**WORKPLAN**

**B.A. Hons. Economics**

**SEM VII: Quantitative Methods (DSE)**

**Name of Instructor: Prof. Indu Choudhary**

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| **TOPIC** | **REFERENCE** | **TENTATIVE DATE** |
| Causality vs. Correlation, Potential Outcomes Framework, Randomized Control Trials (RCTs) | Angrist & Pischke, Mastering Metrics (2014) | August 1st- 3rd week |
| Pooled OLS vs Panel Data Models, Fixed Effects vs Random Effects Models | Stock & Watson, Introduction to Econometrics Fourth Editon Chapters 10 | August 4th week |
| Linear Probability Model (LPM) and its Limitations, Logit and Probit Models, High Dimensional and High Frequency data and its applications in Economic Research | Stock & Watson, Introduction to Econometrics Fourth Editon Chapters 11 and 14 | September 1st- 3rd week |
| Stationarity and Unit Roots, Autoregressive(AR) and Moving Average(MA) Models, ARIMA Models and Forecasting  | Stock & Watson, Introduction to Econometrics Fourth Editon Chapter 15 | September 4th week |
| Primary vs. Secondary Data, Survey Design and Sampling, Understanding Economic and Social Datasets | Kosuke Imai, Quantitative Social Science: An Introduction (2018) Section 3.4 “Survey Sampling” (this is the original version which uses R; versions which use STATA or tidyverse are also available) Stantcheva, S. (2023). How to run surveys: A guide to creating your own identifying variation and revealing the invisible. Annual Review of Economics, 15(1), 205-234. | October 1st week |
| Instrumental Variables (IV), Regression Discontinuity Design (RDD), Difference-in-Differences (DiD), Matching Methods (Propensity Score Matching, Synthetic Controls), Case Studies and Applications | Angrist & Pischke, Mastering Metrics (2014) Cunningham, S. Causal inference: The Mixtape (2021) (“Matching and Subclassification” Chapter for Matching Methods) | October 2nd week- November 3rd week  |
| Practical & Lab Sessions: Introduction to a software like R/Python etc (Data Wrangling, Visualization, Regression Analysis), Working with Large Datasets (Census, NSS, NFHS, Satellite Data, etc.), Empirical Project: Analyzing a Research Question Using Real Data, Replication of Empirical Papers Using Indian Data Sources |