Faculty of Economics and Political Science

Econometrics

Information :

Course Code : ECO 402	**Level** : Undergraduate	**Course Hours :**	3.00- Hours

Department : Department of Economics

Instructor Information :

Title	Name	Office hours
Lecturer	Fawzia Ahmed Abdelhamid Ibrahim	5
Lecturer	Fawzia Ahmed Abdelhamid Ibrahim	5
Teaching Assistant	AMR MOSTAFA MAHMOUD MOSTAFA	10

Area Of Study :

This course is concerned with utilizing statistical techniques in economic analysis. It deals with the nature of the regression analysis, emphasizing the difference between simple and multiple regressions in the single and simultaneous equation models. It illustrates the classical normal linear regression model, its assumptions and the consequences from relaxing these assumptions: such as Multicollinearity, Heteroscedasticity and Autocorrelation. In addition, the extension of the two variable linear regression model is clarified. Besides, it acquaints students with the techniques of testing the significance of the model by applying on statistical software.

Course Goals:
˝Train students on how to use linear regression models to analyze economic data.
˝Familiarize students with the theoretical proofs of the assumptions of the regression model.
˝Acquaint students with different tests (Testing of Hypothesis {t-test, f-test}, Confidence Intervals).
˝Emphasize on the tests used to analyze special cases of linear regression model.
˝Identify different tests associated with relaxing the assumptions of the regression model.
˝Teach students how to use STATA software program in analyzing the data.
˝Enhance their job market skills; better prepare them for pursuing graduate education and in becoming professional economists.

Description :

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Course outcomes :

a.Knowledge and Understanding: :

1 -	Explain the principles of regression analysis.
2 -	Discuss the consequences of relaxing the classical linear regression model assumptions (Multicollinearity, Heteroscedasticity, Autocorrelation), and the techniques for dealing with them.

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3 -	Recognize specific econometric facts, terminologies, principles, relationships, concepts and practical techniques.	
4 -	Describe statistical procedures and applications on different sets of economic data.	

b.Intellectual Skills: :

1 -	Analyze economic problems using statistical and econometric methods.
2 -	Relate the principles of econometrics and statistics associated with other modules to real world economic examples.
3 -	Solve simple problems based on the material presented in the lectures.
4 -	Interpret, explain, and evaluate the results of activities, using knowledge and understanding of econometrics and to communicate this information clearly and logically in appropriate forms, using appropriate specialist vocabulary.
5 -	Perform simple error estimation.

c.Professional and Practical Skills: :

1 -	Use STATA software program to estimate a regression equation, and interpret the results, for bivariate (two-variable) regression models and multiple regression models.
2 -	Test hypotheses concerning model parameters as well as testing the significance of the overall model.
3 -	Apply statistical procedures and techniques to demonstrate an understanding of the nature of econometrics.

d.General and Transferable Skills: :

1 -	Provide research papers with a regression model.
2 -	Gain confidence and facility in systematic approaches to problem solving.
3 -	Acquire critical thinking and problem solving techniques

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Introductory lecture and course outline - The Nature of Regression Analysis, Why do we study Econometrics?	5	1	1
Two-Variable Regression Analysis: Some Basic Ideas	5	1	1
Two Variable Regression Model: The Problem of Estimation - Classical Normal Linear Regression Model (CNLRM)	10	2	2
Two-Variable Regression: Interval Estimation and Hypothesis Testing	5	1	1
Extensions of the Two-Variable Linear Regression Model	5	1	1
Mid Term Exam		1	
Multiple Regression Analysis: The Problem of Estimation	5	1	1
Multiple Regression Analysis: The Problem of Inference	5	1	1
Lab exercise in 2 real case studies using STATA software program - Assignment using STATA	5	1	1
Multicollinearity: What Happens if the Regressors are correlated?	5	1	1
Heteroscedasticity: What Happens if the Error Variance is Nonconstant?	5	1	1
Autocorrelation: What Happens if the Error Terms are Correlated?	5	1	1
Lab Exercise in 2 real case studies using STATA software program - In addition to General Revision	5	1	1

Course Topic And Contents :

Topic	No. of hours	Lecture	Tutorial / Practical
Final Exam		1	

Teaching And Learning Methodologies :

Data show, smart board and computer in lectures

Tutorials for problem solving and statistical packages application.

Course Assessment :

Methods of assessment	Relative weight %	Week No	Assess What
Course Work (Attendance, Participation, Assignments, Quizzes, Research Paperõ D	30.00		To assess understanding and to assess theoretical background of the intellectual and practical skills.
Final Exam	40.00	15	To assess knowledge and intellectual skills.
Midterm Exam	30.00	7	To assess professional skills.

Recommended books :

1. Christopher Dougherty, Introduction to Econometrics, Oxford University Press, 2009.
2. J. Wooldridge, Introductory Econometrics, Thompson, 2003.
3. R. Hill, W. Griffiths, and G. Judge, Undergraduate Econometrics, John Wiley & sons inc, 2005.

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