Course title: Econometrics 2

Course code: UEO 304	**No. of credits:** 4	**L-T-P:** 44-16-0	**Learning hours:** 60

Pre-requisite course code and title (if any): UEO 303 Econometrics 1

Department: Department of Policy and Management Studies

Course coordinator: Dr. Malvika Tyagi	**Course instructor:** Guest Faculty

Contact details: malvika.tyagi@terisas.ac.in

Course type: Core	**Course offered in:** Semester 6

Course description:
The course is a follow up course to econometrics 2. It discusses data issues, endogeniety problems and instrumental variable regression, limited dependent variable models, pooled cross section models and panel data models.

Course objectives:
1) To advance the understanding of econometrics further.
2) To understand how econometric concepts can be applied and studied in the context of economic analysis.

Course contents

Module	Topic	L	T	P
1	**Data Issues** Measurement error, Missing Data and Outliers	8	2	
2	**Instrumental variable regression** Recap of endogeniety issues due to omitted variable bias, instrument in multiple linear regression, 2 stage least squares estimation, weak instrument, 2SLS with heteroskedasticity and proxy variables.	12	5	
3	**Limited Dependent variable models** Linear Probability Models, Logit and Probit model	12	5	
4	**Pooled Cross section models** Pooling independent cross-sections across time, policy analysis using pooled cross-sections	12	4	
	Total (in hours)	44	16	

Pedagogical Approach:
Classroom teaching and problem-solving sessions.

Evaluation criteria

5. Minor 1: Written Examination - 25% [Syllabus: 1-2, Learning outcomes: 1-3]
6. Minor 2: Written Examination - 25% [Syllabus : 3-4 , Learning outcomes: 1-3]
7. Major : Written Examination - 50% [Syllabus: Complete course, Learning outcomes: 1-3]

Learning outcomes

At the end of the course, the students will be able to:

1) Understand the core concepts of econometrics [Modules 1-4]
2) Understand economic applications of econometric methods [Modules 1-4]
3) Formulate econometric models, interpret them and use them for economic analysis [Modules 2-4]

Core reading:

1) Wooldridge, J. (2023). Introductory Econometrics: A modern approach, 7th *ed*. Cengage Learning. [JW]

Additional readings:

1) D. N. Gujarati, Basic Econometrics, 5th Edition, McGraw Hill, International Edition, 2010. [DG]
2) Dougherty, C. (2011). Introduction to econometrics, 4th ed. Oxford University Press. [CD]

Module-wise chapters from the core readings:

1. Module 1: JW, Chapter 9
2. Module 2 : JW, Chapter 15
3. Module 3: JW, Chapters 7.5, 17.1 and 17.2
4. Module 4: JW, Chapter 13

Student responsibilities: Attendance, feedback, discipline: as per university rules.

Course prepared by: Dr Priyanka Arora

External Reviewers:

- Dr. Anshika Sagar, Assistant Professor, Department of Economics, Hindu College, University of Delhi.
  Dr. Mrinalini Jha, Professor, Jindal School of Government and Public Policy, Jindal Global University.