

# ESI 6492/13B5 – Global Optimization

Fall 2012

SYLLABUS

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

**Class:** Tuesdays 5:10 PM – 7:05 PM (10-11 periods) and Thursdays 5:10 – 7:05 PM (10-11 periods) in 238 Weil Hall

**Office hours:** Mondays and Wednesdays 10:00 AM - 12:00 AM or by appointment

**Teaching assistant and office hours:** Vladimir Stozhkov, Wednesdays and Fridays 1:00 – 2:50 PM or by appointment (401 Weil Hall), vstozhkov@ufl.edu

**Webpage:** The webpage of the class is <https://elearning2.courses.ufl.edu/portal/site/UFL-ESI6492-12604-82012>

**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](http://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, Decomposition Algorithms.

**Prerequisites:** Linear and Nonlinear Programming, or any equivalent.

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