2018 I. semester

Course title Operations Research

Course code: BPI 1112

Announcement semester 3

Credits 3

Weekly Contact Hours (elm.+gyak.) 2+2

Half-year requirement: term mark

Előfeltétel (tantárgyi kód) PMB1101

Lecturer Dr. Bajalinov Erik, associate professor

Course information

Aim: knowledge of main mathematical and software tools of operations research: linear and non-linear programming problems, methods, duality and sensitivity analysis.

Competencies: would be expected to demonstrate ability to formulate mathematical model for the given “real-world” optimization problem, solve it with a suitable OR software, interpret correctly the numeric results obtained and perform “what-if” analysis.

2. Contents

„Real-world” problems leading to Linear programming problem. Convex polyhedron and vertices. Simplex method. Sensitivity analysis. Duality. Transportation and assignment problems. Network problems. Non-linear programming problems. OR software tools (Excel-Solver, Lingo, CpLex, Gurobi, etc.)

Literature

1. Wayne L. Winston: *Operations Research, Applications and Algorithms* Aula, 4+ edition
2. Frederick S. Hiller, Gerald J. Lieberman: *Introduction to Operations Research*, McGraw-Hill, 1990 (5th Ed., or later).
3. H.P. Williams: *Model Building in Mathematical Programming*, Univ. of Southhampton, 1985 (2nd Ed., or later).