GEOMETRIC FUNCTION THEORY
GRADUATE COURSE, FALL 2020

ALAN SOLA AND FREDRIK VIKLUND

Tentative schedule

Lecture	Topics	Section
August 28	Half-plane and disk; Fatou's theorem and maximal functions	I.1, I.2
September 4	Fatou's theorem (cont'd); Carathéodory's theorem	I.2, I.3
September 11	Distortion and hyperbolic metric	I.4
September 18	Multiply connected domains; Green functions and Poisson kernels	II.1, II.2
	Homework 1 due	
September 25	Green functions and Poisson kernels (cont'd)	II.2, II.3
October 2	Boundary smoothness	II. 4
October 9	Capacity; Logarithmic potentials	III.1, III.2
October 16	Energy integral; Equilibrium distribution	III.3, III.4
	Homework 2	
October 23	Polar sets; Estimates on harmonic measure	III.8, III.9
November 6	Definition of extremal distance; uniqueness of extremal metrics	IV.1, IV.2
November 13	Extremal length	IV.3, IV. 4
	Homework 3	
November 20	Extremal length and harmonic measure	IV.5, IV. 6
November 27	More on extremal length	TBA
December 4	Quasiconformal maps I (Michael Benedicks)	Lecture
	Homework 4 due	
December 11	Quasiconformal maps II (Benedicks)	Notes
December	**Oral examinations**	

Department of Mathematics, Stockholm University, 106 91 Stockholm, Sweden.
Email address: `sola@math.su.se`

Department of Mathematics, KTH, 100 44 Stockholm, Sweden.
Email address: `frejo@math.kth.se`