Course plan and schedule for the course *version 2019-04-10*

Linear and integer optimization with applications, MMG631/MVE165, Lp4 2019

Week	Day	Date	Start	End	Type	No	Contents	Literature/Exercises
w 13	Tuesday	2019-03-26	10:00	11:45	Lecture	#1	Introduction; course map; modelling optimization applications; graphic solution	Chapters in (i): 1, 2.1–5, 3
	Wednesday	2019-03-27	08:00	09:45	Problem solving	1	Exercises on linear optimization modelling	Exercises in (ii): see the homepage
	Thursday	2019-03-28	10:00	11:45				
	Wednesday	2019-03-27	13:15	15:00	Lecture	#2a	Julia/JuMP and optimization solvers; computer exercise on linear optimization (Edvin Åblad)	
						#2b	Supply chain (Assignment 1) (Edvin Åblad)	
	Wednesday	2019-03-27	15:15	17:00	Computers booked			
	Friday	2019-03-29	10:00	11:45	Lecture	#3	Convexity; basic feasible solutions; change of basis	Chapters in (i): 2.4, 4.1–4, (7.1), 4.8
	Friday	2019-03-29	13:15	15:00	Computers booked			
w 14	Monday	2019-04-01	13:15	15:00	Computers booked			
	Tuesday	2019-04-02	10:00	11:45	Lecture	#4	Linear programming: the simplex method; degeneracy; unbounded solution; infeasibility; starting solutions	Chapters in (i): 4.5–10
	Wednesday	2019-04-03	08:00	09:45	Problem solving	2	Exercises on linear optimization theory and algorithms	Exercises in (ii): see the homepage
	Thursday	2019-04-04	10:00	11:45				
	Wednesday	2019-04-03	13:15	15:00	Lecture	#5	Linear programming duality; economic interpretation	Chapters in (i): 6, (7.2–5)
	Wednesday	2019-04-03	15:15	17:00	Computers booked			
	Friday	2019-04-05	10:00	11:45	Lecture	#6	Linear programming: post-optimal and sensitivity analysis	5.1–5, (5.6)
w 15	Monday	2019-04-08	13:15	15:00	Computers booked			
	Tuesday	2019-04-09	10:00	11:45	Lecture	#7	Discrete optimization models and applications; complexity	Chapters in (i): 13, 2.6
	Wednesday	2019-04-10	10:00	11:45	Problem solving	3	Exercises on linear optimization duality and sensitivity analysis	Exercises in (ii): see the homepage
	Thursday	2019-04-11	10:00	11:45				
	Wednesday	2019-04-10	13:15	17:00	Computers booked			
	Wednesday	*2019-04-10*		*23:55*			*DEADLINE Assignment 1*	
	Friday	2019-04-12	10:00	11:45	Lecture	#8a	Theory and algorithms for discrete optimization models	Chapters in (i): 14.1–3, 15.1–3
						#8b	Maintenance scheduling optimization (Assignment 2)	
w 16	Monday	2019-04-15	13:15	15:00	Computers booked			
	Tuesday	2019-04-16	10:00	11:45	Lecture	#9	Discrete optimization: theory and algorithms	Chapters in (i): 14.4–5, (14.6), 16.1–2, 17.1–2, (17.3–4) 13.10–11, 15.4, (15.5)
	Wednesday	2019-04-17	10:00	11:45	Problem solving	4	Exercises on integer linear optimization modelling and algorithms	Exercises in (ii): see the homepage
	Wednesday	2019-04-17	13:15	17:00	Computers booked			
Thursday w 16 - Wednesday w 18					Easter break, re-exams, Valborg and May1			
w 18	Thursday	2019-05-02	10:00	11:45	Problem solving	4	Exercises on integer linear optimization modelling and algorithms	Exercises in (ii): see the homepage
	Friday	2019-05-03	10:00	11:45	Lecture	#10	Combinatorial optimization theory and algorithms	Chapters in (i): 16, 8.3
w 19	Monday	2019-05-06	13:15	15:00	Computers booked			
	Tuesday	2019-05-07	10:00	11:45	Lecture	#11	Network optimization: Shortest paths, dynamic programming, linear programming formulations of flows	Chapters in (i):, 8.1–2, 8.4, (8.5), 18.1–5, (18.6–7), 13.5
	Wednesday	2019-05-08	10:00	11:45	Problem solving	5	Exercises on integer linear optimization theory and algorithms	Exercises in (ii): see the homepage
	Thursday	2019-05-09	10:00	11:45				
	Wednesday	2019-05-08	13:15	17:00	Computers booked			
	Friday	*2019-05-10*		*09:30*			*DEADLINE Assignment 2 – IN THE MORNING!*	
			12:00	*17:00*			*DEADLINE Assignment 2-opposition – SUBMISSION FOR PEER REVIEW DURING THE DAY!*	
	Friday	2019-05-10	10:00	11:45	Lecture	#12	Linear programming formulations and algorithms for minimum cost network flows	Chapters in (i): 8.6–7
w 20	Monday	2019-05-13	13:15	15:00	Computers booked			
	Tuesday	2019-05-14	10:00	11:45	Lecture	#13	Multi-objective optimization	(iii): Hand-outs
	Tuesday	*2019-05-14*		*23:55*			*DEADLINE Opposition (peer review) on Assignment 2*	
	Wednesday	2019-05-15	10:00	11:45	Problem solving	6	Exercises on network flows	Exercises in (ii): see the homepage
	Thursday	2019-05-16	10:00	11:45				
	Wednesday	2019-05-15	13:15	17:00	Computers booked			
	Friday	2019-05-17	10:00	11:45	Lecture	#14	Overview of non-linear optimization	Chapters in (i): 2.5.1, 9–12
w 21	Monday	2019-05-20	13:15	15:00	Computers booked			
	Wednesday	2019-05-22	10:00	11:45	Problem solving	7	Exercises on non-linear optimization	Exercises in (ii): see the homepage
	Thursday	2019-05-23	10:00	11:45				
	Wednesday	2019-05-22	13:15	17:00	Computers booked			
	Friday	*2019-05-24*		*23:55*			*DEADLINE Assignment 3*	
w 22	Monday	2019-05-27	09:45	11:45	Presentations - preliminary schedule		Students' presentations of Assignment 3 – a specific schedule will be posted	
	Monday	2019-05-27	13:00	15:00				
	Monday	2019-05-27	15:15	17:15				
	Tuesday	2019-05-28	09:45	11:45				
	Tuesday	2019-05-28	13:00	15:00				
	Wednesday	2019-05-29	09:45	11:45				