

Discipline Specific Elective 23 (DSE-23): Forecasting Methods for Economics

Semester	Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
			Lecture	Tutorial	Practical/ Practice		
VI/VIII	Forecasting Methods for Economics – ECON053	4	3	1	0	Class 12 th Pass	Basic Econometrics (ECON024)

Learning Objectives

The Learning Objectives of this course are as follows:

- This course builds on the compulsory Basic Econometrics course and teaches students a broad set of commonly used econometric methods for forecasting econometric variables.
- These include both quantitative and qualitative Forecasting Techniques including VAR, VECM, ARIMA etc.

Learning outcomes

The Learning outcomes of this course are as follows:

- Students will learn the theoretical and practical basis for forecasting techniques widely used in empirical research and consider their application in a wide range of problems.

Syllabus

UNIT I: Basics of Forecasting (6 hours)

Tools for forecasting, forecasting methods and applications, forecast horizon

UNIT II: Quantitative Forecasting Techniques (9 hours)

Definition, Time Series-Naïve, Average, Simple Moving Average, Weighted Moving Average, Exponential Smoothing; Forecast Errors Accuracy, Trend Projection, Seasonal Indexes, Holt's, winter's Model, Linear Regression. Smoothing Techniques, Exponential smoothing methods, Decomposition methods.

UNIT III: Box-Jenkins Methodology: Unit roots; Autoregressive models, moving average models, mixed autoregressive and moving average models; Identification, estimation, diagnostic checking and Forecasting (9 hours)

UNIT IV: Forecasting with Multiple Regression Models (6 hours)

UNIT V: Cointegration, Granger Causality, Error Correction (6 hours)

UNIT VI: Qualitative Forecasting Techniques (9 hours)

Definition, Delphi, Precautions in administering Delphi, Sales force composite, Consumer Panel Survey, Nominal group, and their Drawbacks.

Recommended readings

- Spyros G. Makridakis, Steven C. Wheelwright, Rob J Hyndman (2008), Forecasting: Methods and Applications, Wiley Publications.

- Dimitrios Asteriou and Stephen G. Hall, 4th edition, Applied Econometrics, 2021, PalgraveMacmillan.
- Hyndman, R.J., & Athanasopoulos, G. (2021) Forecasting: principles and practice, 3rd edition, OTexts: Melbourne, Australia.OTexts.com/fpp3.
- Asteriou, D and Hall, Stephen G, Applied Econometrics, 4th Edition, 2021, Palgrave Macmillan.
- James Stock and Mark Watson, Introduction to Econometrics, 4th Edition, 2019, Pearson.
- Wooldridge, J. (2014). Introduction to econometrics: A modern approach, 5th ed. Cengage Learning.
- Gujarati, D., Porter, D. (2012). Basic econometrics, 5th ed.McGraw-Hill.
- Badi H. Baltagi, Econometrics, 5th Edition, 2011, Springer.
- J. Johnston and J. DiNardo (2001), Econometric Methods, Fourth Edition, Irwin McgrawHill
- G.S. Maddala and Kajal Lahiri, Introduction to Econometrics, 4th Edition, 2012, Wiley.
- Diebold, F.X. (2017), Forecasting, Department of Economics, University of Pennsylvania.

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.