

TENTATIVE COURSE SCHEDULE

Class Date	Topic	References	Presenters
1 Sept. 22	Introduction	Bühlmann and van de Geer, Sec. 2.1-2.4.1.1 Bühlmann and van de Geer: Sec. 6.1, 6.2 Zhao and Yu (2006)	Horowitz Lecture 1a.pdf Download Lecture 1a.pdf
2 Sept. 27	Theory and Properties of the LASSO	Knight and Fu (2000) Horowitz and Huang (2013) Belloni, Chernozhukov, and Hansen (2013) Zou (2006) Bühlmann and van de Geer, Sec. 2.8, 2.9, 4.1, 4.2 Horowitz and Huang (2013)	Horowitz Lecture 2.pdf Download Lecture 2.pdf
3 Sept. 29	Variants of the LASSO	Zou (2006) Belloni, Chernozhukov, and Hansen (2014) Wüthrich and Zhu (2021)	Horowitz Lecture 3.pdf Download Lecture 3.pdf
4 Oct. 4	Other Penalty Functions	Fan and Li (2001), Horowitz and Huang (2013), Zhang (2010)	Horowitz Lecture 4.pdf Download Lecture 4.pdf

5	Oct 6	Approximate Sparsity	Huang and Zhang (2008) Horowitz and Huang (2013)	Horowitz Lecture 5.pdf Download Lecture 5.pdf
6	Oct. 11	LASSO Computation	Efron et al. 2004; Friedman et al. 2007	Berrutti Berrutti Slides.pdf Download Berrutti Slides.pdf
7	Oct. 13	Square root LASSO	Belloni, Chernozhukov, and Wang (2011)	Download Fedchenko slides.pdf
8	Oct. 18	Empirical Choice of the Penalization Parameter	Chetverikov, Liao, and Chernozhukov (2021); Lei, J. (2020); Wang (2007); Wang, Li, and Leng (2009); Yang (2007)	Horowitz Lecture 8.pdf Download Lecture 8.pdf
9	Oct. 20	BIC Method for Choice of the Penalization Parameter	Wang, Li, and Leng (2009)	Crippa, Li slides_crippa_li.pdf Download slides_crippa_li.pdf
10	Oct. 25	Sure Independence Screening	Fan and Lv (2008)	Horowitz Lecture 10.pdf Download Lecture 10.pdf
11	Oct. 27	SCAD Computation	Breheeny and Huang (2011), Fan and Li (2001)	Huang Shuyan Slides.pdf Download Shuyan Slides.pdf
12	Nov. 1	Penalized Maximum Likelihood Estimation	Fan and Li (2001) Fan and Peng (2004) Horowitz and Nesheim (2021)	Horowitz Lecture 12.pdf Download Lecture 12.pdf

13	Nov. 3	Thresholded SCAD and Rate of Convergence to True Model	Notes for Lecture 13	Horowitz Lecture 13.pdf Download Lecture 13.pdf
14	Nov. 8	Approximate Sparsity and the Beta-Min Condition	Pötscher and Leeb (2009).	Horowitz Lecture 14.pdf Download Lecture 14.pdf
15	Nov. 10	Application of Double Selection	Belloni, Chernozhukov, and Hansen (2014)	Nunes, Ruzzante Fava Ruzzante Slides.pdf Download Fava_Ruzzante_Slides.pdf
16	Nov. 15	Nonparametric Additive Models	Huang, Horowitz, and Wei (2010) Horowitz and Huang (2013)	Horowitz Lecture 16.pdf Download Lecture 16.pdf
17	Nov. 17	High Dimensional Instrumental Variables Estimation	Fan and Liao (2014) Gold, Lederer, and Tao (2020) Hall (1992) Horowitz (2001, 2019)	Horowitz Lecture 17.pdf Download Lecture 17.pdf
18	Nov. 22	Inference and the Bootstrap	Mammen (1992) Chatterjee and Lahiri (2010, 2011, 2013) Zhang and Chen (2017)	Horowitz Lecture 18.pdf Download Lecture 18.pdf
19	Nov. 29	Inference	Knight and Fu (2000)	Fu Fu Slides.pdf Download Fu Slides.pdf
20	Dec. 1	Inference and the Bootstrap	Knight and Fu (2000)	Horowitz Lecture 20.pdf Download Lecture 20.pdf

Chatterjee and Lahiri (2010,
2011, 2013)

Zhang and Cheng (2017)