Policy for Make-Up Classes:

- Utilize the open slots in consultation with students
- Swap classes with colleagues

Recommended References

1. Becker, G. S. (1994). *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education*. University of Chicago Press.
2. Borjas, G. J. (2015). *Labor Economics* (7th ed.). McGraw-Hill.
3. Bowen, W. G., & Finegan, T. A. (2015). *The Economics of Labor Force Participation*. Princeton University Press.
4. Filer, R. K., Hamermesh, D. S., & Rees, A. E. (1996). *The Economics of Work and Pay*. HarperCollins College Div.
5. Laing, D. (2011). *Introduction to Classic and the New Labor Economics*, W. W. Norton & Company.
6. Lavitan, S. A. (1976). *Human Resources and Labor Markets* (2nd ed.). Harper.
7. Rees, A. (1989). *The Economics of Trade Unionism* (3rd ed.).University of Chicago Press.

***Course Code*: ECON 508**	***Course Title*: Econometrics – Methods and Applications**

Course Type (GED/Core/Elective): Core
Year/Level/Semester/ Term: One Year
Academic Sessions: 2021-22 & 2022-23
Course Teacher/ Instructor:
Pre-requisite (if any): None
Credit Hours: 04
Contact Hours: 60

*[Students shall be required to complete a 25-mark **Term Paper** involving multivariate analysis and the use of statistical data analysis software. The Term Paper should show some originality through utilization of new data from primary or secondary sources.]*

Course Rationale: Further higher studies in economics as well as carrying out empirical research in the field of economics require a great deal of expertise in research methodology and econometric tools. This course is, therefore, a must for students aiming for a teaching or research career at the highest level.

Course Objective: This course is an upgrade of the Introduction to Econometrics course. It builds on the classical linear model to cover more sophisticated empirical techniques/methods to deal with cross-section, time series and panel data. The course also discusses methods to deal with qualitative dependent and independent variables.

Course Learning Outcomes: After successful completion of the course, students will be able to understand and analyze, among other issues, the following:

1. the general linear model;
2. methods to deal with data that may have non-constant variance;
3. methods dealing with serial correlation;
4. the use of dummy dependent and independent variables;
5. dynamic lag models;
6. simultaneous equations including the endogeneity and exogeneity problems; and
7. time series models including cointegration and error correction models.

CLOs Mapped to PLOs

CLO/PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6
CLO1	0	3	3	3	3	2
CLO2	0	0	3	3	3	2
CLO3	0	2	3	3	3	3
CLO4	0	1	3	3	3	0
CLO5	0	3	3	3	3	2
CLO6	0	2	3	3	3	1
CLO7	0	0	3	3	3	2

Course Contents

Topic	Content Summary	Teaching Strategies/Tools	In-Class Assessment	Contact Hours	CLOs
1	**Review of the Classical Regression Model and consequences of violations of the classical assumptions**	**Strategies**: Verbal, graphical and mathematical exposition **Tools**: Books; Handouts; Multimedia; Online resources	Q&As; Quizzes; Homework; Assignments; Presentations; Tutorials	6	1, 2, 3
2	**Simultaneous-Equation Models:** The Nature of Simultaneous Equations; Simultaneous-Equation Bias; Identification Problem; Indirect Least Squares (ILS); Two-Stage Least Squares (2SLS); Instrumental Variable (IV) Method; Recursive Models.			10	6
3	**Nonlinear Models:** a. Binary response models: LPM, Logit, Probit b. Multinomial and ordered response models c. Count data models d. Models for censored and truncated data	As above	As Above	10	4
4	**Time Series Econometrics:** The Evolution of Time Series Econometrics; ARIMA Models; Stationarity vs. Non-Stationarity; Unit Root Stochastic Process; Trend Stationarity vs. Difference Stationarity; Test of Stationarity: DF, ADF, PP and KPSS Tests; Cointegration: the Engle-Granger Procedure; the Johansen-Juselius Procedure; Granger Causality; VAR and Error Correction Models; ARCH, GARCH models.	As above	As Above	12	7
5	**Dynamic Econometric Modelling:** The Role of Lags in Economics; Autoregressive Distributed Lag (ARDL) Modelling; Koyack Lag Structure; Adaptive Expectations Models; Stock Adjustment, or Partial Adjustment Models; Almon Lag Structure; Applications: Rational Expectations Models.	As above	As Above	12	5, 7
6	**Panel Data Analysis:** Fixed Effect Models; Random Effect Models.	As above	As Above	6	1, 5, 7

Class Schedule:

Lesson Plan

Week(s)	Topic(s)	#Classes	CLO(s)	Remarks
1 – 3	1	1 – 6	1	
4 – 8	2	7 – 16	6	
9 – 13	3	17 – 26	4	***Class Test 1***: (**Topics 1 – 2**) 17th Class
14 – 19	4	27 – 38	7	
20 – 25	5	39 – 50	5, 7	***Class Test 2***: (**Topics 3 – 4**) 39th Class
26 – 28	6	51 – 56	1, 5, 7	***Class Test 3***: (**Topic 5**) 51st Class
29 – 30	**1 - 6**	57 – 60		***Review***

Overall Evaluation Policy:

a. **Continuous Internal Evaluation (CIE): Marks - 00**

b. **Year-End Examination (YEE): Marks - 100**

Bloom's Category	Marks (100)
Remember	**10**
Understand	**30**
Apply	**30**
Analyze	**10**
Evaluate	**10**
Create	**10**

c. **Grading Scheme:** ***As in Section 19***

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Main texts

1. Wooldridge, J. M. (2010). *Econometric Analysis of Cross Section and Panel Data* (2nd ed.). The MIT Press.
2. Enders, W. (2014). *Applied Econometric Time Series* (4th ed.). Wiley.
3. Greene, W. G. (2012). Econometric Analysis (7th ed.), Pearson.

Recommended References

1. Gujarati, D. N. and Sangeetha (2002). *Basic Econometrics* (4th ed.). McGraw-Hill.
2. Johnston, J., & Dinardo, J. (1997).*Econometric Methods* (4th ed.). McGraw-Hill.
3. Wooldridge, J. M. (2016). *Introductory Econometrics: A Modern Approach* (6th ed.). Cengage Learning.
4. Kennedy, P. (2013). *A Guide to Econometrics*. Blackwell Publishing.
5. Hill, R. Carter.; Griffiths, W. E. & Lim, G. C. (2018). Principles of Econometrics, Wiley.