LEAD CITY UNIVERSITY

FACULTY OF SOCIAL AND MANAGEMENT SCIENCES

DEPARTMENT OF ECONOMICS

COURSE PARTICULARS

Course Code:	ECO 314
Course Title:	Introductory Econometrics II
Number of Units:	2
Status:	Compulsory

LECTURER DETAIL

Name:	Dr. Foye V.O.
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Course Description

An extension of two-variable linear model presentation and interpretation; simultaneous equation systems (2 equation model only); estimation problems, choice of techniques, equation of parameter estimates; simulations; forecasting and test of forecasting ability; introduction to statistical / econometrics software packages: SPSS, E-VIEWS, STATA, PC-GIVE, RATS , etc.

COURSE OBJECTIVES

The objective of this course is to introduce students to the basics of econometric principles and its application in the context of simple research methodology. Thus, it takes students through definitional and procedural issues in econometrics and how econometrics relates to economic theory, mathematics and statistics. Therefore, this course is aimed at giving students some insight into how econometric techniques such as regression analysis could be used in economic

research, especially for the students' final year projects. This course also aimed at preparing students for advanced econometric course in the future.

ASSESSMENT

Attendance	10 marks
Test	20 marks
Exam	70 marks
Total	**100 marks**

TEACHING PLAN

Week	**Topic**
Week 1:	Introduction Definition and methodology of econometrics. Meaning and scope of econometrics. Tutorial
Week 2 &3:	Basic OLS model and its assumptions Simple regression equation specification and its estimation. The BLUE properties of the OLS. Tutorial
Week 4&5:	Violation of underlying assumptions of the basic OLS equation: Serial correlation Violation of underlying assumptions of the basic OLS equation: Heteroscedasticity Violation of underlying assumptions of the basic OLS equation: Multicollinearity Tutorial
Week 6&7:	Violation of underlying assumptions of the basic OLS equation: Endogeneity and its effects Correction of endogeneity problems: Simultaneous equation systems – indirect least squares Tutorial
Week 8&9:	Correction of endogeneity problems: Simultaneous equation systems – 2-stage least squares, etc Tutorial
Week 10&11:	Introduction to simulation and forecasting

	Tutorial
Week 12:	Econometric softwares and their application:, E-VIEWS, GRETL, STATA Tutorial
Week 13:	Revision

READING LISTS

1. Gujarati, Damodar and Dawn, Porter (2008) "Basic Econometrics" 5th Edition McGraw Hill Inc. New York
2. Gujarati, Damodar (2003) "Basic Econometrics" 4th Edition McGraw Hill Inc. New York
3. Salvatore, D and D. Reagle (2001) Statistics and Econometrics Shaum's outlines; 3rd Edition, New York.
4. Wooldridge, J (2005) Introductory Econometrtics: A Modern Approach; 3rd Edition, Pearson Addison Wesley, London
5. Stock, J and M. Watson (2007) Introduction to Econometrics 2nd edition. Pearson Addisson Wesley, London.

TUTORIAL QUESTIONS

1. One of the most important OLS assumptions is that the errors are uncorrelated with the dependent variables. However, there are possible reasons for violation of this assumption.
   (a) List three of these reasons and write short notes on them.
   (b) What are the symptoms of multicollinearity?
   (c) Is multicollinearity a problem? Explain

2. (a) Differentiate between theoretical and applied econometrics

   (b) What are the assumptions underlying Ordinary Least Squares (OLS) method of regression analysis?

3. Given the model below, answer the following questions

$$A = XB + E_1 \quad (1)$$

$$X = AC + W + E_2 \quad (2)$$

where A is the dependent variable, X is the explanatory variable, E is the error term and

   (a) What assumption is violated if OLS regression method is employed for Eqn (1)?
   (b) What are the consequences of fitting OLS regression method for Eqn (1)?
   (c) What are the consequences of endogeneity?
   (d) Specify a better equation and suggest a relevant method of analysis.

4. Differentiate between the following

(a) Econometric and Mathematical relationships

(b) Regression and Correlation Analyses

(c) Stochastic disturbance term and residual term

(d) Endogenous and exogenous variables

5. The following two equations represent a simple macroeconomic model:

$$R_t = a_o + a_1 M_t + a_2 Y_t + u_t$$

$$Y_t = b_0 + b_1 R_t + v_t$$

where R is the interest rate, M is the money supply, and Y is income.

(a) Why is this a simultaneous equation model?
(b) Which are the endogenous and exogenous variables?
(c) Why would the estimates of R and Y equations by OLS give biased and inconsistent parameter estimates?

6. In respect of Question 6 above:

(a) Find the reduced form of the model.

(b) Is the model underidentified, overidentified or just identified and why?

(c) What are the values of the structural coefficients?

7. (a) What are the roles of the stochastic error term (*u)* in regression analysis?

(b) Explain what you understand by the BLUE properties of the OLS.

8. (a) What do we mean by a linear regression model?

(b) List and concisely explain the methodology of Econometrics.

9. Write short notes on the following and state clearly the OLS assumption being violated in each case

(a) Serial correlation

(b) Multicollinearity

(c) Heteroscedasticity

10. (a) What do you understand by the term 'endogeneity'?

(b) What are its consequences in OLS regression analysis?

(c) Give the best way available to deal with the problem of endogeneity bias.

11. (a) List the steps involved in Hausman specification test.

(b) When do economic researchers employ the use of Indirect Least Squares and Two Stage Least Squares?

12. (a) List the steps involved in Two Stage Least Squares method of analysis

(b) Write short note on Vector Autoregressive (VAR) models