NAU NORTHERN ARIZONA UNIVERSITY

Course Title: ECO 446 Introduction to Econometrics
Term: Summer 2023
Instructor: TBA
Course Credit: 3
Mode of Instruction: Online

Course Description:

This course is an examination of theory and application of econometrics. The focus is on using the basic regression model, understanding Ordinary Least Squares, analyzing the assumptions of the Classical Model and applications of regression analysis in areas such as time series methods, forecasting, simultaneous equations, and dummy dependent variable techniques. Upon the completion, the course will deepen students' comprehension with the parts of regression analysis and statistical inference that are essential to a full understanding of econometrics and applied statistics.

Course Prerequisites:

ECO 284 Principles Of Economics: Micro; ECO 285 Principles Of Economics: Macro
ECO 321 Intermediate Business Statistics

Learning Outcomes:

By the end of the course, the student should be able to:

A. Describe the main features of the econometric methods covered in the course, and their statistical properties;

B. Develop computer programming skills in order to implement their technical knowledge in practice;

C. Use statistical analysis, including the classical regression model, to estimate relevant economic parameters, predict economic outcomes, and test economic hypotheses;

D. Evaluate which econometric methods can be used to determine whether a statistical association represents a causal relationship;

Course Material:

Jeffrey M. Wooldridge, ***Introductory Econometrics: A Modern Approach***, 5th edition. South-Western, Cengage Learning, 2013.

Judge, G.G. Griffiths, R.C. Hill, T. Lee and H. Lutkepohl, ***The Theory and Practice of Econometrics***, 2nd, John Wiley, 1991.

Evaluation:

- 2 Quizzes [20%]
- 2 Essays [30%]
- Mid-term Exam [20%]
- Final Exam [30%]

Description of the Evaluation tasks:

Assignment/ Essay/ ... : During the term, students will be required to finish several evaluation tasks within due date. All the tasks are linked with specific course topics/outcomes and will adequately assess students' competence and learning outcomes. Students are encouraged to meet with instructor about these tasks at any point.

Mid-term/ Final Exams/ Quiz/... : There may be periodic quizzes given at the beginning of lecture sessions; the feedback from these quizzes will monitor the progress of the learners and help to set learning priorities. There will be mid-term exam/ final exam for the course. They are the basic criteria for the evaluation of students' learning outcomes and final grade.

Grading Policy:

Students are supposed to finish each online lecture. Prior to each class, students should finish the required readings. During the class time, students are encouraged to make use of all relevant online course resources and communicate with the instructor. Students' grades are accumulated based on the cumulative evaluations.

Students' letter grade will be assigned according to the following scale:

A+ 90-100	A 85-89	A- 80-84
B+ 77-79	B 73-76	B- 70-72
C+ 67-69	C 63-66	C- 60-62
D+ 57-59	D 53-56	D- 50-52
F < 50		

Academic Integrity:

Students must strictly adhere to the university's academic integrity rule; and all essays, exams and any other form of academic assignments must adhere to these rules. Any form of plagiarism, cheating, or misappropriation of materials will be considered a violation of academic integrity and will be punishable by the university.

Withdrawal from the Course(s):

Students will be able to apply for a transfer or withdrawal within 3 days of the starting date of the course. If a withdrawal is applied for within 3 working days, the tuition fee will be fully refunded. After 3 days, the tuition fee will not be refunded. If a withdrawal is applied for in the first two weeks, it will be recorded as W (Withdraw) on the course transcript. After this initial two-week period, the class will be recorded as F (Fail).

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Tentative Schedule:

1	The Nature of Econometrics and Economic Data
2	The Simple Regression Model
3	Multiple Regression Analysis: Estimation and Inference
4	Binary (or Dummy) Variables
5	Heteroskedasticity **Quiz 1**
6	More on Specification and Data Problems
7	Basic Regression Analysis with Time Series Data
8	Serial Correlation and Heteroskedasticity in Time Series Regressions
9	Advances Topics:
10	Simple and Advanced Panel Data Methods **Essay 1**
11	Instrumental Variables Estimation
12	Two Stage Least Squares
13	**Mid-term Exam**
14	Simultaneous Equations Models
15	Summary of Matrix Algebra
16	The Classical Inference Approach for the General Linear Model
17	Statistical Decision Theory and Biased Estimation
18	The Bayesian Approach to Inference Nonlinear Statistical Models
19	Finite and Infinite Distributed Lags
20	Inference in Simultaneous Equations Models **Quiz 1**
21	Future Model Extensions
22	Unobservable Variables

23	Qualitative and Limited Dependent Variable Models
24	Non-Normal Disturbances **Essay 2**
25	**Final Exam**