12	UNIGOE
Jutta Geldermann	UNIGOE	Uncertainties in Decision Making in Production and Logistics	30.08.12	UNIGOE
Marie Schmidt	UNIGOE	Robust Timetable Information	30.08.12	UNIGOE
Marc Goerigk	UNIGOE	An Introduction to Robust Optimization	23.04.12	UC
Andrea Raith	UOA	Robust bicriteria optimisation	04.06.13	UNIGOE
Andrea Raith	UOA	Robust bicriteria optimisation	19.05.14	UNIKL
Anita Schöbel	UNIGOE	Concepts for robust bi-objective optimization	06.01.15	UC

## 2 Lectures on Multicriteria Optimization

Researcher	Secoded from	Title of Lecture	Date	Place
Matthias Ehrgott, Andrea Raith	UOA	Dealing with Multiple Objectives	18.02.11	UOA
Kenneth Kuhn	UC	Multicriteria Optimization Convective Weather and Air Transportation	07.06.11	UNIGOE
Kenneth Kuhn	UC	Multicriteria Air Traffic Flow Management	14.02.11	UNIGOE
Kenneth Kuhn	UC	Infrastructure Management Systems and Air Transportation Decision Support		UOA
Matthias Ehrgott	UOA	From MOCO to MOLP: A Journey in Multiobjective Optimisation	05.07.11	UNIGOE
Matthias Ehrgott	UOA	Dealing with Multiple Objectives	10.02.11	UOA
Matthias Ehrgott	UOA	Data Envelopment Analysis without Linear Programming	21.01.13	UNIKL
Horst W. Hamacher	UNIKL	Multi Objective Optimization: Representative Systems (and More)	25.03.14	UOA
Anita Schöbel	UNIGOE	Concepts for robust bi-objective optimization	06.01.15	UC
Andrea Raith	UOA	Column generation and the bi-objective simplex method	17.09.15	DTU
Andrea Raith	UOA	Column generation and the bi-objective simplex method	23.11.15	UNIKL

### 3 Lectures on Selected Topics in Integer Programming

Researcher	Seconded from	Title of Lecture	Date	Place
Anita Schöbel	UNIGOE	Integer Programming with Transport Applications	01.02.11	UOA
David Ryan	UOA	Set Partitioning Problems and Applications	16.02.11	UOA
Andrew Mason	UOA	A MIP Heuristic for the Regionalization Problem	8.12.11	DTU
Andrew Mason	UOA	Using Nested Column Generation & Generic Programming to solve Staff Scheduling Problems: Using Compile-time Customisation to create a Flexible C++ Engine for Staff Rostering	8.12.11	DTU
Andrew Mason	UOA	Open source linear/integer programming in Excel using COIN-OR's CBC engine	15.12.11	DTU
Andrew Mason	UOA	Building linear/integer programming models in Excel using SolverStudio	15.12.11	DTU
Sven Krumke	UNIKL	Timetabling and 2VPIs	06.07.11	UNIGOE
Sven Krumke	UNIKL	Optimization, Complexity and Soccer	02.55.11	UOA
David Ryan	UOA	It is Time to Enjoy the Best of Both Worlds	29.08.11	DTU
David Ryan	UOA	The Set Partitioning Optimization Model and its Application in Practical Scheduling Problems	June 11 (3 weeks)	DTU
Horst Hamacher	W. UNIKL	Operations Research Methods in the Planning, Control, and Adaptation of Evacuation Plans	24.02.12	UOA
Horst Hamacher	W. UNIKL	Operations Research Methods in the Planning, Control, and Adaptation of Evacuation Plans	06.03.12	UC

Researcher	Seconded from	Title of Lecture	Date	Place
David Ryan	UOA	It is Time to Enjoy the Best of Both Worlds	July 2012	DTU
David Ryan	UOA	Short Course Lectures on Set Partitioning Optimization and its Applications	July 2012	DTU
David Ryan	UOA	It is Time to Enjoy the Best of Both Worlds	15.05.12	UNIGOE
David Ryan	UOA	The Train Driver Disruption Recovery Problem - A Decision Support Framework and Solution Method	April 2012	UNIKL
Jesper Larsen & Richard Lusby	DTU	Column Generation in Industrial Applications	28.08.12	UNIGOE
Clemens Thielen	UNIKL	Algorithmic Game Theory and Applications	29.08.12	UNIGOE
Gert Lube	UNIGOE	Optimal Control of Convection Dominated Transport Problems	29.08.12	UNIGOE
Horst W. Hamacher	UNIKL	Evacuation Planning Using Combined Network Flow and Location Models	30.08.12	UNIGOE
Marc Goerigk	UNIGOE	Recovery Robustness with Metrics	31.08.12	UNIGOE
Jutta Geldermann	UNIGOE	Resource efficiency in interorganizational networks - quantitative planning approaches for renewable resources	19.03.13	UOA
Jesper Larsen	DTU	Solving a industrial waste collection problem using a hybrid column generation approach	4.12.13	UOA
Richard Lusby	DTU	A Column Generation Approach for Solving the Patient Admission Scheduling Problem	January 2014	UOA
Horst W. Hamacher	UNIKL	Integrated Algorithms for Evacuation Planning, Part I: Network Flows and Locational Planning	29.01.14	UC
Marc Goerigk	UNIKL	Integrated Algorithms for Evacuation Planning, Part II: Robust Optimization and Shortest Paths	05.02.14	UC

Researcher	Seconded from	Title of Lecture	Date	Place
Jesper Larsen	DTU	Rostering Ground Crew with Work Patterns	24.02.14	UOA
Horst Hamacher	UNIKL	Improved Box Representation of Pareto Sets and Application to Bicriteria Multi-commodity Network Flows	25.02.14	UOA
Marc Goerigk	UNIKL	Robust Evacuation Planning with Buses	25.02.14	UOA
Sabine Büttner	UNIKL	Graph Theory - Matchings	four weeks in March 14	UOA
Berit Dangaard Brouer	DTU	A matheuristic for liner shipping network design with transit times	18.02.15	UOA
Clemens Thielen	UNIKL	Optimization Problems with Minimum Quantity Constraints	03.03.15	UC
Sabine Büttner	UNIKL	Dealing with the Weather - The Canadian Tour Operator Problem on Paths	17.03.15	UC
Clemens Thielen	UNIKL	Optimization Problems with Minimum Quantity Constraints	18.03.15	UOA
Tad Takaoka	UC	Single Source Shortest Paths for All Flows with Integer Costs Model for Passenger Routing	06.09.15	UNIGOE
Sabine Büttner	UNIKL	Dealing with the Weather - The Canadian Tour Operator Problem on Paths	15.04.15	UC
Jesper Larsen	DTU	Solving a industrial waste collection problem using a hybrid column generation approach	04.12.15	UOA



## 4 Lectures related to other OptALI topics

Researcher	Secoded from	Title of Lecture	Date	Place
Andrea Raith	UOA	Mathematics for Computer Science Students	06./ 10./ 13./ 01.11	UNIGOE
Mark Milke	UC	Decision and Systems Research in Civil and Natural Resources Engineering	04.04.13	DTU
Jochen Schulz	UNIGOE	A scientist view on Python	11.02.14	UOA
Jochen Schulz	UNIGOE	Why functional programming is good ...when you like math	12.02.14	UOA
Juliane Manitz	UNIGOE	Network-based Source Detection: From Infectious Disease Spreading to Train Delay Propagation	20.08.14	UOA
Juliane Manitz	UNIGOE	Network-based Source Detection: From Infectious Disease Spreading to Train Delay Propagation	18.09.14	UC
Matthias Galster	UC	Optimization and network science in software engineering	01.12.14	UNIKL
Juliane Manitz	UNIGOE	A Statistical Perspective on the Analysis of Complex Network Data: The Example of Network-Based Source Detection	01.12.14	UC
Andrew Mason	UOA	Recent Developments in OpenSolver and SolverStudio: Julia/JUMP, .nl files and Non-Linear Models	01.06.15	DTU
Andrew Mason	UOA	OpenSolver, SolverStudio, and Optimisation at Maersk	23.06.15	DTU
Rupert Storey	UOA	Large Eddy Simulation of Turbine Loading and Performance in a Wind Farm	01.07.15	DTU
Oliver Sinnen	UOA	Being stubborn: developing optimal solution strategies for a scheduling problem despite its NP-hardness.	15.07.15	UNIGOE