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Students requiring accommodations as a result of a disability, must contact the Centre for Students with Disabilities 778-782-3121 or csdo@sfu.ca

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Instructor: [Dr. Jiguo Cao](#)

Textbook:

Statistical Inference, 2nd Edition, Casella / Berger, Thomas/Brooks Cole

Calendar Description:

Advanced mathematical statistics. A survey of basic concepts in point estimation, interval estimation and hypothesis testing. Principles of inference.

Outline:

Distribution theory, methods for construction of tests, estimation and confidence intervals with special attention to likelihood methods. Properties of the procedures including large sample theory.

1. Review of probability and distribution theory. Conditional probability, marginal and conditional distributions, independence. Expectation, moments and transforms.
2. Distributions of functions of random variables. Bivariate and multivariate normal.
3. Approximate distribution theory: central limit theorem, delta method, saddlepoint methods, Monte Carlo.
4. Likelihood methods of inference. Multi parameter likelihoods, maximum relative likelihood, likelihood ratio