York University
Faculty of Liberal Arts & Professional Studies
Department of Economics

Course No & Title: AP/ECON 2500 3.0 Introductory Statistics for Economists I   **Semester**: Fall 2019, Sec- E

1.1 Course Webpage:
Relevant materials would be posted in Moodle. After Fall semester start, please check Moodle on a regular basis. Most of the online materials would be password protected with the **PASSWORD: "Econ".** The course outline is part of *required reading for F19 2500 E.* You will be expected to understand the policies and assignments discussed in this outline. Note: For environment friendly reasons, this outline will NOT be printed for distribution.

1.2 Prerequisite / Co-requisite:
Prerequisites: Grade 12U Advanced Functions or equivalent. **Course credit exclusions:** AP/ADMS 2320 3.00, AP/POLS 3300 6.00, AP/SOCI 3030 6.00, ES/ENVS 2009 6.00, GL/MATH/MODR 1610 3.00, GL/POLS/SOCI 2610 3.00, GL/PSYC 2530 3.00, HH/KINE 2050 3.00, HH/PSYC 2020 6.00, HH/PSYC 2021 3.00, SC/BIOL 2060 3.00, SC/GEOG 2420 3.00, SC/MATH 2500 3.00, SC/MATH 2560 3.00, SC/MATH 2565 3.00.
Note: (1)Acceptable course substitutes are available in the Calendar.
     (2) students who have taken SC/MATH 1131 3.00 may not take AP/ECON 2500 3.00.

1.3 Course Instructor/Contact:
Simin Seury (PhD)
Department of Economics, York University, 4700 Keele St., Toronto, ON M3J 1P3, CANADA
Office: **DB 2043**. Hours: By appointment on **Wed: 11:00 A.M. – 12:30 PM**
Phone: (416) 736 2100 Ext. 33501. Email: seury@yorku.ca

1.4 Lecture Time/Location & Information about the TA:
Lecture Details: **Day/Time:** R **19:00-22:00 (**7:00-10:00 PM), Location: **ACW 006**. Information about TA: TBA

1.5 Email Communication:
For general course related questions, please check course outline and all other information posted online before sending any email. Please note that **email communications** are meant to be restricted **for administrative concerns only**. All academic concerns are meant to be dealt with during class lectures and office hours.
   a) If you need to send me an email, please (i) state the course and section number (e.g. Econ 2500 E) in the subject, address the email properly (for example: "Hi teacher"/"Hi prof"/"Hi Miss"), (ii) state valid administrative concerns clearly, (iii) write your full name with ID (no nick names please).
   b) Please note, when you contact any office, you need to follow required etiquette, and you cannot expect a reply after regular work hours (for example after 5pm), or during weekend or during holidays. Similarly, remember to follow required etiquette when you are writing to your Professor. I will not be able to respond to emails during weekends and holidays. During the regular office hours and weekdays, I will strive to respond to your emails within two business days.
   c) I will not open/read/reply any email with sick notes as attachments; do not send me your application for missed test (or any document relating to your illness) attached with your email.

2.1 Course Description:
The purpose of the course is to introduce students to some basic statistical concepts and methods and their empirical applications. Topics covered include: various types of statistical applications and fundamental elements; descriptive statistics, statistical methods for describing sets of data, probability theory and mathematical expectations, random variables, sampling distributions, correlation, and the design and

interpretation of hypothesis tests. Upon completion, students are expected to be able to apply these techniques to analyze empirical evidence relating to economic propositions.

2.2 Course Text / Readings:

Statistics for Business and Economics / James T. McClave, P. George Benson, Terry Sincich.- 13th ed.,2018, Pearson.

Student's Solutions Manual for Statistics for Business and Economics, 13th Edition / Nancy Boudreau, 2018, Pearson.

For learning **statistical software**, the recommended textbook is *A Student's Guide to R* by Nicholas J. Horton, Daniel T. Kaplan, and Randall Pruim. It is available for free via this link:
https://cran.r-project.org/doc/contrib/Horton+Pruim+Kaplan_MOSAIC-StudentGuide.pdf

Note: More information about the text would be posted in Moodle under Section I of the course webpage later.

2.3. Tentative Topics

The course would cover the following topics (as time permits):

1. **Statistics, Data, and Statistical Thinking (Chapter 1):** Types of Statistical Applications in Business. Fundamental Elements of Statistics. Types of Data. Collecting Data: Sampling and Related Issues.
2. **Methods for Describing Sets of Data (Chapter 2):** Describing Qualitative Data. Graphical Methods for Describing Quantitative Data. Numerical Measures of Central Tendency. Numerical Measures of Variability. Using the Mean and Standard Deviation to Describe Data. Numerical Measures of Relative Standing. Methods for Detecting Outliers: Box Plots and z-Scores.
3. **Probability (Chapter 3):** Events, Sample Spaces, and Probability, Unions, and Intersections. The Additive Rule. Mutually Exclusive Events. Conditional Probability. The Multiplicative Rule. Independent Events.
4. **Random Variables and Probability Distributions (Chapter 4):** Discrete Random Variables. Probability Distributions for Discrete Random Variables. The Binomial Distribution. Continuous Random Variables. Probability Distributions for Continuous Random Variables. The Normal Distribution. Descriptive Methods for Assessing Normality.
5. **Other Continuous Distributions: Uniform. Sampling Distributions (Chapter 5):** The Concept of a Sampling Distribution. Properties of Sampling Distributions: Unbiasedness and Minimum Variance. The Sampling Distribution of the Sample Mean and the Sample Proportion. The Central Limit Theorem.
6. **Inferences Based on a Single Sample: Estimation with Confidence Intervals (Chapter 6):** Identifying and Estimating the Target Parameter. Large-Sample Confidence Interval for a Population Mean. Small-Sample Confidence Interval for a Population Mean. Large-Sample Confidence Interval for a Population Proportion. Determining the Sample Size. Finite Population Correction for Simple Random Sampling.
7. **Inferences Based on a Single Sample: Tests of Hypotheses (Chapter 7):** The Elements of a Test of Hypothesis. Formulating Hypotheses and Setting Up the Rejection Region. Observed Significance Levels: p-Values. Large-Sample Test of Hypothesis about a Population Mean. Small-Sample Test of Hypothesis about a Population Mean. Large-Sample Test of Hypothesis about a Population Proportion.
8. **Inferences Based on Two Samples: Confidence Intervals and Tests of Hypotheses (Chapter 8):** Comparing Two Population Means: Paired Difference Experiments. Comparing Two Population Proportions: Independent Sampling. Determining the Required Sample Size.

The instructor reserves the right to make small changes to the coverage as the course develops. Students are encouraged to keep up with the material on a lecture by lecture basis and they are expected to read the texts.

Tentative lecture schedule:

Lecture	Week of…	Topics	Reference
Lec 01	Sep 02	Introduction to course and topics. Lecture: Topic 1	Ch 1
Lec 02	Sep 09	Lecture: Topic 2	Ch 2
Lec 03	Sep 16	Lecture: Topics 3 & 4	Ch 2, 3
Lec 04	Sep 23	Lecture: Topic 3	Ch 3
Lec 05	Sep 30	Lecture: Topic 4	Ch 4
Lec 06	Oct 07	**Midterm 1 Thursday, Oct 10, 2019** (Includes Topics 1, 2, 3): (several problem-solving questions, no MCQs).	Ch 1, 2, 3
		Fall Reading Week Oct 12 – 18, 2019 (No class. University open)	
Lec 07	Oct 21	Lecture: Topics 4 & 5	Ch 4, 5
Lec 08	Oct 28	Lecture: Topics 5 & 6	Ch 5, 6
Lec 09	Nov 04	**Midterm 2 Thursday, Nov 07, 2019** (Includes Topics III, IV, V): (several problem-solving questions, no MCQs). Lecture after exam: Topic 6	Ch 3, 4, 5 Ch 6
	Nov 11	Lecture: Topic 7	Ch 7
Lec 10	Nov 18	Lecture: Topics 7 & 8	Ch 7, 8
Lec 11	Nov 25	Lecture: Topic 8/ Any remaining topics/concept	Ch 8/ Other
Final Exam Date: **TBA (During the Fall 2019 Exam Period). Start Time: TBA. Location: TBA** Duration: **2 hours and 30 minutes** (several problem-solving questions, no MCQs). **Syllabus: Comprehensive**			

Highlights from class lectures would be posted on the course website in pdf format. But those online materials are NOT substituting for textbook materials and class lectures. Students are responsible for materials in the main text that correspond to the materials covered in class. However, students should NOT expect the instructor to talk about every single page from the textbook. The lectures will focus on the most challenging parts of the material and problem solving. Some basic materials will be left for the students to study on their own. This is not an online course and it would not be possible for your instructor to post online everything that we discuss in class. Your instructor takes no responsibility for any adverse effect a student might experience as a result of not attending class lectures and thereby missing valuable information conveyed in class. Email communication is restricted for administrative purpose only (which implies, missing class lectures and requesting your instructor to explain lecture topics through email communication, is not an option).

Videotaping/ Recording class lectures is not permitted without written permission for special accommodation.

3.1 Evaluation[1]:

Grading Components	Date/Time(1)
Midterm 1	Thursday, October 10, 2019
Midterm 2	Thursday, November 07, 2019
Final Exam	TBA, during Fall 2019 Exam period
Class Work, Participation, Assignments(2)	Throughout the semester

*[1] These are tentative dates that would be reconfirmed after first three lectures. It is __mandatory__ that students bring original copy of their **Student ID card** (or valid picture ID) to the tests and the Final exam.
*[2] Please see section 3.3 for details

Students who would attend both Midterms and Final Exam would have the option of getting maximum grade out of the following two schemes:
Scheme I: Total Marks = (20% of Best Midterm + 80% of Final)
Scheme II: Total Marks = (30% of Best Midterm + 10% of the other Midterm + 60% of Final)

3.2 Tests:
All exams (in class Tests and Final Exam) are closed book tests.

Midterm Tests will be held on the dates mentioned above (in the regular class room, unless otherwise notified). Duration of midterm would be 90 minutes. There would be several problem-solving questions; you need to answer all (no Multiple-Choice Questions).
Syllabus of Midterm 1 would include materials from Chapter 1, 2 and 3 (see section 2.3 for topics).
Syllabus of Midterm 2 would include materials from Chapter 3, 4 and 5 (see section 2.3 for topics).

It is important to note that due to the comprehensive nature of the syllabus, level of difficulty would naturally increase from Midterm 1 to Midterm 2 to Final Exam. Your instructor reserves the right to re-write an exam.

Final exam will be held according to the Fall 2019 exam schedule. Exam duration for final would be 2.5 hours. Syllabus would be **comprehensive**. That is, for the final exam, we will cover all the materials discussed in this course. There would be several problem solving questions; you need to answer all (no Multiple-Choice Questions). **The Fall Exam Period runs from December 05 to 20, 2019**. It is your responsibility as a student to ensure that you are available to sit for examinations during the entire exam period for the term corresponding to your course. No alternative date for the exam will be offered. Deferred exams are often scheduled right after the end of the official final exam period. We strongly recommend that you do not make any travel arrangements prior to the end of all these probable examination dates.

3.3 Class Work, Participation and Assignments:
Positive in-class participation is highly encouraged in this course *(please do not hesitate to ask me any course-related question, including the simplest question "Teacher/Prof./Miss, I did not understand this, could you please explain again?").* Absenteeism is strongly discouraged, particularly because we would solve problems in our class that will help you to prepare for the exams. We would have assignments on a regular basis. These are not to be graded, but you should try to solve these on your own before I provide the answers in class. You are expected to copy the solutions from the board, as these details would not be posted online. Class works (CWs) are based on questions discussed/solved during earlier class lectures. Students who would be able to do at least 70% of the CWs correctly, would get 4 bonus marks. Students who can get more than 70% of the CWs correct, would get 5 bonus marks. CW is an open book exercise (usual duration 10 to 15 minutes). You should be able to find answer of a CW question from your previous class notes. There is no option to get partial bonus marks (that is, there is no option to get bonus marks from doing less than seventy percent CWs); there is no option to write make-up for a CW. Further explanation about CW would be provided during first two lectures.

3.4 Missed exams/Tests and Other details:
There will be NO MAKE-UP exam for any midterm exam. Students with a documented reason for missing one Midterm test, such as illness, compassionate grounds, etc., which is confirmed by supporting documentation (e.g., doctor's letter, death certificate for someone in immediate family etc.) may request to shift the weight of the missed exam in the following fashion: Scheme II becomes: Total marks = 30% marks from the Midterm (which they did not miss + 70% from Final; Scheme I remains unchanged. There is no option for shifting Midterm weights if a student misses both Midterms. If a student misses both Midterms, their grade would be determined according to Scheme I: Total Marks = 80% Final + "0" from missed Midterms.

☐ Required procedure for a student who missed only one midterm (to be eligible for the weight-transfer):

(a) **Students missing the mid-term exam for Medical reasons:** Complete an application with original copy of completed Registrar's Office **Attending Physician's Statement** showing a physical incapability of writing the test/exam on the test date, dated the day of the test/exam or earlier. Read description of "Medical Circumstances" for more details. The physician's office may be contacted to verify that the statement of the physician provided in your application.

(b) **Students missing the mid-term exam for Non-Medical reasons:** Write an application complete with appropriate documentation. Read description of "Non-Medical Circumstances" for more details.

(c) The student needs to submit their completed application within <mark>7 business days of the missed exam</mark> to the reception desk of Department of Economics (to my attention), 1144 Vari Hall. <mark>**Do NOT send documents as email attachments**</mark>. I will not open/accept any email with attachment(s).

(d) After submitting your application, you must send your professor an email (must follow the email format, posted in Moodle).

☐ A test missed without "appropriate documentation" will be assigned a grade of "0". No permission is ever given to a student to write a test or exam in advance of its scheduled date. The weight of missed class participation cannot be transferred to other components.

☐ Deferred Standing for the final exam will be considered only under the following circumstances:

1. **MEDICAL CIRCUMSTANCES:** Exams missed due to medical circumstances must be supported by an original copy of York Attending Physicians Statement filled out completely by a medical doctor or licensed psychologist/counselor, dated within **48 hours of the final exam date**. That is, your **Physician's Statement** should show that you have consulted the physician within this 48 hour time span. Any other forms of doctor's note, especially one stating simply that "The student was seen in my office" is not acceptable. The statement must include:
   ☐ Full name, mailing address, telephone number of the physician.
   ☐ The nature of the illness and its duration (i.e., specific dates covered)
   ☐ An indication of whether the illness and/or medication prescribed would have SERIOUSLY affected the student's ability to study and perform over the period in question.
   ☐ The physician's office may be contacted to verify that the statement was actually completed by the physician.

2. **NON-MEDICAL CIRCUMSTANCES:** Exams missed due to non-medical circumstances must be supported by appropriate documentation, i.e., death certificates, obituary notice, automobile accident reports, airline/bus ticket receipt for emergency travel (with the date of booking on the ticket), etc. Airline/train/bus ticket/receipts for emergency travel must indicate destination, departure, and return dates. Having to work at the time of the exam or non-emergency travel would not be considered as valid excuse for missing the exam.

To apply for the deferred exam students must fill out the **Deferred Standing Agreement form** and submit it along with all original supporting documentation including original copy of documents (such as completed Registrar's Office **Attending Physician's Statement** showing a physical incapability of writing the exam on the exam date, dated the day of the exam or earlier for medical reasons.). The complete application should be submitted at the office of the Department of Economics located in 1144 Vari Hall (to my attention) **within 7 calendar days of the original exam date**. After submitting the application, you should send me an email (following email format, posted in Moodle). Submitting the form does NOT guarantee permission to write the deferred exam. Only submissions that meet all requirements will be granted permission. Students whose submissions are not granted will receive a zero for their final exam score. If the application is approved, the date and time of the deferred exam will be announced to the student later. Students who may require further extensions or accommodation will have to submit a formal petition to the Faculty.

3.5 Grading and Re-evaluation Policy:
The grading scheme for the course conforms to the 9-point grading system used in undergraduate programs at York (e.g., A+ = 9, A = 8, B+ - 7, C+ = 5, etc.). Assignments and tests will bear either a letter grade designation or a corresponding number grade (e.g. A+ = 90 to 100, A = 80 to 90, B+ = 75 to 79, etc.) (For a full description of York grading system see the York University Undergraduate Calendar - https://calendars.students.yorku.ca/. If you feel that you disagree with the grading of your Test, and you would like to request for re-evaluation, you have to return your paper immediately to your Grader or your Instructor, when it is handed to you, and you must visit the person who marked your exam during the next 5 business days. Your TA/Grader would provide time to explain how the exam was graded. Your Instructor/TA/Grader reserves the right to re-grade the entire content of the exam (for example maybe your instructor/TA/Grader overlooked a problem/mistake in your answer during the first evaluation, but it might get noticed during re-evaluation). As such, your marks may increase, may decrease or may remain the same after re-evaluation.

4.1 Letters of Accommodation:
If any student requires special accommodations for the exams or even for the class work, s/he must hand me the hard copy of his/her proper supporting documents ASAP so that we can work together for arranging the special accommodation. For alternate exam accommodations, students are responsible to contact their counselor(s) and Alternate Exam Centre well ahead of time. Alternate exams for Tests must be held during the same day the rest of the class is having the exam.

4.2 Course ADD/Drop Deadlines:	**Fall Term 2019 (F)**
Last date to add a course **without permission** of instructor (also see Financial Deadlines)	Sept. 17
Last date to add a course with permission of instructor (also see Financial Deadlines)	Oct. 1
Last date to drop a course without receiving a grade (also see Financial Deadlines)	Nov. 8
Course Withdrawal Period (withdraw from a course and receive a grade of "W" on transcript – see note below)	Nov. 9 - Dec. 3

Policy and Guidelines on Withdrawn from Course: http://secretariat-policies.info.yorku.ca/policies/withdrawn-from-course-w-policy-and-guidelines/
https://registrar.yorku.ca/enrol/dates/fw19

4.3 IMPORTANT COURSE INFORMATION FOR STUDENTS:
- **York's Academic Honesty Policy and Procedures**: As per Senate Policy, academic honesty and integrity is defined as conduct that violates the ethical or legal standards of the University community or of one's program or specialization is subject to severe penalties. Students are responsible for understanding the nature and consequences of these offences, as contained in the Senate Policy on Academic Honesty. More information visit: https://secretariat-policies.info.yorku.ca/policies/academic-honesty-senate-policy-on/
and https://econ.laps.yorku.ca/students/academic-policies-procedure/academic-integrity/
- Ethics Review Process for research: http://research.info.yorku.ca/ore/process/
- Course requirement accommodation for students with disabilities, including physical, medical, systemic, learning and psychiatric disabilities:
https://secretariat-policies.info.yorku.ca/policies/academic-accommodation-for-students-with-disabilities-guidelines-procedures-and-definitions/
- Student conduct standards: http://oscr.students.uit.yorku.ca/student-conduct
- Religious Accommodations Guideline: https://w2prod.sis.yorku.ca/Apps/WebObjects/cdm.woa/wa/regobs

GOOD LUCK! I wish you all the success in this course and in your future endeavours.