ESI 6492/13D4 – Global Optimization

Spring 2015

SYLLABUS

Instructor: Distinguished Professor Panos M. Pardalos, 303 Weil Hall, pardalos@ufl.edu, http://www.ise.ufl.edu/pardalos/

Class: Monday and Wednesday 3:00 PM – 4:55 PM (8-9 periods) in 0238 Weil Hall

Office hours: By appointment

Course material: R. Horst, P.M. Pardalos and N.V. Thoai, "Introduction to Global Optimization", Kluwer Academic Publishers, 2001, ISBN: 0-7923-6756-1 (2nd edition).

Additional references: Selected papers published in the Journal of Global Optimization will be discussed in the class or given to students for study and analysis: www.springeronline.com/journal/10898.

Course description: Global optimization problems appear in a wide range of applications in operations research, economics, statistics, medicine, engineering and computer sciences. In this course we introduce the student to the main concepts and techniques of global optimization. Topics to be covered include: Properties of Nonconvex Functions, Convex Envelopes, Duality, Complexity, Applications and Software Issues, Algorithms for Quadratic Programming, Concave Minimization, D.C. Programming, Lipschitz Optimization, Nonconvex Network Flow Problems and Decomposition Algorithms.

Prerequisites: Linear and Nonlinear Programming, or any equivalent.

Grading: Grading will be based on homework (30%), exams (60%) and class participation (10%).