

UNIVERSITY OF MADRAS
M.A. DEGREE PROGRAMME IN ECONOMICS
SYLLABUS WITH EFFECT FROM 2023-2024

501C3D

SEMESTER – III - CORE – X

ECONOMETRIC METHODS

Course Objectives:

1. To provide an understanding on the knowledge of Econometrics and its use for Economists and social scientists, how economic theories are used to test empirical data.
2. To provide in depth knowledge on the Econometric models and to examine the meaning and applicability of dummy variables and to recall the basic methods of time series data.

Unit I: Basic Regression

Analysis nature and scope of econometrics – simple regression model: specification, OLS method, assumptions of CLRM and Gauss Markov theorem, hypothesis testing and goodness of fit – extensions of simple regression model: regression through origin, scaling and units of measurement, functional forms of regression model – maximum likelihood estimation.

Unit II: Dummy Variable

Dummy Variables- Nature of Dummy Variables- ANOVA Models, ANCOVA Models- Dummy Variable alternative to Chow test- Uses of Dummy Variables Seasonal Analysis-Piecewise Linear Regression. Qualitative response Regression Model- Linear Probability Model, Logit Model, Probit Model, Tobit Model.

Unit III: Dynamic Econometric Model

Dynamic Econometric Model: Autoregressive model and Distributed lag model – Estimation of Distributed Lag Models, The Koyck approach to Distributed—Lag models-Adaptive Expectations Model, Partial Adjustment Model. Estimation of Autoregressive Model- Almon approach to Distributed-Lag Models.

Unit IV: Simultaneous Equation Model

Simultaneous Equation Model-Simultaneous equation bias- Identification Problem-Rules for Identification- Test of Simultaneity-Test of Exogeneity.Simultaneous Equation Methods- Recursive models and ordinary least squares- Methods of Indirect Least squares-Method of Two-Stage least squares– Generalized least squares.

Unit V: Time Series Econometrics

Introduction to Time Series Econometrics: Stochastic Process - Stationary and Non Stationary stochastic process-Unit root stochastic process- Trend stationary and difference stationary

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stochastic process-Integrated stochastic process – Properties- Unit root tests – Cointegration Model.

Text Books:

1. Damodar N. Gujarati & Sangeetha (2019) Basic Econometrics Tata McGraw-Hill Publishing company Limited New Delhi
2. K. Dhanasekaran (2012) Econometrics, Vrinda Publications.

References:

1. Gujarathi, D.N. (2005), Text Book of Econometrics [McGraw-Hill, New Delhi].
2. Kalirajan, K.P. (1995), Applied Econometrics [Oxford and IBH, New Delhi].
3. Suresh, J. Ghosh (1994), Econometric Theory and Applications [Prentice Hall of India, New Delhi],

Web Resources:

1. <https://learneconometricsfast.com>.
2. <https://inomics.com>.
3. <https://economicsnetwork.ac.uk>.

COURSE OUTCOMES:

Upon Completion of this course, the students will be able to

No.	Course Outcomes	K-Levels
CO1	Examine the meaning and applicability of dummy variables	K1, K2, K4
CO2	Estimate the Auto Regressive model and the role of lags in dynamic econometric models	K4, K5
CO3	Identify the problems of ignoring OLS assumptions	K3, K4
CO4	Gain in-depth knowledge in Simultaneous equation models	K2, K4
CO5	Analyze the stochastic process and cointegration model	K3, K5

K₁ – Knowledge, K₂ - Understand, K₃ – Apply, K₄ – Analyse, K₅ – Evaluate, K₆ – Create.

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CO-PO Mapping (Course Articulation Matrix)

CO/PSO	PSO 1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	3	3	2
CO2	3	2	3	3	3
CO3	3	3	3	3	3
CO4	3	2	3	3	3
CO5	3	3	3	2	3
AVERAGE	15	13	15	14	14
Weighted percentage of Course Contribution to Pos	3.0	2.6	3.0	2.8	2.8

Level of Correlation between PSO's and CO's

A(Suggested by UGC as per Six Sigma Tool – Cause and Effect Matrix)

Assign the value

1 – Low

2 – Medium

3 – High

0 – No Correlation