STAT 7350 Advanced Topics in Statistics (Fall 2012):
Measurement Error Models

Instructor
Dr. Liqun Wang, e-mail: liqun.wang@ad.umanitoba.ca
Office: 332 Machray Hall; Phone: 204-474-6270

Class time & place Tuesday & Thursday: 11:30 am - 12:45 pm, in room 316 Machray Hall

Office hours By appointment

References Fuller, WA (1987). *Measurement Error Models*. Wiley, New York.

Cheng, CL; Von Ness, J (1999). *Statistical Regression with Measurement Error*. Arnold Publisher, London.

Carroll, RJ; Ruppert, D; Stefanski, LA; Crainiceanu, CM (2006). M*easurement Error in Nonlinear Models*. Chapman & Hall/CRC.

Grading scheme The final grade will consist of assignments (70%) and one project report (30%).

Topics 1. Linear models with measurement error
- Introduction to the measurement error
- Model identifiability
- Maximum likelihood estimation
- Total least squares method
- Instrumental variable method

2. Nonlinear models with measurement error
- ME problems in nonlinear models
- Approximate estimation methods
- Instrumental variable method
- Second-order least squares method
- Simulation-based estimation

3. Additional topics

Miscellaneous: Please refer to the sections in the *University of Manitoba Undergraduate Calendar* dealing with academic dishonesty, including plagiarism, cheating and examination impersonation.