Applications of Optimization in Engineering Design
INDE 516 / AMATH 510
Spring 2009

Class:	Mon, Wed, 2:30-3:50, SWS 036
Instructor:	Prof. Zelda Zabinsky, 543-4607, MEB G8, zelda@u.washington.edu
Office Hours:	Mon, Wed 4:00-5:00 pm and by appointment
Optional Text:	Zabinsky's book, *Stochastic Adaptive Search for Global Optimization*
Web site:	http://courses.washington.edu/inde510/510
Grading:	Homework 1 is 30%, Homework 2 is 30%, Final Project is 40% Consistent participation may raise final grade

Tentative Schedule

M	March 30	(1)	Introduction
W	April 1	(2)	Formulation Issues
M	April 6	(3)	Overview of Random Search
W	8	(4)	Grid/Pure Random Search/Pure Adaptive Search
M	April 13	(5)	HAS/AAS/IHR/Simulated Annealing w/ Hit-and-Run
W	15	(6)	**Homework 1 Presentations – Application formulations**
M	April 20	(7)	Multi-start, Clustering Methods
W	22	(8)	Comparisons of Algorithms (SA, GA, Tabu)
M	April 27	(9)	Complexity Issues, "No Free Lunch" Theorem
W	29	(10)	Computational Comparisons
M	May 4	(11)	Guest Lecturer (Hongrui Liu)
W	6	(12)	Covering (Branch and Bound), Interval and Lipschitz Methods
M	May 11	(13)	**Homework 2 Presentations – Global optimization alg.** 1:Aakashi, Caroline, Trond; 2:Chris, Pengbo; 3:Kuowei, Lin, Mingang
W	13	(14)	**Homework 2 Presentations – Global optimization alg.** 4:Lihui, Steven; 5:Trevor, Wenjuan
M	May 18	(15)	Cross-entropy and Model Reference Adaptive Search
W	20	(16)	Stopping Criterion
M	May 25	(17)	MEMORIAL DAY VACATION
W	27	(18)	Ordinal Optimization
M	June 1	(19)	work on projects
W	June 3	(20)	work on projects

Tues. June 9 FINAL EXAM 2:30-4:20 **Project Presentations**
Thurs. June 11 (4:30 pm in my mailbox in MEB G6) **Final Paper Due**