The Hebrew University of Jerusalem

Syllabus

INTRO. TO OPERATIONS RES.-DETERMINISTIC MODELS - 52530

Last update 18-03-2018

HU Credits: 3

Degree/Cycle: 1st degree (Bachelor)

Responsible Department: statistics

Academic year: 0

Semester: 2nd Semester

Teaching Languages: Hebrew

Campus: Mt. Scopus

Course/Module Coordinator: Moshe Haviv

Coordinator Email: moshe.haviv@gmail.com

Coordinator Office Hours: Monday 9:30-10:15

Teaching Staff:
  Prof Moshe Haviv

Course/Module description:
  Linear programming - formulation, graphical solution, the simplex method, solution with a computer software, duality and sensitivity analysis. Transportation problems. Dynammic programming - formulation, recursions and the optimality principle. Project planning, Zero-sum games. Network flow: maximal flow, minimal cut, minimal spanning trees, shortest path problem. Inventory theory - economic order quantity with and without backordering.

Course/Module aims:
  Formulation of problems as mathematical models and solving them. Attention will be given to the understanding and application of algorithms for solving linear programms and flow in netwroks.

Learning outcomes - On successful completion of this module, students should be able to:
  Formulation of problems as mathematical models and solving them. Understanding algorithms and how to apply them. Internalizing the principles of dynamic programming.

Attendance requirements(%):

Teaching arrangement and method of instruction: Lectures

Course/Module Content:
  Linear programming - formulation, graphical solution, the simplex method, solution with a computer software, duality and sensitivity analysis. Transportation problems. Dynammic programming - formulation, recursions and the optimality principle. Project planning, Zero-sum games. Network flow: maximal flow, minimal cut, minimal spanning trees, shortest path problem. Inventory theory - economic order quantity with and without backordering.

Required Reading:
 There is no complasory reading. A detailed list of recommending reading will be given.

Additional Reading Material:

Course/Module evaluation:
End of year written/oral examination 100 %
Presentation 0 %
Participation in Tutorials 0 %
Project work 0 %
Assignments 0 %
Reports 0 %
Research project 0 %
Quizzes 0 %
Other 0 %

Additional information: