Fall 2013

Deterministic Optimization and Design - University of California, Davis

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ECI 153 **Deterministic Optimization and Design** Fall 2013

MW 4-6pm   1060 Bainer Hall

Instructors	Office	Office Hours
Instructor: Jay Lund	Watershed Sciences	MW 3-4, by appointment, jrlund@ucdavis.edu
TA: Rui Hui	Watershed Sciences	TBA

Date	Topic	Reading/Assignment
Sept.30	Systems Analysis/Problem Formulation	Liebman 1989
Oct. 2	Objectives, Constraints, & Calculus	Chapters 1, 2, 3 (Rardin text)
7	Lagrange Multipliers	Chapters 13.1-13.4, 14.1-14.4
9	Lagrange Multipliers & Math. Programming	**HW 1 due** [Rui Hui; Lund gone]
14	Linear Programming (LP)	Chapter 4
16	Simplex Method	**HW 2 due**
21	Simplex Method	Chapter 5
23	Sensitivity Analysis	Chapter 6, **HW 3 due**
28	LP Derivation/Duality	Chapter 7
30	Sensitivity Analysis & LP Applications	**Project 1 due** [Rui Hui; Lund gone]
Nov. 4	LP Applications	Chapter 10
6	LP Enhancements & Applications	**Project 2 due**
11	*HOLIDAY*	
13	Integer Programming & Applications	Chapters 11, 12 **HW 4 due**
18	**MID-TERM** (on material thru 7 Nov.)	
20	Dynamic Programming (DP)	Chapter 9
25	Dynamic Programming	
27	Non-Linear Programming	Chapters 8, 13.5-13.8, 14.5-14.9 **HW 5 due**
Dec. 2	Genetic Algorithms	Chapter 12.7, 12.8
4	Slack and Review	**Project 3 due**

Grading, approximately:		
Homework: 15%	Mid-Term:	20%
Projects: 30%	Final:	35%

The final exam is scheduled for Friday, December 13, 3:30-5:30pm (Oh, lucky day! Study extra!)
Text: Class notes, Rardin *Optimization in Operations Research*, or look at Hillier & Lieberman's *Introduction to Operations Research*, any edition.
Course web site: http://cee.engr.ucdavis.edu/faculty/lund/Classes/ECI153/ECI153.html
Textbook web site: http://comp.uark.edu/~rrardin/oorbook/