

Faculty of Liberal Arts & Professional Studies

Department of Economics

Course: AP/ECON 2500 3.0 Introductory Statistics for Economists I

Term: Fall 2020

Course Description:

The purpose of the course is to introduce students to some fundamental statistical concepts and methods and their applications in economics. The course explains step by step how to use different statistical techniques to solve real-world problems. A great variety of examples lets students develop their statistical thinking and enhance their problem-solving skills.

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. Note 2: students who have taken SC/MATH 1131 3.00 may not take AP/ECON 2500 3.00.

Course Instructor:

Andrei Semenov, VH 1028
416-736-2100 Ext. 77025, asemenov@yorku.ca
Office hours: R 13:45 - 15:15, by e-mail

Time and Location:

Section B: TR 13:00 - 14:30
Section D: TR 14:30 - 16:00

Course Webpage: Moodle

Some course information will be posted on <http://asemenov.info.yorku.ca/courses/>

Evaluation:

Quizzes - 60% (date TBA)
Final exam - 40% (date TBA)

Grading:

For the description of York grading system see the York University Undergraduate Calendar available at <http://calendars.registrar.yorku.ca/2010-2011/academic/index.htm>

Missed Quizzes and Exams:

There are no make-up quizzes, no weight transfer. If a quiz is missed, the mark for the quiz is zero. Students missed the final exam should submit a deferred exam application together with the supporting documents to the economics department to my attention. The date and time of the deferred exam will be set at a later date. Students, who may require further extensions or accommodation, will have to submit a formal petition to the Faculty. For explanation of documentation requirements, see http://econ.laps.yorku.ca/files/2015/10/Deferred_Standing1.pdf

Course Readings:

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

<https://www.pearson.com/store/p/statistics-for-business-and-economics/P100000873571/9780134446332>

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

<https://www.pearson.com/store/p/statistics-for-business-and-economics/P100000873571/9780134513034>

MyLab Statistics with Pearson eText - 24 Month Instant Access available at

<https://www.pearson.com/store/p/statistics-for-business-and-economics/P100000873571/9780134596839>

The textbook and the student's solutions manual are also available in the York University bookstore and library.

Topics Covered:

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.

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.

Probability (Chapter 3): Events, Sample Spaces, and Probability. Unions and Intersections. Complementary Events. The Additive Rule and Mutually Exclusive Events. Conditional Probability. The Multiplicative Rule and Independent Events.

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. 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 Central Limit Theorem. The Sampling Distribution of the Sample Proportion.

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.

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.

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.

Schedule of readings and activities:

The lecture PowerPoint presentations will be available on Moodle. There are no live virtual meetings. Students can learn the course material at their own pace. Below is the timeline for completing the course.

Week 1	Chapter 1
Week 2	Chapter 2
Week 3	Chapter 3
Week 4	Chapter 3
Week 5	Chapter 4
Week 6	Chapter 4
Week 7	Chapter 5
Week 8	Chapter 5
Week 9	Chapter 6
Week 10	Chapter 7
Week 11	Chapter 8
Week 12	Chapter 8

E-mail Policy:

When sending an e-mail, indicate the course number on the subject line. E-mail should not be used to receive private tutorial or extended answers to the questions on the course material.

Important Course Information for Students:

This is an online course. The entire course, including participation/discussion and test-taking, will take place on the course's Moodle. All course related information, including the information about quizzes and the final exam, will be available on Moodle or will be sent to you by e-mail. Check Moodle and your e-mails regularly.

All students are expected to familiarize themselves with the following information: Student Rights & Responsibilities, Academic Accommodation for Students with Disabilities.

Academic Honesty and Integrity:

In this course, we strive to maintain academic integrity to the highest extent possible. Please familiarize yourself with the meaning of academic integrity by completing SPARK's Academic Integrity module at the beginning of the course. Breaches of academic integrity range from cheating to plagiarism (i.e., the improper crediting of another's work, the representation of another's ideas as your own, etc.). All instances of academic dishonesty in this course will be reported to the appropriate university authorities, and can be punishable according to the Senate Policy on Academic Honesty.