CBN COLLABORATIVE POSTGRADUATE PROGRAMME
DEPARTMENT OF ECONOMICS, UNIVERSITY OF NIGERIA NSUKKA
ECONOMETRIC THEORY AND PRACTICE
MODULE SPECIFICATION

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1. **Module Title:** Econometric Theory and Practice

2. **Module Code**: **ECO 506**

3. **Number of credits**: **3**

4. **Level:** M. Sc.

5. **Semester: 2nd**

6. **Pre-requisites for admission to the module**
   The pre-requisite is that the student has a satisfactory knowledge of intermediate quantitative techniques
7. **Module Coordinator:**

8. **Aims**

   Upon completion of the course, students are expected to:

   1. read and understand model-base arguments in textbooks and journal articles as applied in modern economic analysis;
   2. grasp the relevance research analytical experience as often applied in modern economics;
   3. apply standard quantitative techniques to the analysis of economic phenomena and to conduct empirical research;
   4. use econometric softwares for modelling and analysis of real life situations; and
   5. understand the theoretical foundations of quantitative techniques.

9. **Summary of Content**

This course aims to provide a sound foundation in the theory and practice of econometrics for economists. A distinctive feature of the course is its integration of the theoretical developments and practical data analysis. Economic examples with emphasis on African context are consistently used throughout the course to motivate and illustrate the subject matter. Extensive practical work using econometric software packages is an important aspect of the course. It covers topics on (1) classical Regression; (2) Estimation Principles in Econometrics; (3) Model Specification, Selection and Evaluation; (4) Time Series Analysis; and (5) Financial Econometrics; (6) Discrete Choice Models; (10) Panel data analysis.

10. **Module Intended Learning Outcomes (MILOs)**

Upon successful completion of this module, students will be able to:

No.	Milos	Weighting (%)
1	Define the scope and methodology of econometrics	
2	Differentiate between statistical and deterministic relationships with appropriate examples on economic issues.	
3	Apply and determine appropriate estimation principles to economics	

No.	Milos	Weighting (%)
	occurrence	**Refer to no.15**
4	Specify, select and evaluate various forms of models, especially in time series, cross section and panel forms.	
5	Perform time series analysis, while also performing various evaluation tests. Application of relevant estimation techniques such as AR, MA, ARMA, ARIMA, forecasting, ARDL and other co-integration tests, etc.	
6	Use some econometric software to perform classical regression analysis and interpret results	
7	Identify and solve common problems with financial series models such as volatility. Application of relevant estimation techniques such as VAR, ARCH, GARCH, D&Y, etc.	
8	Familiar with the basic concepts in time series and the empirical analysis of time series data including specification and estimation of univariate time series models, ARDL models, unit roots and spurious regression, co-integration and error correction modeling, VAR, ARCH, GARCH models.	
9	Set up, estimate and evaluate models with qualitative and limited dependent variables (including linear probability models, logit, probit, and tobit models)	
10	Apply data analysis (pooled, fixed effects and random effects regression and specification tests) to economics	

11. Teaching and Learning Activities (TLAs)

MILO No.	TLAs	Functions	Hours/Week
1,2,3,4,5,6,7, 8,9,10	Lectures and materials	Course instructors will introduce, with appropriate audio-visual materials, the critical concepts of Econometric through lectures.	**3 hours**
1,2,3,4,5,6,7, 8,9,10	Tutorials (Case study, Group Discussion, Quizzes, presentations, peer review, role play)	Tutorial sessions will introduce experiential forms of learning activities such as case studies, group discussion, presentations, peer review, quizzes and practical session.	**1 hour**
5,6,7,8,9,10	Computer assisted laboratory sessions	Computer assisted laboratory sessions with real data and hands on training	**2 hours**

12. Assessments Tasks/Activities

MILO No.	Type of assessment tasks/activities	Weighting (if applicable)	Remarks
1,2,3,4,5,6,7,8 ,9,10	**Examination** Students are required to participate in a three-hour examination to test their acquisitions of concepts and knowledge.	60%	
1,2,3,4,5,6,7,8	**Written Test/Quizzes**	20%	Week 7/On Going

,9,10	1-hour written test/Pop Quizzes		basis
1,2,3,4,5,6,7,8,9,10	**Assignments** Assessment comprising group work assignment and individual assignment.	20%	Case study analysis and computer-based Report on Quantitative Methods

13. Attendance Requirements

Students are required to attend 75% of lectures, tutorials and computer laboratory sessions.

14. Contribution to Programme Learning Outcomes

No	PILOs	MILO No
1	develop in the students a thorough knowledge and applied competence in the fundamentals of Economics.	**1,2,3,4,5,6,7,8,9, 10**
2	develop in the students an ability to critically appraise alternative systems of Economics.	**1,2,3,4,5,6,7,8,9, 10**
3	equip students with economic theories that will lead to expertise in Economics	**1,2,3,4,5,6,7,8,9, 10**
4	provide training to qualified graduates of economics and to other individuals whose prior training or experience has made them capable of playing a leadership role in the economics profession	**1,2,3,4,5,6,7,8,9, 10**
5	equip students with the ability to analyze and undertake course of action to improve organisational performance using financial, operational and strategic perspectives and frameworks learned in the coursework and experience	**1,2,3,4,5,6,7,8,9, 10**
6	prepare students for managerial positions in the industries, as well as other related organizations	**1,2,3,4,5,6,7,8,9, 10**
7	prepare participants for positions as consultants, advocates, analysts, or directly as policy makers in the public and private sector	**1,2,3,4,5,6,7,8,9, 10**
8	Inculcate the requisite intellectual/conceptual foundations that will permit meaningful participation in the discussion or resolution of the problems which confront the Economics discipline in the contemporary word;	**1,2,3,4,5,6,7,8,9, 10**
9	encourage research into problems which impede the maximum contribution of Economics to national development and well-being of the people	**1,2,3,4,5,6,7,8,9, 10**
10	develop skill in logical reasoning and critical analysis and improve the capacity students in formulating sound economic policies and strategies	**1,2,3,4,5,6,7,8,9, 10**

15. Grading of Student Achievement

Letter Grade	% Mark	Grade Definitions	Remarks
A	70-100	**Excellent**	Demonstrate excellent understanding of the subject matters.
B	60-69	**Good**	Demonstrate a good understanding of the subject matters, though missing some of the points.
C	50-59	**Adequate**	Demonstrate an adequate understanding of the core of the subject matters.
F	<50	**Fail**	Demonstrate a wrong understanding of the subject matter.

16. Resources

Suggested primary texts

No	Name of Author(s)	Year of Publication	Title of Book	Edition	Publisher's Name	ISBN
1	Enders, W.	2014	Applied Econometric Time Series	4th Edition	John Wiley & Sons	978-1-118-80856-6
2	Greene W. H.	2011	Econometric Analysis	7th Edition	Prentice Hall	0-13-139538-6
3.	Hill R. C., W.E. Griffiths and G.C. Lim	2011	Principles of Econometrics	4th Edition	Wiley	978-0-470-62673-3
4.	Wooldridge, J. M.	2013	Introductory Econometrics: A Modern Approach	5th Edition	Cengage Learning	0-13-978-1-111-53104-1
5	Gujarati, D.N. & Porter, D.C.	2008	Basic Econometrics	6th Edition	McGraw Hill Education	9780073523163
6	Adenikinju, A., Busari, D. & Olofin, S.	**2009**	Applied Econometrics and Macroeconometric Modelling in Nigeria	1st Edition	Ibadan University Press	978-121-464-3

Suggested secondary texts

No	Name of Author(s)	Year of Publication	Title of Book	Edition	Publisher's Name	ISBN
1	Adkins, L. C.	2014	Using GRETL for Principles of Econometrics	4th Edition	Free online textbook	na
2	Adkins, L. C. and Hill	2008	Using Stata for Principles of Econometrics		Stata Press	978-111-803208-4
3	Baltagi, B.,	2011	Econometrics	5th Edition	Springer	978-3-540-76515-8
4	Gujarati D. N. and D. C. Porter	2009	Basic Econometrics	5th Edition	McGraw Hill	978-0-07-337577-9
5	Harris, R.	2003	Applied Time	Latest	Wiley	0-470-84443-4

No	Name of Author(s)	Year of Publication	Title of Book	Edition	Publisher's Name	ISBN
	and R. Sollis		Series Modelling and Forecasting	Edition		
6	Johnston, J. and J. DiNardo	1997	Econometric Methods	4th Edition	McGraw-Hill	0-070-32720-3
7	Maddala, G. S, and K. Lahiri	2010	Introduction to Econometrics	4th Edition	Wiley	978-0-470-01512-4
8	Maddala, G.S.	1985	Limited Dependent and Qualitative Variables in Econometrics	Latest Edition	Cambridge University Press, New York.	978-0-511-81017-6
9	Mukherjee, C., H. White and M. Wuyts	1998	Econometrics and Data Analysis for Developing Countries	Latest Edition	Routledge: London (with data diskette).	978-1-315-00358-0
10	Verbeek, M.	2013	A Guide to Modern Econometrics	4th Edition	Wiley Publishers	0-470-85773-0
11	Woodward, W. A, H., L. Grey & A. C. Elliott	2011	Applied Time Series Analysis	Latest Edition	CBC Press	978-1-498-73422-6
12	Wooldridge J.M	2010	Econometric Analysis of Cross Section and Panel Data	Latest Edition	MIT Press	978-0-262-23258-6
	Additional econometrics resources are available at http://econometricslinks.com. And http://www.economicsnetwork.ac.uk/					

Econometric Software requirements

STATA and Eviews are highly recommended statistical packages which are excellent for modern data analysis as well as for standard econometric applications (including time series analysis).

Open source alternatives are
GRETL: (http://gretl.sourceforge.net/), R (http://www.r-project.org/) and
OCTAVE: (https://www.gnu.org/software/octave/).

Other recommended Econometric/statistical software packages include
R-Software
RATS,
LIMDEP,
MICROFIT,
MATLAB,
GAUSS

Oxmetrics and
SHAZAM.
Note that, at the start of the course, students need to be given an introduction to the appropriate software package.

Suggested Journals
*****Econometrica
*The Econometrics Journal
*Journal of Econometrics
*Journal of Econometric Methods
*Econometric Reviews
*Econometric Theory
*CBN Journal of Applied Statistics

Facilities Requirements
A lecture room with appropriate teaching and econometric laboratory facilities