

Course Code: ECON 304**Course Title: Introduction to Econometrics****Course Type (GED/Core/Elective):** Core**Year/Level/Semester/Term:** 3rd Year**Academic Session:** 2021-22 & 2022-23**Course Teacher/Instructor:****Pre-requisite (if any):** ECON 104**Credit Value:** 04**Contract Hours:** 60

Course Rationale: Empirical work often requires estimation of parameters of equations which requires knowledge of econometrics. Detection of regime changes or structural breaks in the data will also be possible with the help of econometrics.

Course Objectives: The main objective of the course is to demonstrate how ordinary least square s (OLS) method is applied to estimate equation parameters. Students will also learn about the consequences of the violations of the OLS assumptions, the problems of the OLS estimation, and the remedial measures with the help of alternative estimation methods.

Course Learning Outcomes: After successful completion of the course, students will be able to:

1. differentiate between statistical and deterministic models;
2. differentiate between sample and population regression functions;
3. state the properties of a good estimator;
4. apply dummy variable approach to identify structural breaks in the data; and
5. handle simultaneity problem with indirect least square method

CLOs Mapped to PLOs

CLO/PLO	PLO1	PLO2	PLO3	PLO4	PLO5	PLO6	PLO7	PLO8	PLO9
CLO1	3	3	3	3	3	3	3	3	3
CLO2	3	3	3	2	3	3	2	3	3
CLO3	3	3	2	2	3	3	2	3	3
CLO4	3	3	2	3	3	3	2	3	3
CLO5	3	3	3	3	2	2	3	3	2

Course Contents

Topic	Content Summary	Teaching Strategies/Tools	In-Class Assessment	#Class Hours	CLOs
1	Review of Statistical Concepts: Random variables; Sampling distributions; Estimation and hypothesis testing .	Strategies: Verbal and mathematical exposition. Tools: Books; Handouts; Multimedia; Online resources	Q&As Quizzes Homework Assignments Presentations Tutorials	6	1
2	Introduction to Econometrics: What is Econometrics? Types of data; Deterministic and stochastic models; Reasons for including the disturbance term; Estimates and estimators; Interpreting a Regression Equation.	As above	As above	6	2

3	The Classical Linear Regression Model: Bivariate & multivariate Models – Assumptions; The OLS estimators; Derivation of OLS estimators; Properties of OLS estimators; Unbiasedness, efficiency, linearity – the BLUE properties of the OLS estimators; Normality Assumption; Estimating population parameters of a regression Model; Tests of population parameters; Dummy independent variable & its applications.	As above	As above	8	2, 3
4	Violations of the Classical Assumptions: a) Heteroscedasticity - identification, detection, consequences and remedies; b) Autocorrelation - identification, detection, consequences and remedies; c) Multicollinearity - identification, detection, consequences and remedies. d) Specification errors and their consequences; endogeneity and instrumental variables (IV) estimation	As above	As above	8	2, 3
5	Introduction to time series analysis	As above	As above	6	3, 4

Class Schedule:

Lesson Plan

Week(s)	Topic(s)	#Classes	CLO(s)	Remarks
1 – 3	1	1 – 6	1	
4 – 6	2	7 – 12	2	
7 – 10	3	13 – 20	2, 3	Class Test 1: (Topics 1 & 2) 13th Class
11 – 14	4	21 – 28	2, 3	
15 – 17	5	29 – 34	3, 4	Class Test 2: (Topics 3 & 4) 29th Class
18 – 20	6	35 – 40	3, 4	
21 – 22	7	41 – 44	4, 5	Class Test 3: (Topics 5 & 6) 41st Class
23 – 25	8	45 – 50	4, 5	
26 – 28	9	51 – 56	4, 5	
29 – 30	1 - 9	57 – 60		Review

Overall Evaluation Policy:

- Continuous Internal Evaluation (CIE): Marks - 00**
- Year-End Examination (YEE): Marks - 100**

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

- Grading Scheme: As in Section 19**

Policy for Make-Up Classes:

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

Basic Text

1. Gujarati, D. N. (2002). *Basic Econometrics* (4th ed.). McGraw Hill.

Recommended References

1. Hill, R. Carter.; Griffiths, W. E. & Lim, G. C. (2018). *Principles of Econometrics*, Wiley.
2. Kennedy, P. (2013). *A Guide to Econometrics*. Blackwell Publishing.
3. Wooldridge, J. M. (2016). *Introductory Econometrics: A Modern Approach* (6th ed.). Cengage Learning.

Other Resources

- Online video lectures
- Course-packs
- Handouts