

University of Manitoba
Department of Statistics

STAT 7080 A01, CRN 21525
Advanced Statistical Inference
Second Term, 2009 – 2010

Instructor	Dr. Xikui Wang Office: 321 Machray Hall (Phone: 474 – 6275) E-mail: xikui_wang@umanitoba.ca								
Office Hours	Tuesdays and Wednesday 10:00 am – 11:30 am, or by appointment								
Course WebCT	Teaching materials, if any, are posted on the university ANGEL website								
General description	<p>Selected topics from recent developments in parametric and/or non-parametric statistical inference.</p> <p>Topics are focused on asymptotic methods for both parametric and non-parametric statistical inference and include (but not limited to): modes of stochastic convergence, stochastic o and O notations, Slutsky theorem, Sverdrup theorem, Cramer-Wold device, Delta method, law of large numbers (brief), central limit theorems (brief), law of iterated logarithm (brief), asymptotic distributions of statistics, asymptotic estimation and hypothesis testing, consistency, asymptotic (relative) efficiency, Asymptotic likelihood ratio, asymptotic Bayesian analysis, and more.</p>								
Prerequisites	Consent of instructor								
Recommended references	<ol style="list-style-type: none">1. <i>Probability – a graduate course</i>, by Allan Gut, Springer, 20052. <i>Elements of Large-Sample Theory</i>, by E.L. Lehmann, Springer, 19993. <i>Asymptotic Theory of Statistics and Probability</i>, by A. DasGupta, Springer, 20084. <i>Large Sample Methods in Statistics</i>, by P.K. Sen and J.M. Singer, Chapman and Hall, 19935. <i>Asymptotic Statistics</i>, by A.W. van der Vaart, Cambridge University Press, 1998								
Grading	<table><tr><td>Four Assignments</td><td>20%</td></tr><tr><td>Reading Project (Due Friday April 16, 2010 before noon)</td><td>5%</td></tr><tr><td>Midterm Test (March 4, 2010; 11:30 am – 1:00 pm, in class)</td><td>25%</td></tr><tr><td>Final Examination (1 – 4 pm, April 16, 2010, 316 Machray Hall)</td><td>50%</td></tr></table>	Four Assignments	20%	Reading Project (Due Friday April 16, 2010 before noon)	5%	Midterm Test (March 4, 2010; 11:30 am – 1:00 pm, in class)	25%	Final Examination (1 – 4 pm, April 16, 2010, 316 Machray Hall)	50%
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Remarks	<ol style="list-style-type: none">1. The test and examination are closed book. No formula sheet is provided.2. You must work independently on your assignments, although you may discuss the problems with your classmates. Copying assignments is considered a violation of academic integrity and is subject to penalties.3. For the project, you will be given a published article to read, which uses large sample statistical theory. You are required to write a (up to 2 pages) summary of the article. Detailed requirements will be provided separately.								