School of Public Policy and Governance, University of Toronto

PPG1004H
Quantitative Methods for Policy Analysis – Section 1
Semester: Fall 2012

Instructor Contacts

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Class Day/Time: Tuesday, Room CG-150, Canadiana Building 9a.m. - noon

Course website: Login to Blackboard through the Portal link on the University of Toronto's web page.

Course Description and Objectives

The central objective of this course is to equip students with the tools necessary to tackle issues that involve the empirical analysis of public policy problems of the sort they might encounter in a professional environment. It will cover probability theory and statistics, with a focus on the sensible application of methods to deal with empirical problems using appropriate data.

The course is designed with twin objectives in mind. The first is to provide students with the ability to analyze critically the empirical analysis done by others at a level sufficient to make intelligent decisions about how to use that analysis in the design of public policy. The second is to provide students with the skills necessary to perform empirical policy analysis on their own or to participate on a team involved in such an empirical analysis. The second objective is really a subset of the first.

E-mail/Policy

Please send e-mail questions to both the T.A. and to the e-mail above. We will reply to e-mails that can be answered quickly (in a couple of lines), and generally I will try to do this within 48 hours, except on weekends. In general, it is more efficient to get any longer questions answered during office hours.

Textbook/Required Course Materials

The textbook for the course (listed below) is available for purchase at the UofT Bookstore (www.uoftbookstore.com/online/index.ihtml).

Stock, James H. and Mark W. Watson. 2011. *Introduction to Econometrics*, 3rd ed. Pearson/Addison-Wesley.

Teaching Assistant

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Software

The primary software used in the course is STATA. At the beginning of the course, you will also require access to Microsoft Excel, or some other spreadsheet software.

You can purchase a one-year license for STATA/IC 12 (intercooled STATA, version 12) for US$108 or a perpetual license for US$189 through STATA's course GradPlan here:

http://www.stata.com/order/new/edu/gradplans/cgpcampus-order.html

Working in Groups

You may work in groups on the problem sets, but must hand in your own report. Working in groups may help you work with STATA, but you must write your own code, and run your own output to complete the problem sets. Working in groups is purely optional, and you may even get done faster by working on your own. Under no circumstances should you be copying or transposing the work of a classmate. If you have questions about what is and is not allowed, speak to me.

Evaluation

The grade for this course will based on 8 regular assignments (together worth 45% of the final grade), one major assignment (worth 15% of the final grade) and a final examination (worth 40% of the final grade). The regular assignments will be assigned nearly weekly, while you will have at least two weeks to complete the major assignment. The tentative list of due dates and weights of each of these are as follows (note that the exact assignment due dates below may change):

Component	Weight/Value	Due Date
Assignment 1	5 percent	Sept. 20, 2012 (tutorial)
Assignment 2	5 percent	Sept. 27, 2012 (tut)
Assignment 3	4 percent	Oct. 9, 2012
Assignment 4	5 percent	Oct. 16, 2012
Assignment 5	5 percent	Oct. 23, 2012
Assignment 6	6 percent	Oct. 30, 2012
Assignment 7	7 percent	Nov. 6, 2012
Assignment 8	8 percent	Nov. 13, 2012
Assignment 9 – Major Assignment	15 percent	Dec. 4, 2012

Final examination   40 percent   Final Exam Period

The final exam will be held during the final exam period in December. The final exam will cover material from the entire course.

Late Submission of Assignments/Exams Not Attended

Late submission of assignments will be subject to a penalty of 10% per day. Under no circumstances will assignments be accepted more than 5 days late. If you miss the final exam, a medical note is required before a make-up exam will be allowed. The make-up exam will occur in the subsequent exam period.

Course Website: Blackboard

Handouts, course announcements *other than those made in class*, as well as other information will be available on the course website on Blackboard. You can login to the portal via the web page: http://portal.utoronto.ca, clicking on the login icon, and entering your UTORid and password in the weblogin prompt on the next screen. Under "My Courses", click on the course name, and click-around.

Academic Integrity

Plagiarism and other academic offences will not be tolerated at the University of Toronto. Academic discipline ranges from a mark of zero on an exam or assignment to dismissal from the University. The School of Graduate Studies provides important information (including a link to a document students will find helpful called "How Not to Plagiarize") at: http://www.sgs.utoronto.ca/governance/policies/plagiarism.htm

Reading List and Schedule

Date	Topic and Required Readings
Sept. 11	Introduction, Overview, Probability, Random Variables
	S&W, chapter 1 (p. 3-16), chapter 2 (p. 17-38)
Sept. 14*	Normal Distributions and Sampling
	S&W, chapter 2 (p. 39-57), chapter 3 (p. 64-70)

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Sept. 18   Confidence Intervals and Hypothesis Testing I

S&W, chapter 3 (p. 70-90)

Oct. 2   Hypothesis Testing II, Comparing Two Populations, and Introduction to Linear Regression

S&W, chapter 3 (p. 70-90 again) and (p. 91-96), and Chapter 4 (p. 107-112)

Oct. 9   Linear Regression I

S&W, Chapter 4 (p. 112-133)

Oct. 16   Linear Regression II

S&W, Chapter 5 (p. 144-168), Chapter 6 (p. 179-205), and Chapter 7 (p. 214-242)

Oct. 23   Linear Regression III

Still Chapters 6 and 7

Oct. 30   Multiple Regression: Dummy Variables, Least Squares Assumptions, Omitted Variables Bias and Functional Form (Logs, Quadratics, Interactions)

Chapter 8 (p. 252-296) and Chapter 9 (p. 312-341)

Nov. 6   Multiple Regression: Binary Dependent Variables and Internal Validity Topics

Chapter 11 (p. 381-394, p. 398-408)

Nov. 13   Randomized Experiments and Difference-in-Differences

Chapter 13 (p. 469-506)

Nov. 20   Panel Data, Fixed Effects and Instrumental Variables I

Chapter 10 (p. 347-371) and Chapter 12 (p. 419-456)

Nov. 27   Instrumental Variables II and Clean-up