

Linear Programming

BMETE93MM01

3/1/0/v/5

Forms of the assessment in the semester:

- **compulsory:** two midterm exams, four quizzes,
- **optional:** homework problems, computer programming

Form of the assessment in the exam period:

- (conditional) oral or written exam

Description	Maximal points
The first midterm exam: linear algebra, linear equations, linear inequalities, pivot algorithms, linear programming duality theory, full Newton-step primal-dual interior point method with logarithmic barrier function.	100
The second midterm exam: theory and algorithms of interior point methods for linear programming problems.	100
Quizzes: four, each 20-20 minutes long quizzes will be from the last two weeks topics.	15
Homework problems: From all parts of the lecture there will be set optional homework problems. Homework problems of a given two week's period can be submitted in writing on the first following practice. For every well-solved problem 1 point can be obtained.	10
Computer programming task: During the semester several algorithms for solving feasibility or linear programming problems will be presented. These algorithms can be implemented, tested and computational performance of the implementation will be shown on the lectures during the last week of the semester.	15

- Participation on practical parts of the course (exercises) is obligatory. The participation on lectures is strongly recommended.
- Students can miss up to 30% of the practical parts of the course (exercises) with medical certificate or written (e-mail) explanation of the reason of missing the exercise. (Four hours exercises in total can be missed.)
- The student obtains signature for this course if satisfies the following conditions: pass the first midterm exam and participate on at least 70% of the exercises. Passing rate of the midterm exam is at least 41 points out of 100.
- The first midterm exam can be repeated once during the semester. The reseated first midterm exam should not be scheduled before the week 11 of the semester.
- Student can seat for the second midterm exam only if the first midterm exam passed successfully. The second midterm exam could not be scheduled before the week 11 of the semester.
- The quizzes will be written on the exercises. It will be considered the best three quizzes out of four. There is no reseated for the quizzes.

- If a student successfully pass both midterm exams and on the grading scale reaches at least 61 point out of 100 then a grade according to the grading scale can be offered. The offered grade can be improved on an oral exam during the exam period. Those students who successfully passed both midterm exam during the semester but obtained less than 61 points out of 100 should prove their knowledge on an oral exam.
- Students that got signature from this course but did not pass successfully the second midterm exam should reseat for the second midterm exam in the exam period.
- The offered grade (OG) can be computed using the points obtained on the two midterm exams (pME1, pME2), on the best three quizzes (pQ), from the homework problems (pHWP) and from the computer programming task (pCPT) using the following formula:

$$OG = 0.45 * pME1 + 0.4 * pME2 + pQ + pHWP + pCPT$$

Grading scale:

Classification levels	Grades
0 – 40	insufficient (1)
41 – 60	sufficient (2)
61 – 75	satisfactory (3)
76 – 90	good (4)
91 –	excellent (5)

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