

Faculty	Management and Social Science	
Department	Economics	
Course Title	Applied Econometrics	
Year of Study	4	
Course Code	ECN 411	
Credit Hours	2	
Contact Hours	30	
Mode of Delivery	Classroom Lectures	
Mode of Assessment		Weight
Continuous Assessment		30%
Final Examination		70%
Total		100%
Course Lecturer	Mr. D.O. AKINBODE	
Course Description	Applied Econometrics is a course designed to provide undergraduate students with the essential tools and techniques for analyzing economic data and testing economic theories. The course focuses on the application of statistical methods to economic data, with an emphasis on empirical analysis and interpretation. Through lectures, readings, and hands-on exercises, students will learn how to collect, manage, and analyze data using econometric software packages such as, EXCEL, SPSS, EVIEWS, STATA, R, e.t.c	
Course Objectives	<p>The objectives of this course include to:</p> <ol style="list-style-type: none"> 1. Understand the fundamental concepts and principles of econometrics, including statistical inference and hypothesis testing. 2. Develop proficiency in using econometric software packages such as EXCEL, SPSS, EVIEWS, STATA, R, for data manipulation, analysis, and visualization. 3. Acquire skills in collecting, managing, and preprocessing economic data from various sources, including governmental databases, surveys, and academic literature. 4. Gain knowledge of different types of economic data and their characteristics, such as cross-sectional, time series, and panel data. 5. Learn how to specify, estimate, and interpret simple and multiple regression models to analyze relationships between economic variables. 6. Identify and diagnose violations of classical regression assumptions, such as multicollinearity, heteroscedasticity, and autocorrelation, and apply appropriate remedies. 	
Learning Outcomes	By the end of the course, students will be able to:	

	<ol style="list-style-type: none"> 1. Demonstrate a thorough understanding of the fundamental concepts and principles of econometrics, including statistical inference and hypothesis testing, through application to real-world economic data. 2. Develop proficiency in utilizing a variety of econometric software packages, such as EXCEL, SPSS, EVIEWS, STATA, R, for effective data manipulation, analysis, and visualization in the context of economic research and analysis. 3. Acquire the necessary skills to collect, manage, and preprocess economic data from diverse sources, including governmental databases, surveys, and academic literature, ensuring data quality and reliability for empirical analysis. 4. Demonstrate knowledge of the different types of economic data and their characteristics, including cross-sectional, time series, and panel data, and apply appropriate econometric techniques tailored to each data type. 5. Apply the principles of model specification, estimation, and interpretation to simple and multiple regression models, effectively analyzing relationships between economic variables and drawing meaningful conclusions from the results. 6. Identify and diagnose violations of classical regression assumptions, such as multicollinearity, heteroscedasticity, and autocorrelation, and apply suitable remedies or alternative techniques to ensure the validity and reliability of econometric analysis. 	
Teaching and Learning	The class will meet for two hours every week for a combination of both the lecture hours and tutorials.	
Detailed Course Content	The course entails topics such as understanding data, time series analysis and techniques including trend analysis, correlation analysis, other descriptive analysis, unit root test, cointegration test, estimation and post estimations such as ECM, ARDL, VAR, VECM, panel analysis: static and dynamic	
	Course Content Sequencing	
Weeks	Detailed Course Outline	Allocated Time
Week 1	<p>*Understanding data and data management</p> <ul style="list-style-type: none"> • Types of data set used in analysis • Nature of data set • Arrangement and sorting of data • Mining and transformation of data • Sourcing and archiving of data 	

Week 2	<p>*Descriptive analysis of data set</p> <ul style="list-style-type: none"> • Trend analysis • Measure of central tendencies • Measure of dispersion • Skewness, Peakedness and Normality analysis 	
Week 3,4	<p>*Preliminary test: Unit root test</p> <ul style="list-style-type: none"> • Rationale for unit root test • Types of unit root test • Modeling of unit root (with drift, without drift, with trend) • Order of integration 	
Week 5	<p>*Preliminary analysis: Cointegration test</p> <ul style="list-style-type: none"> • Rationale for cointegration • Conditions for cointegration • Types of cointegration • Interpretation and evaluation of cointegration test 	
Week 6,7	<p>* Times series estimation techniques</p> <ul style="list-style-type: none"> • Error correction model (ECM) estimation • Autoregressive distributed lag (ARDL) estimation • Vector Autoregressive (VAR) estimation • Vector Error correction model (VECM) estimation <p>*Continuous Assessment I</p>	
Week 8, 9	<p>* Panel data preliminary test</p> <ul style="list-style-type: none"> • Panel unit root test: estimation and interpretation • Panel cointegration test: estimation and interpretation 	
Weeks 10	<p>* Panel estimation techniques: Statics Models</p> <ul style="list-style-type: none"> • Pooled OLS estimation and interpretation • Fixed effect LSDV estimation and interpretation • Random Generalized least square (GLS) estimation and interpretation • Restricted poolability F-test • Hausman test <p>* Continuous Assessment II</p>	
Week 11	<p>*Panel estimation techniques: Dynamic Models</p> <ul style="list-style-type: none"> • Panel autoregressive distributed lag (ARDL) estimation and interpretation (pooled mean group, mean group dynamic fixed effect) 	

	<ul style="list-style-type: none"> • Panel VAR estimation • Panel VECM estimation 	
12	*Revision	
13,14	Examination	
<p>Recommended Reading Material</p> <ol style="list-style-type: none"> 1. Gujarati, D. N. (2008). Basic Econometrics (5th ed.). McGraw-Hill Education 2. Wooldridge, J. M. (2021). Introductory Econometrics: A Modern Approach (7th ed.). Cengage Learning. 		