

Tárgytematika / Course Description Linear Optimization

GKNM_MSTA045

Tárgyfelelős neve /

Teacher's name: Dr. Hajba Tamás

Félév / Semester: 2024/25/1

Beszámolási forma /

Assesment: Vizsga

Tárgy heti óraszám /

Teaching hours(week): 2/2/0

Tárgy féléves óraszám /

Teaching hours(sem.): 0/0/0

OKTATÁS CÉLJA / AIM OF THE COURSE

To familiarize the students with the theory of linear optimization (simplex method, duality) and its application (currently used most efficient softwares, application areas).

TANTÁRGY TARTALMA / DESCRIPTION

1. LP problems. Graphical solution.
2. Duality. Complementary slackness.
3. The simplex method.
4. The two-phase simplex method.
5. Solving LP-s by using GAMS.
6. Multi objective linear programming problems.
7. Integer linear programming.
8. The transportation problem.

9. The assignment problem.

10. Network flows.

11. The permutation flow shop problem.

12. The traveling salesman problem.

SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESSMENT'S METHOD

Homework assignment: maximum 40 points. Instructors signature: minimum 20 points is required.

Oral online exam: maximum 60 points. Calculation of the final grade: the points of the homework assignments and the points of the exam are summed up.

0-50 points: fail

51-62 points: satisfactory

63-74 points: average

75-86 points: good

87-100 points: excellent

KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL

Tamás Hajba: Linear programming

W. L. Winston. Operations research. Applications and algorithms. Fourth Edition. Thomson. (2004)

AJÁNLOTT IRODALOM / RECOMMENDED MATERIAL