



The Hebrew University of Jerusalem

Syllabus

OPTIMIZATION METHODS IN ECONOMICS - 71985

Last update 07-09-2015

HU Credits: 3

Degree/Cycle: 2nd degree (Master)

Responsible Department: environmental economics & management

Academic year: 0

Semester: 1st Semester

Teaching Languages: Hebrew

Campus: Rehovot

Course/Module Coordinator: judith rivlin

Coordinator Email: judith.rivlin@mail.huji.ac.il

Coordinator Office Hours: Wednesday 14:00-15:00

Teaching Staff:

Dr. Judith Rivlin

Course/Module description:

Optimization without constraints; Convexity; Nonlinear Programming; Kuhn-Tucker Conditions; Numerical Methods for Optimization.

Course/Module aims:

To introduce unconstrained and constrained optimization problems. To define what is nonlinear programming . To present analytical solutions including first and second order conditions and numerical solutions to those problems.

Learning outcomes - On successful completion of this module, students should be able to:

To present an economical problem as an optimization problem or as a nonlinear programming problem
Solve it analytically or numerically .

Attendance requirements(%):

100

Teaching arrangement and method of instruction: lectures and exercises

Course/Module Content:

Optimization without constraints; Convexity; Numerical Solution for an Optimization Problem: Newton's Method, The Method of Steepest Descent; Lagrange Multipliers; Kuhn Tucker Theorem for Nonlinear Programming; Numerical Solution for Nonlinear Programming-The Penalty method; The Envelope theorem.

Required Reading:

שיטות אופטימיזציה בכלכלה חוברת מלווה לקורס 71985
ערכה דר' יהודית ריבלין
רחובות תשע"ו

Additional Reading Material:

A.L. Peressini, F.E. Sullivan, J.J. Uhl, Jr.
The Mathematics of Nonlinear Programming.

Chiang Alpha C.

Fundamental Methods of Mathematical Economics.

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:

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