University of British Columbia

STAT 460/560 - STATISTICAL INFERENCE I
2011/2012, TERM I

Course description: A detailed theoretical development: statistical models, exponential families, sufficiency, completeness, and detailed properties of point estimation. Intended for Honours and MSc students.

Pre-requisites: MATH 320, STAT 305 is recommended.

Textbook: Casella, G. and Berger R.L. (2001). Statistical Inference. Second Edition. Duxbury Advanced Series.

Instructor: Ruben Zamar, LSK 331, ruben@stat.ubc.ca

Website: http://www.stat.ubc.ca/~ruben/website/

References:
Hogg, McKean and Craig (2005). Introduction to Mathematical Statistics. Prentice Hall.
Cox and Hinkley (1974). Theoretical Statistics. Chapman and Hall.
J. Shao (1998). Mathematical Statistics. Springer-Verlag.
E.L. Lehmann (1983) Theory of Point Estimation. Wiley/Wadsworth.
C.R.Rao(1980). Linear Statistical Inference and its Applications. Wiley.

Tentative topics:

1. Probability review (Chapter 1-4; two weeks).

2. Sampling from normal distributions. (Chapter 5; one week).

3. Order statistics (Chapter 5, one week)

4. Convergence and asymptotic approximation concepts (Chapter 5; one week). Midterm cutoff point).

5. Point Estimation. MLE and EM algorithm (Chapter 6-7; three weeks).

6. Robustness. (one week)

7. Bayesian methods (Chapter 7 one week).