

Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
IND 501	Linear Optimization	1	3	0	0	3	6

Prerequisites	
Admission Requirements	

Language of Instruction	English
Course Type	Compulsory
Course Level	Masters Degree
Objective	<p>This course introduces basic theoretical principles and algorithms of linear programming, which provide a foundation for the other mathematical programming concepts and techniques. Furthermore, the course also introduces several different types of mathematical models, which can be used to model real-life applications, and the softwares GAMS and CPLEX, which can be used to solve large-scale linear programming problems. The objectives of the course are determined as follows:</p> <ul style="list-style-type: none">• Introduce how to formulate mathematical models of the real-life applications• Enable students to apply the linear optimization algorithms efficiently• Enable students to use the softwares GAMS and CPLEX for large-scale linear optimization problems• Facilitate the understanding of the theory of the other mathematical programming techniques
Content	
References	<p>Bazaraa, M.S., Jarvis, J.J., Sherali, H.D., "Linear Programming and Network Flows", 4. Edition, Wiley, New Jersey, 2010</p> <p>Bertsimas, D., Tsitsiklis, J.N., "Introduction to Linear Optimization", Athena Scientific Series in Optimization and Neural Computation, Massachusetts, 1997</p> <p>Bazaraa, M.S., Sherali, H.D., "Nonlinear Programming: Theory and Algorithm", 3. Edition, Wiley, New Jersey, 2006</p> <p>Wolsey, L.A., "Integer Programming", Wiley, New Jersey, 1998</p> <p>GAMS Manual, downloadable from http://www.gams.com/</p>

Theory Topics

Week	Weekly Contents
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