Class schedule: MECHENG/MFG 555 - Design Optimization, Winter 2015

#	Date	Topic	Notes
1	7-Jan	Course logistics; Introduction to optimal design (Ch. 1)	HW1 in
2	12-Jan	Optimization problem formulation (Ch. 1)	
3	14-Jan	Constraints, feasibility, boundedness, activity (Ch. 1) ; Monotonicity and example (Ch. 3)	HW1 due
4	19-Jan	Martin Luther King, Jr. Day. No Regular Classes.	
5	21-Jan	Monotonicity and example (Ch. 3)	HW2 (Ch. 3,4) in
6	26-Jan	Unconstrained Optimization (Ch. 4): FONC, SOSC, Convexity	Proposal due
7	28-Jan	Unconstrained Optimization (Ch. 4): Gradient/Newton, examples	
8	2-Feb	Stabilization and Trust Regions (Ch. 4)	
9	4-Feb	Review Ch. 3, 4	HW2 due
10	9-Feb	Mid-term exam 1	
11	11-Feb	DOEs, metamodeling, least squares (Ch.2)	HW3 (Ch.2) in
12	16-Feb	Neural Nets, Kriging (Ch.2)	
13	18-Feb	Neural Nets, Kriging (Ch.2)	
14	23-Feb	Derivative-free optimization	HW3 due
15	25-Feb	Derivative-free optimization	Progress report due
	2-Mar	SPRING BREAK	
	4-Mar	SPRING BREAK	
16	9-Mar	Constrained Optimization (Ch. 5): Reduced gradient; Lagrangian; FONC	HW4 (Ch.5) in
17	11-Mar	Constrained Optimization (Ch. 5): KKT conditions	
18	16-Mar	Constrained Optimization (Ch. 5): Scaling, KKT geometry, sensitivity analysis	
19	18-Mar	Constrained Optimization (Ch. 5): GRG	
20	23-Mar	Quasi-Newton methods; inexact line search (Ch. 7)	HW4 due / HW5 (Ch.7) in
21	25-Mar	Active set strategies; penalty methods; Augmented Lagrangian (Ch. 7)	
22	30-Mar	SQP	
23	1-Apr	SQP	
24	6-Apr	Review Ch. 5, 7	HW5 due
25	8-Apr	Mid-term exam 2	
26	13-Apr	Invited talk	
27	15-Apr	Project presentations	
28	20-Apr	Project presentations	Final report due on April 21