Faculty of Liberal Arts & Professional Studies
Department of Economics

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

Term: F 2024

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
asemenov@yorku.ca
Office hours - after class

TA: Office hours - time and location TBA

Time and Location:

Section A: M   8:30 - 10:30, W   9:30 - 10:30 DB 0010
Section D: M 14:30 - 16:30, W 14:30 - 15:30 DB 0010

Course Webpage: eClass

Evaluation:

Mid-term exam 1   - 30% (in class, October 7)
Mid-term exam 2   - 30% (in class, November 4)
Final exam   - 40% (location December 15)

Missed Exams: There will be no make-up mid-term exams. The students who missed a mid-term exam must provide, no later than 7 calendar days after the examination date, appropriate original documentation (the Attending Physician's Statement, the Counsellor's Statement, the death certificate, etc.) (in English) verifying the circumstances (the illness, death, or other serious hardship) for the missed exam. Travel documentation must include your full name and departure/return dates. As concerns medical grounds, the students must have visited a doctor within 24 hours of the date of the exam. For the students who missed the mid-term exam and provided appropriate documentation, the weight of the missed mid-term exam will be transferred to the final exam. If two mid-term exams are missed, then the weight of only one mid-term exam will be transferred to the final exam. The students who missed the final exam should submit a deferred exam application together with the supporting documents to the economics department for my attention. The link to the Mach form for submitting a deferred exam request:
https://www.yorku.ca/laps/econ/undergraduate-programs/academic-resources/department-policies/deferred-standing/

The date and time of the deferred exam will be set at a later date. The students that may require further extensions or accommodation will have to submit a formal petition to the Faculty.

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.

Attendance Policy: Students are allowed to miss 2 classes. For each next missed class, a student must provide (in person, in class) appropriate original documentation (the Attending Physician's Statement, the Counsellor's Statement, the death certificate, etc.) verifying the circumstances (the illness, death, or other serious hardship) for the missed class. 2 points per absence will be deducted from the student's total mark for the course if no original supporting documentation is provided within 7 calendar days after the missed class.

Important Course Information for Students: All students are expected to familiarize themselves with the information available at https://www.yorku.ca/secretariat/policies/

Course Readings:

Statistics for Business and Economics / James T. McClave, P. George Benson, Terry Sincich.- 14th ed., 2022, Pearson (eBbook - $49).

Student's Solutions Manual for Statistics for Business and Economics, 14th Edition / Nancy Boudreau, 2022, Pearson ($32).

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.