Zurich University of Applied Sciences

School of Engineering

t.OR - Operations Research

Person responsible for the course:	Johanna Schönenberger-Deuel, scjo
Credits:	4
Valid for:	2009/2010
Last saved:	21.09.2010 14:40

Learning objectives:

This is an elective course.

In this course the students learn how to model real life optimization problems using mathematical methods. To this end numerous algorithms are discussed in detail and implemented, partly by the students themselves. The broad range of problems discussed should enable the students to solve related, real life problems on their own.

Course content:

Linear Programming:
- simplex algorithm
- transport problems
- duality theory

Integer and combinatorial optimization:
- solution principles
- heuristic solutions
- Branch-and-Bound-Procedures
- Knapsack-Problems
- Traveling-Salesman-Problems

Non-linear Programming (brief introduction)

Practical training:
- implementing the simplex algorithm, basic solutions
- Matlab tools used in linear programming
- programming the branch & bound method (for integer optimization)
- Matlab tools for non-linear programming
- simulation of operatonal proceses

Previous knowledge:

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Teaching method:

Type of lesson:	Number of lessons per week:
Lecture	14x(2L+2L)
Tutorial/Practicum	
Group teaching	
Block instruction	
Seminar	

Assessment:

According to the table or as specified in writing by the lecture at the beginning of the semester!

Number	Type	Weighting
1	End of term exam	2
	Exam during the semester	
1	Further assessments	1

Language of instruction:

German

Instruction material:

Notes on the lecture

Domschke, Drexl: Einführung in Operations Research, Springer Verlag

Comments:

OR is an elective course for third year students in the degree programmes System- und Unternehmensinformatik.