UNIVERSITY OF TORONTO
ECO227Y1Y Foundations of Econometrics
2021-2022 Academic Year

Fall Session

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Winter Session

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1. Key Course Information

Course website: Quercus (https://q.utoronto.ca)
Lectures: Thursdays 2:00 – 4:00pm (Room: TBA)
Tutorials: Fridays 12:00 – 1:00pm ET (Room: TBA)
Fall Office hours (Mourifie): Wed 1:30 pm – 2:30pm
Winter Office hours (Tino): TBA
TA office hours: Fridays 11:00 – 12:00pm ET (Room: TBA) 150 St George St., Room 236
TAs: Chenyue Liu & Manmeet Sangha.
TA email: chenyue.liu@mail.utoronto.ca (for use, see section 10.2 & .3)

2. Course Delivery Method

Lectures and tutorials are in person. BUT for the two first week of the Fall semester they will be live-streamed and NOT recorded. The Zoom link will be send via Quercus.
Important note: Course materials are copyrighted. You are not allowed to republish or share lecture materials.

3. Course Description and Intended Learning Outcomes

This is an introduction to probability and statistics intended for economic specialists. The course assumes basic familiarity with elementary calculus and will use it extensively. The course provides students with a demanding introduction to probability theory, estimation theory, sampling distributions, hypothesis testing, and simple regression analysis. By the end of the course, students should be familiar with the basic tools used to model uncertainty in economics and finance, to test hypotheses, and to estimate model parameters.

4. Textbooks

Required: *Mathematical Statistics with Applications*, 7th Edition (2008) by Dennis D. Wackerly, William Mendenhall III and Richard L. Scheaffer (Brooks/Cole)

Optional: *Stats: Data and Models*, 5th Edition (2019) by David E. Bock, Paul F. Velleman and Richard D. De Veaux

The lectures in this course are based on Wackerly, Mendenhall and Scheaffer (WMS), and the tutorials will cover selected exercises in the same textbook. If a student has never taken a Statistics course before, Bock, Velleman and De Veaux (BVD) is recommended to gain some perspectives on statistical practice and statistical thinking.

5. Prerequisites and Co-requisites

ECO101H1 and ECO102H1 (or ECO100Y1) are required with a minimum grade of 70%. Students are expected to have had an introductory undergraduate course in calculus. In particular, passing MAT133Y1 with a minimum grade of 63%; MAT135H1 and MAT136H1 with a minimum grade of 60%; MAT137Y1 with a minimum grade of 55%; or MAT157Y1 with a minimum grade of 55% will satisfy the calculus prerequisite for this course. It is also recommended that students be enrolled in second-year courses in linear algebra (i.e., MAT223H1 or MAT240H1) and multivariate calculus (i.e., MAT235Y1; MAT237Y1; or ECO210H1) at the same times as their enrolment in ECO227Y1.

6. Tentative Course Schedule and marking scheme.

The chapters in the table below are from WMS.

Date	Week	Topic	Chapters
Fall 2021			
09-09	1	Introduction & Probability Theory I	1 & 2.1 – 2.10

09-16	2	Probability Theory II	
09-23	3	Discrete Random Variables I	2.11 – 2.12 3.1 – 3.9, 3.11
09-30	4	Discrete Random Variables II	
10-07	5	Discrete Random Variables III	
10-14	6	**Test #1 (20%)**	4.1 – 4.10
10-21	7	Continuous Random Variables I	
10-28	8	Continuous Random Variables II	
11-04	9	Continuous Random Variables III	
11-11	10	**Fall reading week (no class)**	-
11-18	11	Multivariate Probability Distribution I	-
11-25	12	Multivariate Probability Distribution I	5.1 – 5.8, 5.11
12-02	12	**Test #2 (20%)**	
Winter 2022			
01-13	13	Functions of Random Variables I	6.1 – 6.5, 6.7
01-20	14	Functions of Random Variables II	
01-27	15	Sampling Distribution and Central Limit Theorem	1 & 7.1 – 7.3, 7.5
02-03	16	Estimation I	8.1 – 8.9
02-10	17	Estimation II	
02-17	-	**Test #3 (20%)**	-
02-24	18	**Winder reading week (no class)**	-
03-03	19	Point Estimators I	9.1 – 9.7
03-10	20	Point Estimators II	
03-17	21	Hypothesis Testing	10.1 – 10.9
03-24	22	Regression I	11.1 – 11.7
03-31	23	Regression II	
04-03	24	Bayesian Methods & Review	16
TBA	-	**Test #4 (40%)**	-

7. Readings and Problem Sets

Required readings for each module are available in the table in section 7. It is recommended that the students complete the readings before attending or watching weekly lectures. Each Friday, a

problem set will be posted based on the week's lecture and reading. Although not graded, students are expected to complete the entire problem set after each lecture.

8. Course Policies

8.1 Policies on Missed Tests

A grade of zero will be given to students who do not write the test, unless an email notice is sent to me (ismael.mourifie@utoronto.ca) *on the day of the test* with an appropriate and convincing reason for missing the test. Make-up tests will only be scheduled based on legitimate medical reasons or acute emergencies. It is by the University policy that there are no "make-up tests" for "make-up tests."

A grade of zero will be given to students who do not write the test, unless an appropriate and convincing note is received within one week of the missed test (explaining why the test was missed).

- Make-up exams will only be scheduled based on legitimate medical reasons or acute emergencies.
- An email notice must be sent to the instructor ismael.mourifie@utoronto.ca or s.tino@mail.utoronto.ca on the day of the exam.
- Original legitimate supporting documents of absence are required (within one week). Scanned, copied, or emailed documents will also be accepted.
- When a student missed the exam for medical reasons, he or she shall provide an original copy of a fully completed University of Toronto official "Verification of Student Illness or Injury" form. The certificate needs to be completed by a qualified medical doctor whose OHIP/UHIP number must be provided. You can download the form from http://www.illnessverification.utoronto.ca.
- It is by the University policy that there are no "make-up exams" for "make-up exams"

8.2 Communication

The instructor will reply emails within 48 hours, except on weekends and holidays, with the following provisions:

- The question should require a one (or two) sentence response (maximum). If it takes more, office hours are the more appropriate venue.
- The instructor will not reply to email with more than 4 sentences. If it takes more, office hours are the more appropriate venue.
- The instructor will not reply to emails concerning grading. For such matters, office hours

are more appropriate.

- It is also (strongly) preferable that you use the University of Toronto email addresses: Instructor spam filter is set to maximum.
- Always identify yourself, course and section in your email.
- Please do not send attachments of any kind.
- Please do not submit term work by email.
- The teaching assistant has one email-hour per week to reply course related questions, and the same email policy holds for them.

8.3 Academic Misconduct

Students should note that copying, plagiarizing, or other forms of academic misconduct will not be tolerated. Any student caught engaging in such activities will be subject to academic discipline ranging from a mark of zero on the assignment, test or examination to dismissal from the university as outlined in the academic handbook. Any student abetting or otherwise assisting in such misconduct will also be subject to academic penalties.

8.4 Accessibility

The University is committed to accessibility. If a student requires accommodations for a disability, or has any accessibility concerns about the course, please contact Accessibility Services as soon as possible. Their website is http://www.studentlife.utoronto.ca/as.