

# Quantitative Methods in Economics (ECO220Y), Fall 2010

## Sections L0301, L0401; First Half: Sept. 13 - Dec. 7 2010

**Instructors:** Margarita Pivovarova, Sept. 13 - Dec. 7; (Victor Yu [L0301], Chuan Goh [L0401]; Jan. 10 - Apr. 7)

**Lectures:** Two sections:

Section L0301: Wednesday 10-12 (EM 001 ) and Friday 10-11 (EM 119 )

Section L0401: Thursday 10-12 (SS 2118) and Friday 11-12 (SS 2118 <sup>1</sup>)

**Office Hours:** GE 228<sup>2</sup> (See web site and/or portal each week for announcement)

**TA Resources:** See web site and/or portal for updates

## 1 Course Description

An introduction to the use of statistical analysis, including such topics as data description and analysis, elementary probability theory, sampling distributions, tests of hypotheses, estimation, analysis of variance and regression analysis. Emphasis is placed on applications in economics and business problems.

## 2 Course Web Site

All important information, announcements, lecture slides and homework will be posted on the portal. Please check the portal regularly. Alternatively, you may visit <http://individual.utoronto.ca/pivovarova/teaching/default.html>, which you can go directly if the portal is down or slow.

## 3 Prerequisites

An administrator will remove you if your prerequisites are incomplete: ECO100Y1(67%)/ECO105Y1(80%); MAT133Y1/(MAT123H1, MAT124H1)/MAT135Y1/MAT137Y1/MAT157Y1. For general rules, see: <http://www.economics.utoronto.ca/index.php/index/undergraduate/load/prerequisites>.

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<sup>1</sup>EM- Emmanuel College 75 Queen's Park, SS - Sidney Smith Hall 100 St. George Street.

<sup>2</sup>Max Gluskin House, 150 St George Street

## 4 First Half and Second Half

This syllabus addresses the first half of the course from September 13 to December 7. The second half of the course from January 10 to April 7 will be taught by Victor Yu (L0301) and Chuan Goh (L0401). Please direct questions about the second half to them.

## 5 Textbook

The required text is the 8th Edition of Statistics for Management and Economics by Gerald Keller (2008)<sup>3</sup>. Some required topics are only in the textbook and some are only in lectures: you are responsible for both. The textbook is available for purchase at the University of Toronto Bookstore. Copies of the textbook, Student CD-ROM, and the Instructor's Solution Manual are available for three-hour loan at the course reserves/short-term loan at Robarts Library and at the Economics Study Centre.

## 6 Learning Objectives

This course aims at helping you understand the basic statistics concepts and being able to apply the knowledge of statistical analysis in practical situations. Specifically, our learning objectives are:

- (1) Proficiently use statistical terms and concepts, read output from various statistical packages.
- (2) Select a suitable quantitative approach to a new situation and apply it.
- (3) Correctly interpret quantitative results for the audience.
- (4) Draw valid statistical conclusions.

## 7 Lecture Slides

Lecture slides in pdf format will be posted on the portal the day before the class meeting. You are welcome to print them and bring to the class to take notes. Please remember that lecture slides are not lecture notes and you will benefit from taking your own notes on the print outs.

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<sup>3</sup>This book is for both the first and second half. The custom 8th edition is recommended

## 8 Homework

Homework will be posted on the portal once a week for each class meeting. You are advised to attempt all the questions without peeking at the solutions. Solutions will be discussed by the TAs during the tutorial hour.

## 9 Marking Scheme and Assessments

Assessment	% of Grade	Length	Date, Time and Location
Term Test 1	16%*	80 mins	October 29, 10:20 - 11:40, EX100/EX200
Term Test 2	16%*	80 mins	December 10-21, during exam period

\*If it benefits your mark and you have written both term tests as scheduled, then I may increase the weight of the test with the better score. For Term Test 1 and 2, you may bring your own non-programmable calculator and you must bring your University of Toronto TCard. Formula sheets will be provided. Term Test 2 is cumulative. Multiple choice questions are used extensively, but not exclusively.

Term Work for Second Half	26%	TBA	Jan.10 - Apr.7, TBA by Prof. Yu and Prof Goh
ECM Test	7%	TBA	March, TBA by Prof. Chen
Final Exam*	35%	3 hrs	Apr. 12- Apr. 29, TBA by A&S

\*The final exam covers the entire course: material from the first half will account for roughly one third of the exam and second half material the balance.

If you are confronted with extreme circumstances beyond your control that make it impossible to take an assessment (Term Test 1 or 2), then you should (1) notify me well in advance, (2) within 7 days from the missed assessment provide a medical note or equivalent. If either of the requirements is not satisfied, the student will receive a grade of zero. Students who miss either of the two assessments for acceptable reason, are required to write cumulative make-up test to be held at the end of the term (date TBA later in term). University Policy regarding student sick notes can be found here.

## 10 Grading

Term Test 1 and Term Test 2 will include both multiple choice and short answer questions. Multiple choice questions are marked by a machine, and short answers are marked by the

TAs. Your mark and machine-read responses will be posted on the course web-site as soon as possible. For short answer questions handwritten marks include the points you earned and, if applicable, the following symbols:

Symbol	Near the part of your answer that is:
X	Incorrect
?	Logically unclear, confusing or illegible
$\oplus$	Imprecise, incomplete, insufficiently shows work

For short answer questions, to earn partial credit requires that part of your answer is clearly correct, directly relevant to the question asked, and not contradicted by other parts of your answer. I accept application for re-grade if it: (1) is made in writing and is given to me along with your entire assessment, (2) clearly specifies which questions were improperly marked and explains why, (3) is submitted within four weeks from the test date. The entire assessment will be re-graded, not just the disputed parts. Your grade can go up, down, or remain unchanged. These conditions do not apply to clerical errors such as adding up your score wrong. If a clerical error occurs, please let me know as soon as possible.

## 11 ECM and Excel Test

Instructor C.Chen ([christy.chen@utoronto.ca](mailto:christy.chen@utoronto.ca)) will give the required Excel Course Module (ECM) that is an integral part of our course. The ECM will start in January; you will have a chance to sign up for an Excel training session held in a computer lab. You will learn how to apply the concepts learnt in the course using Excel. At the end of the course, you will be required to take a graded Excel Test in a computer lab. The ECM will use the portal for communication and announcements.

## 12 Communication

I will use announcements during lectures, posting on the portal and e-mail to the class as the means of communication with the students. E-mail is not a way to contact me unless it is an emergency. If you would like a personal reply, please speak to me before or after the class, or during office hours.

## 13 Required Readings

The course requires the following chapters in *Statistics for Management and Economics* 8th ed. by G. Keller:

Chapter 1: What is Statistics?

Chapter 2: Graphical and Tabular Descriptive Techniques

Chapter 4: Numerical Descriptive Techniques

Chapter 5: Data Collection and Sampling

Chapter 6: Probability (Excluding Section 6.4 Bayes's Law)

Chapter 7: Random Variables and Discrete Probability Distributions (Excluding Section 7.5 Poisson Distribution)

Chapter 8: Continuous Probability Distributions (Excluding Chi-Squared Distribution)

Chapter 9: Sampling Distributions

Chapter 10: Introduction to Estimation

Chapter 11: Introduction to Hypothesis Testing

Chapter 12: Inference about a Population (Excluding Section 12.2 Inference about a Population Variance)

Chapter 13: Inference about Comparing Two Populations (Excluding Section 13.3 Matched Pairs Experiment and Section 13.4 Ratio of Two Variances)

Chapter 16: Simple Linear Regression and Correlation

Chapter 17: Multiple Regression

Chapter 18: Model Building

## 14 Academic Integrity

You are expected to behave with integrity, respect and professionalism in all interactions related to our course. If you require accommodations or have accessibility concerns, please visit <http://studentlife.utoronto.ca/accessibility> now to gather information, to make arrangements, and to ensure a positive learning experience.

The Governing Council of the University of Toronto has approved a *Code of Behaviour* that sets out clearly the standard of conduct in academic matters expected of members of the University community. Students should note that copying, plagiarizing, or other forms of academic misconduct will not be tolerated. Any student engaging or assisting in such misconduct will also be subject to academic penalties.