UNIVERSITY OF BORÅS

Operations Research
Operationsanalys

7.5 credits
7.5 högskolepoäng

Ladok Code: 41T16B
Version: 1.0
Established by: The Teaching Committee 2012-11-13
Valid from: Autumn 2012

Education Cycle: First cycle
Main Field of Study (Progressive Specialisation): Industrial Economics (G1F)
Disciplinary Domain: Technology
Prerequisites: The student shall meet the entry requirements for the degree of Bachelor of Science in Industrial Engineering/International Business Engineering.

- Recommended requirements

The course is based on knowledge acquired in Linear Algebra 7.5 ECTS or equivalent and Applied Mathematics 7.5 ECTS.
Subject Area: Industrial Engineering and Management
Grading Scale: ECTS-credits

Content

- Typical OR problems
- Linear programming
- The simplex method
- Duality and sensitivity analysis
- Transport problems
- Network analysis
- Revised Simplex Method
- Computer tools used for modelling and optimising linear problems

Learning Outcomes

Upon completion of the course, the student shall be able to:

- explain basic concepts within Operations Research
- describe problems modelled using basic OR methods such as linear programming, transport problems and network optimisation.
- model simple optimisation problems using linear programming

- solve linear programming problems using the simplex algorithm
- perform sensitivity analysis on solutions to linear programming models
- model transport and network problems using linear models
- decide upon optimal solutions to transport problems
- solve basic linear programming problems using modern software

Forms of Teaching

The teaching language is partly, or fully, English

Forms of Examination

The course will be examined through the following examination elements:

Written exam
Learning outcomes:
Credits: 4.5
Gradingscale: ECTS-credits

Learning outcomes:
Credits: 3
Gradingscale: ECTS-credits

Student rights and obligations at examination are in accordance with guidelines and rules for the University of Borås.

Literature and Other Teaching Materials

Student Influence and Evaluation

The head of department and teacher responsible for the course are responsible for ensuring that students are invited systematically and regularly to put forward their views on the course. The results of the evaluations will be reported back to the students and will form the basis for the future structure of the course.

Miscellaneous