SEMESTER I

Core Course

EM 010105 - BASIC ECONOMETRICS

OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 50 MARKS

Answer all Questions (Each question carries 5 marks)

- 1. Estimate the coefficients of a simple regression model (CO 1)
- 2. Explain properties and assumptions of simple regression model (CO 1)
- 3. Estimate the coefficients of a multiple regression model including dummy variables (CO 2)
- Explain dummy variables with example and how the coefficients are interpreted? (CO 2)
- 5. Evaluate consequences of violation of assumptions of CLRM (CO 3)
- 6. Explain the remedial measures of violations of assumptions of Classical Linear Regression Model (CO 3)
- 7. Explain SEM (CO 4)
- 8. Estimate the Simultaneous Equation Models by resolving the problem of identification (CO 4)
- 9. Evaluate different approaches for distributed lag models (CO 5)
- 10. Examine Autoregressive models. (CO 5)



SEMESTER I

Core Course

EM 010102 – MACROECONOMIC THEORY 1

OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 50 MARKS

Answer all Questions (Each question carries 5 marks)

- 1. What do you mean by classical macroeconomics? (CO 1)
- 2. Explain IS -LM and examine how both curves are sloped with reason? (CO 1)
- 3. Explain Keynes criticism on classical economic theory. (CO 2)
- 4. Differentiate between classical and Keynesian approaches to macroeconomic theories? (CO 2)
- 5. Evaluate Accelerationist Hypothesis and NAIRU- Policy Implications. (CO 3)
- 6. Examine Monetarism and The Philips Curve with real life problems, (CO 3)
- 7. Critically examine monetary policy in NCM, (CO 4)
- 8. Evaluate macroeconomic policy issues. (CO 4)
- 9. Examine Efficiency Wage Theories of Involuntary Unemployment(CO 5)
- 10. Explain New Classical New Keynesian Synthesis(CO 5)



SEMESTER I

Core Course

EM 010104-MATHEMATICAL METHODS FOR ECONOMETRIC ANALYSIS 1

OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 50 MARKS

Answer all Questions (Each question carries 5 marks)

- 1. Explain economic application of matrices. (CO 1)
- 2. Solve national income model using solving system of linear equations method. (CO 1)
- 3. Derive IS-LM Model mathematically using Matrix and determinants. (CO 2)
- 4. Solve market equilibrium and find equilibrium demand, supply and price using Cramer's rule. (CO 2)
- 5. Examine quadratic forms and definiteness of quadratic forms. (CO 3)
- 6. What does rank of matrix refer to? Explain row echelon form of a matrix. (CO 3)
- 7. Evaluate different properties of determinant with solved examples. (CO 4)

Find eigen value and eigen vector. (CO 4)

- 9. Explain application of one variable calculus to Economics(CO 5)
- 10. Geometric representation of functions:

5)

$$Y = 2x$$
$$Y = x^{2}$$
$$Y = x^{3} (CO)$$



SEMESTER I

Core Course

EM 010101 – MICROECONOMIC THEORY 1

OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 50 MARKS

Answer all Questions (Each question carries 5 marks)

- 1. How do you maximize utility of your consumers? The consumer may consider purchasing more of one item and less of another. Through maximizing utility, the consumer will buy an item that produces the greatest marginal utility with the least amount of spending. (CO 1)
- How do you maximise utility equations?
 When multiple products are being chosen, the condition for maximising utility is that a consumer equalises the marginal utility per pound spent. The condition for maximising utility is: MUA/PA = MUB/PB where: MU is marginal utility and P is price. (CO 1)
- 3. A unit of commodity x may be produced by the following processes:

	Process P	Process P2	Process P3
Labour units	[2]	[3]	[1]
Capital units	3	[2]	[4]

Explain 3 processes graphically. (CO 2)

- 4. Analyse production possibility curve of firm using Edgeworth box? (CO 2)
- 5. Analyse difference between traditional and modern approaches to the costs of a firm. (CO3)
- 6. Evaluate how modern cost theory determines supply of a firm? (CO3)
- 7. Evaluate how oligopoly market structure different from perfect competition? (CO 4)
- 8. Illustrate oligopoly market structure in the economy and explain how realistic it is? (CO 4)
- 9. Evaluate Product exhaustion problem using Euler's Theorem. (CO 5)
- 10. Critically examine Ricardo-Marx- Kalecki Kaldor theories of distribution(CO 5)



SEMESTER I

Core Course

EM 010103- STATISTICAL METHODS FOR ECONOMETRIC ANALYSIS

OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 50 MARKS

Answer *all* Questions (Each question carries 5 marks)

- 1. How do you find the possible outcomes of a random variable? (CO 1)
- 2. A fair coin is tossed twice. Let X is the number of Heads that are observed.
 - a. Construct probability distribution of X
 - b. Find Probability that at least one head is observed. (CO 1)
- 3. Choose appropriate parametric test for following examples and discuss about its variables.
 - a. What is the effect of income on longevity?
 - b. Evaluate the effect of income and minutes of exercise per day on longevity.
 - c. What is the effect of 2 different test prep prog on the average exam scores for students from the same class?
 - d. What is the difference in average exam score for students from 2 different schools?
 - e. What is the difference in average pain levels among post-surgical patients given 3 different pain killers?
 - f. How are latitude and temperature related? (CO 2)
- 4. Examine the criteria to test the hypothesis (CO 3)
- 5. What do you understand by a) significance level b) confidence interval c) degrees of freedom (CO 3)
- 6. Differentiate between Tests of single mean & Tests for equality of variance. (CO 4)
- 7. Analyse MGF and its characteristic functions. (CO 4)
- 8. Distinguish between parametric & non parametric tests.(CO 5)
- 9. Examine probability & non probability methods of sampling.(CO 5)



Chart (CO 2)







SEMESTER II

Core Course

EM 010205 – UNIVARIATE TIME SERIES ECONOMETRICS

OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 50 MARKS

Answer all Questions (Each question carries 5 marks)

- Evaluate Time Series Decomposition into Trend, Cyclical, Seasonal, Irregular Components (CO1)
- 2. Examine the necessary filters for detrending TS (CO1)
- 3. Visualise TS decomposition using R (CO2)
- 4. Explain the concept of stochastic process (CO2)
- 5. Evaluate the significance of stationarity in a stochastic process (CO3)
- 6. Test the stationarity in a stochastic process using white noise process (CO3)
- 7. Evaluate the problem of spurious regression (CO4)
- 8. Explain Tests of Stationarity —Correlogram(ACF, PACF), and Unit Root Test (CO4)
- 9. Evaluate ARMA and ARIMA process (CO5)
- 10. Examine different growth rate estimation methods (CO5)



SEMESTER II

Core Course

ECN010209 - INDIAN ECONOMY

OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 50 MARKS

Answer all Questions (Each question carries 5 marks)

- Briefly explain the problems faced by agriculture sector before and the independence (CO 2)
- 2. Explain the leading development issues in India, reforms and policy responses (CO1)
- 3. Compare the Indian economy in pre-independence and post independence period (CO1)
- 4. Explain various industrial policies in India (CO2)
- 5. Difference between FDI and FPI (CO3)
- 6. Describe the composition and direction of India's foreign trade (CO3)
- 7. Briefly analyse Tax Reforms in India (CO5)
- 8. Explain basic concepts and issues related to Government Budget in India (CO5)
- 9. Briefly explain NBFCs– issues, role and developments (CO4)
- 10. Explain the Financial Sector Reforms in India (CO4)(5x10=50)



SEMESTER II

Core Course

EM 010202–MACRO ECONOMIC THEORY 2

OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 50 MARKS

Answer all Questions (Each question carries 5 marks)

- 1. Evaluate David Laibson behavioural Hypothesis. (CO 1)
- 2. Derive Fischer's Inter-temporal Choice Model (CO 1)
- Analyse effects of changes in consumption, Investment and its impact on Economy. (CO 2)
- 4. Compare theoretical approaches to the Demand for Money: The Classical, Keynes, and Friedman. (CO 2)
- 5. Analyse the Great Recession of 2008: The Roots of the Crisis. (CO 3)
- Evaluate asymmetric information problem with respect to insurance and lemon market. (CO 3)
- 7. Explain Supply Side Economics its main features and policies (CO 4)
- 8. Analyse effects of Fiscal Deficit on Indian Economy (CO 4)
- 9. Analyse business cycle of Goodwin & Kalecki. (CO 5)
- 10. Evaluate effect of Monetary & Fiscal policies on economic fluctuations in India (CO 5)



SEMESTER II

Core Course

EM 010204–Mathematical Methods for Econometric Analysis-2

OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 50 MARKS

Answer all Questions (Each question carries 5 marks)

- 1. Evaluate optimum decision of an individual without constrain. $U = 3x^2 + 2x+5$ (CO 1)
- 2. How can we evaluate optimum decision of a firm with budget constrain? (CO 1)
- 3. Differentiate the application of differentiation and integration in cost of production functions. (CO 2)
- Evaluate cobb-Douglas production function and its properties mathematically. (CO 2)
- 5. Examine Product exhaustion theorem. (CO 3)
- 6. Analyse Harrod–Domar Model using integration. (CO 3)
- Is methodology and tools of Mathematics and Economics correlated. Illustrate. (CO 4)
- 8. One kind of cake requires 200 g of flour and 25g of fat, and another kind of cake requires 100 g of flour and 50 g of fat Find the maximum number of cakes that can be made from 5 kg of flour and 1 kg of fat assuming that there is no shortage of the other ingredients, used in making the cakes.

Step 1: Create a table like this for easy understanding (not necessary)

Floor(g)	Fat(g)



Cake of first kind (x)	200	25
Cake of second kind (y)	100	50
Availability	5000	1000

Step 2: Create linear equation using inequality

Step 3: Constraints are converted from inequality to equality

Step 4: Draw the graph using these constraints.

Step 5: To find the maximum value, compare each intersection point of the graph to find the maximum value. (CO 4)

- 9. Explain Envelope Theorem & its Economic application. (CO 5)
- 10. The cost function of monopolist is;

C = 40 + 12x&

Demand function is; $x = \frac{60-p}{3}$

- a. Find Total Revenue, Marginal Revenue & Marginal Cost.
- b. Check whether FOC & SOC of a profit max firm satisfied.
- c. Find Profit maximizing output. (CO 5)



SEMESTER II

Core Course

EM 010201 – MICROECONOMIC THEORY 2

OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 50 MARKS

Answer all Questions (Each question carries 5 marks)

- 1. Compare Team Production Approach by Armenalchian and Harold Demsetz. (CO 1)
- 2. Critically examine Behavioural Theories by March and Cyert (CO 1)
- 3. Explain Behavioural Theories of March and Cyert (CO 2)
- 4. Evaluate Managerial Theories of W J Baumol, O Williamson & Marris. (CO 2)
- 5. List out the causes of market failure and its solutions (CO 3)
- 6. Evaluate the major aspects of public choice (CO 3)
- 7. Explain the implications of information asymmetry (CO 4)
- 8. Examine vital ideas of behavioural economics (CO 4)
- 9. Explain First and Second Theorem of Welfare Economics (CO 5)
- 10. Analyse Human Happiness Index with respect to students of your class.(CO 5)



SEMESTER II

Core Course

EM 010206 - TERM PAPER ON ECONOMETRIC METHODS

OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 50 MARKS

Answer all Questions (Each question carries 5 marks)

- 1. Explain dependent & independent variable. (CO 1)
- 2. Evaluate difference between correlation and regression. (CO 1)
- 3. Reason why you choose this topic for your study. (CO 2)
- 4. Explain methodology of your term paper (CO 2)
- 5. Difference between R^2 & adjusted R^2 value. (CO 3)
- 6. Explain constant and slope of your model and its interpretation. (CO 3)
- 7. Explain statement of problem of your study. (CO 4)
- 8. Hypothesize the validity of the problem using econometric methods(CO 4)
- 9. Differentiate null and alternative hypothesis. (CO 5)
- 10. Evaluate significance value and confidence interval. (CO 5)



SEMESTER III

Core Course

EM010302 - ECONOMICS OF GROWTH AND DEVELOPMENT

OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 50 MARKS

Answer *all* Questions (Each question carries 5 marks)

- 1. Difference between income and non income indicators of Development (CO1)
- 2. Explain the methods of measuring inequality in income distribution (CO1)
- 3. Describe Prebisch-Singer Thesis and Myrdal Thesis (CO2)
- 4. Explain Rostow's Stages of Growth (CO2)
- 5. Briefly explain World Systems Approach (CO3)
- 6. Explain Neo-Classical Growth Models (CO3)
- 7. Critically analyse Harrod-Domar Model (CO4)
- 8. Evaluate Endogenous Growth Models (CO4)
- 9. Briefly explain Contributions of Thorstein Veblen (CO5)
- 10. Explain Michael Kremer's O-Ring Theory of Economic Development (CO5)



SEMESTER III

Core Course

EM010301 - INTERNATIONAL FINANCE AND ECONOMICS

OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 50 MARKS

Answer *all* Questions (Each question carries 5 marks)

- 1. Empirically analyse H-O Theory. (CO 1)
- 2. Critically examine the Leontief Paradox (CO 1)
- 3. Evaluate effect of non-Tariff Trade Barriers on international trade (CO 2)
- 4. Explain economic integration (CO 2)
- 5. Examine Intermediate Exchange Rate System in Indian Context.(CO 3)
- Evaluate features and working of the BWS & explain reasons for Collapse of the BWS. (CO 3)
- 7. Analyse the functional evolution of IMF (CO 4)
- 8. Explain working and relevance of the SDR (CO 4)
- 9. Evaluate impossible trinity with respect to Indian economy (CO 5)
- 10. Explain the role and performance, Challenges and Reforms of WTO

5 x 10 = 50



SEMESTER III

Core Course

EM 010306 – INTERNSHIP REPORT ON ECONOMETRIC ISSUES

OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 40 MARKS

Answer *all* Questions (Each question carries 5 marks)

- 1. What attracted to select this institution for your internship? (CO 1)
- 2. What skills you gained from this one month experience? (CO 1)
- 3. Summarize your Internship experience. (CO 2)
- 4. What is the strength and weakness of your research? (CO 2)
- 5. What Contribution has your report made to this firm? (CO 3)
- 6. Why is the problem you have tackled through your study worth tackling? (CO 3)
- 7. What was the motivation behind choosing this topic as your internship study? (CO 4)
- 8. Major findings and suggestions as per your study. (CO 4)

 $5 \ge 8 = 40$



SEMESTER III

Core Course

EM010305 - Econometrics of Limited Dependent Variable Models and Non Linear Regression

OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 50 MARKS

Answer *all* Questions (Each question carries 5 marks)

- 1. What do you understand by dichotomous model? (CO 1)
- How qualitative limited dependent model different from quantitative models? (CO 1)
- Explain polychotomous Variables–Unordered, Sequential, And Ordered Categories. (CO 2)
- 4. Evaluate Poisson Regression and Negative Binomial Regression. (CO 2)
- Explain how prior and posterior information updates Bayesian Logistic Regression. (CO 3)
- 6. Explain truncation of data.(CO 3)
- 7. Explain Censoring of Data. (CO 4)
- 8. Evaluate Two-Part Models and its estimation equation and its need.(CO 4)
- 9. Explain the importance of duration model and give example.(CO 5)
- 10. Explain Application of Log linear Models, Partially Linear Regression, Nonparametric

 Regression.(CO 5)





SEMESTER III

Core Course

EM010304 - Multivariate Time Series Econometrics

OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 50 MARKS

Answer *all* Questions (Each question carries 5 marks)

- 1. Explain SEM (CO 1)
- 2. Estimate the Simultaneous Equation Models by resolving the problem of identification (CO 1)
- 3. Differentiate between Univariate analysis and VAR model.(CO 2)
- 4. Explain Innovation or Shocks in VAR Model.(CO 2)
- 5. How to estimate the lag-length of variables in an estimation model? (CO 3)
- 6. Estimate IRF using r software. (CO 3)
- 7. Using Gretl. evaluate VEC Model. (CO 4)
- 8. Explain Traditional Impulse Response Functions, Orthogonalized Impulse Response Function and Generalized Impulse Response Function (GIRF). (CO 4)
- 9. Explain the difference between IV and 2SLS.(CO 5)
- 10. When should we use 2SLS regression Analysis? (CO 5)



SEMESTER III

Core Course

EM 010303 - PUBLIC FINANCE AND PUBLIC CHOICE

OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 40 MARKS

Answer *all* Questions (Each question carries 5 marks)

- 1. Explain Wicksell and Lindahl Model (CO1)
- 2. Discuss different types of Public Goods (CO1)
- 3. Explain problem of collective choice (CO2)
- 4. Critically evaluate Buchanan and Tullock Model (CO2)
- 5. Briefly explain various approaches to tax equity (CO3)
- 6. Discuss Niskanen Model (CO3)
- 7. Explain the Decentralization Theorem (CO4)
- 8. Briefly explain Fly Paper Effect and Fiscal Illusion (CO4)

 $5 \ge 8 = 40$



SEMESTER IV

Core Course

EM800403 - Experimental Design and Cliometrics

OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 50 MARKS

Answer *all* Questions (Each question carries 5 marks)

- 1. Explain Cliometrics History. (CO 1)
- 2. What do you mean by Causal Modeling? (CO 1)
- 3. Give a randomized experiment example. (CO 2)
- 4. Explain the main purposes of randomization. (CO 2)
- 5. According to your understanding, what are the advantages of randomization? (CO 3)
- 6. Analyse why do we use regression discontinuity designs?(CO 3)
- 7. Application of Cliometrics in rail-roads.(CO 4)
- 8. Evaluate application of Cliometrics in labour market studies.(CO 4)
- 9. Evaluate Generalizing LATE.(CO 5)
- 10. Explain Bias of 2 Stage Least Square Estimation.(CO 5)

5 x 10 = 50



SEMESTER IV

Core Course

EM 010404 – Comprehensive Viva-Voce

OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 50 MARKS

Answer *all* Questions (Each question carries 5 marks)

- 1. What are the three goals of Econometrics? (CO 1)
- 2. Discuss on two types of or branches of econometrics.(CO 1)
- 3. Explain the basic tool of Econometrics.(CO 2)
- 4. Evaluate the characteristics of Econometrics.(CO 2)
- 5. Explain the Methodology of Econometrics.(CO 3)
- 6. Discuss on different types of data in econometrics.(CO 3)
- 7. Can you just analyse how Econometrics distinguishes from Economics, mathematics and statistics? (CO 4)
- 8. Among different Econometric areas you studied which one you liked the most and why?(CO 4)
- The reason why you choose this particular econometric Model for your PG Dissertation work?(CO 5)
- 10. As an Econometrics (heterodox subject) Student, according to you what makes you different from other orthodox PG students? (CO 5)



SEMESTER IV

Core Course

EM 0101401 - ENVIRONMENTAL AND ECOLOGICAL ECONOMICS OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 40 MARKS

Answer *all* Questions (Each question carries 5 marks)

- 1. Explain Simon Julian's Thesis of Ultimate Resource (CO1)
- 2. Briefly analyse the issues of environmental degradation and climate change (CO1)
- 3. Explain Delphi Method (CO2)
- 4. Briefly explain use values, non-use values and option values (CO2)
- 5. Explain Coase Theorem (CO3)
- 6. Describe major environmental policies and legislations in India (CO3)
- 7. Explain Hotteling Rule (CO4)
- 8. Describe The Hartwick-Solow Approach (CO4)

5 x 8 = 40



SEMESTER IV

Core Course

EM 800401: FINANCIAL ECONOMETRICS

OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 50 MARKS

Answer *all* Questions (Each question carries 5 marks)

- 1. Explain Financial Modeling. (CO 1)
- 2. Evaluate return as a random variable and their properties. (CO 1)
- 3. Briefly explain Economic Critiques of the Efficient Market Hypothesis. (CO 2)
- 4. Explain Random walk Model and its application in return innovations. (CO 2)
- Differentiate Simple Autoregressive Models & Simple Moving-Average Models. (CO 3)
- 6. Explain non-linear models & its application in financial economics. (CO 3)
- 7. Evaluate ARCH and GARCH model with respect to financial time series data. (CO 4)
- 8. Explain volatility clustering. (CO 4)
- 9. Application of principle component analysis in financial econometrics. (CO 5)
- 10. What do you understand by non-linear duration models with respect to financial economics? (CO 5)



SEMESTER IV

Core Course

EM 010402: KERALA ECONOMY WITH DATABASE

OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 50 MARKS

Answer all Questions (Each question carries 5 marks)

- Explain Trends and Pattern of GSDP and Sectoral Contributions in Kerala Economy (CO 1)
- 2. Examine Limits to Kerala model of development (CO 1)
- 3. Evaluate the problems, performance and prospects of the Kerala economy. (CO 2)
- 4. Analyse the performance, problems and prospects f agriculture production and productivity in Kerala Economy. (CO 2)
- 5. Evaluate the structural changes in Kerala (CO 3)
- 6. Critically examine the sectoral issues of Kerala economy (CO 3)
- 7. Comprehend critically the fiscal issues of Kerala Economy (CO 4)
- 8. Analyse the decentralization issues of Kerala Economy(CO 4)
- 9. Examine the problems of Kerala Economy with respect to NSSO database.(CO 5)
- Analyse the sectoral issues faced by Kerala based on Dept of Economic and Statistics Kerala database (CO 5)



SEMESTER IV

Core Course

EM800402 - Panel Data Econometrics

OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 50 MARKS

Answer *all* Questions (Each question carries 5 marks)

- 1. Explain different types of panel data. (CO 1)
- 2. How panel data different from time series and cross-sectional data? (CO 1)
- 3. Evaluate the benefits and limitations of Panel data. (CO 2)
- Briefly explain the difference between one way and two-way error correction models. (CO 2)
- Explain the difference between OLS and Maximum Likelihood estimation Methods. (CO 3)
- 6. Evaluate Haussmann's specification tests. (CO 3)
- 7. Explain ANOVA and its application in Panel data. (CO 4)
- What do you mean by Selection Bias, how can this be a problem in Panel data Models? (CO 4)
- 9. How Co integration Test different from Panel co integration Test? (CO 5)
- 10. How can we evaluate LOGIT and PROBIT Model? When do we use these models?(CO 5)

$$5 \ge 10 = 50$$



SEMESTER IV

Core Course

EM 010403 - Project/Dissertation

OBE Outcome Measurement

TIME: 2 Hrs

MAXIMUM: 50 MARKS

Answer *all* Questions (Each question carries 5 marks)

- 1. What is the idea that binds your thesis together? (CO 1)
- 2. What motivated and inspired you to carry out this dissertation?(CO 1)
- 3. What are the main issues and debates in this subject area?(CO 2)
- 4. What is the Key focus of your thesis?(CO 2)
- 5. Did the project work go as per your plan or were there any unexpected circumstances that you had to deal with?(CO 3)
- 6. Discuss on the most important finding from your project work.(CO 3)
- 7. What are the major econometric tools used in your dissertation work?(CO 4)
- 8. Which are the 3 most important papers that relate to your project work?(CO 4)
- 9. What is the relevance of your work to other researchers?(CO 5)
- 10. What have you learnt from the process of doing your PG Dissertation?(CO 5)

5 x 10 = 50

