B.A. (Hons.) Semester III (under CBCS)

ECO-C5: INTERMEDIATE MICROECONOMICS – I

Max. Marks: 80 **Time: 3 Hrs.**
Credits: 6

(5 Class Room Teaching + 1 Tutorial)

Course Description

The course is designed to provide a sound training in microeconomic theory to formally analyze the behaviour of individual agents. Since students are already familiar with the quantitative techniques in the previous semesters, mathematical tools are used to facilitate understanding of the basic concepts. This course looks at the behaviour of the consumer and the producer and also covers the behaviour of a competitive firm.

Instructions for Paper-setter and candidates:

- The maximum marks for the paper will be 100. The question paper will be of 80 marks and continuous evaluation 20 marks. Time allowed will be 3 hours.

The paper-setter must put a note in the question paper in this regard.

- There shall be **9** questions in all.

The first question **compulsory** comprising 15 short answer type questions spread over the whole syllabus. The candidates are required to attempt 10 questions. Each question shall be of **two** marks (10 x 2= 20).

Rest of the paper shall contain four units. Two questions shall be asked from each unit and the candidates shall be given internal choice. The candidates shall attempt one question from each unit. Each question will carry 15 marks (15x4=60).

UNIT- I

Budget constraint; properties of budget set, how budget line changes.

Preference; Indifference curves, Marginal rate of substitution.

Utility; perfect substitutes, perfect complements,

Choice; optimal choice; neutrals and bads, discrete goods, concave preferences.

Demand; income offer curves and Engel curves, price offer curve and demand curve. Revealed preference

UNIT- II

Slutsky equation; the substitution effect, the total change in demand, rates of change.

Buying and Selling; net gross demand, offer curves and demand curves Intertemporal choice.

UNIT- III

Uncertainty and risk aversion

Technology : Production Functions ; Homogenous and homothetic ; Cobb Douglas and CES : Properties ; elasticity of substitution ; Eulers theorem.

UNIT-IV

Perfect competition: Assumptions: theory of a firm under perfect competition demand and revenue; equilibrium of the firm in the short run and long run; long run industry supply curve: Increasing, decreasing and constant cost industries.

Price controls: Price Ceiling; price floors; production import quotas Welfare: allocative efficiency under perfect competition.

Readings:

1. Scope as in Varian, H.R (2010). *Intermediate Microeconomics, a Modern Approach* (8th ed.). W.W. Norton and Company/Affiliated East-West Press (India) given as follows;

   Unit 1 chapters 2 to 7

   Unit 2 chapters 8,9,10

   Unit 3 chapters 12 to 18

   Unit 4 chapters 19, 22, 23

Advanced Readings:

2. Varian.H.R (2010). Intermediate Microeconomics, a Modern Approach (8th ed.)W.W. Norton and Company/Affiliated East-West Press (India).The workbook by Varian and Bergstrom could be used for problems.
3. C. Snyder and W. Nicholson.(2010).Fundamentals of Microeconomics, Cengage Learning (India).
4. Maddala, G.S. and Miller, R. L. (2006). Intermediate microeconomics: theory, issues, applications. McGraw-Hill Companies.
5. Koutsoyiannis, A. (2003). Modern microeconomics.(2nd ed.). Paperback
6. B. Douglas Bernheim and Michael D. Whinston. (2009). Microeconomics Tata McGraw-Hill (India).
7. Bergstrom, T. C., & Varian, H. R. (1990). Workouts in intermediate microeconomics. WW Norton.
8. Pindyck, Robert S., and Daniel L. Rubinfeld. Microeconomics. Upper Saddle River, N.J.: Pearson/Prentice Hall, 2009.
9. Mankiw, G. (2000). Microeconomics. In *Principles of Microeconomics* (Vol. 1, pp. 3–6, 270–272).

ECO-C6: INTERMEDIATE MACROECONOMICS - I

Max. Marks: 80 **Time: 3 Hrs.**
Credits: 6
(5 Class Room Teaching + 1 Tutorial)

Course Description
This course introduces the students to formal modeling of a macro-economy in terms of analytical tools. It discusses various alternative theories of output and employment determination in a closed economy in the short run as well as medium run, and the role of policy in this context. It also introduces the students to various theoretical issues related to an open economy.

Instructions for Paper-setter and candidates:

- The maximum marks for the paper will be 100. The question paper will be of 80 marks and continuous evaluation 20 marks. Time allowed will be 3 hours.

The paper-setter must put a note in the question paper in this regard.

- There shall be **9** questions in all.

The first question **compulsory** comprising 15 short answer type questions spread over the whole syllabus. The candidates are required to attempt 10 questions. Each question shall be of **two** marks (10 x 2= 20).

Rest of the paper shall contain four units. Two questions shall be asked from each unit and the candidates shall be given internal choice. The candidates shall attempt one question from each unit. Each question will carry 15 marks (15x4=60).

UNIT- I

1. Aggregate Demand and Aggregate Supply Curves
Derivation of aggregate demand and aggregate supply curves; interaction of aggregate demand and supply.
IS-LM model; Fiscal and monetary policy multiplier

UNIT- II

2. Inflation, Unemployment and Expectations
Theories of Inflation, Keynesian; Monetarist; Structurlist
Phillips curve: short and long run; adaptive and rational expectations; policy ineffectiveness debate.

UNIT-III

3. Open Economy Models
Short-run open economy models; Mundell -Fleming model; exchange rate determination; purchasing power parity; Asset market approach; Dornbusch's overshooting model.

UNIT- IV

Monetary approach to balance of payments; Disequilibrium in balance of payment and its consequences; Balance of payment adjustment policies under fixed and flexible exchange rate; International financial markets.

Readings:

1. Dornbusch, Fischer and Startz. (2010). *Macroeconomics* (11th ed.). McGraw Hill.
2. N. Gregory Mankiw. (2010). *Macroeconomics* (7th ed.) Worth Publishers.
3. Olivier Blanchard (2009).*Macroeconomics* (5th ed.). Pearson Education, Inc.
4. Steven M. Sheffrin. (1996).*Rational Expectations (*2nd ed.). Cambridge University Press,
5. Andrew B. Abel and Ben S. Bernanke. (2011). *Macroeconomics (*7th ed.). Pearson Education, Inc.,
6. Errol D'Souza.(2009) *Macroeconomics*. Pearson Education,
7. Paul R. Krugman, Maurice Obstfeld and Marc Melitz.(2012). *International Economics (*9th ed.).Pearson Education Asia.

ECO-C7: STATISTICAL METHODS FOR ECONOMICS

Max. Marks: 80 **Time: 3 Hrs.**

Credits: 6

(5 Class Room Teaching + 1 Tutorial)

Course Description

This is a course on statistical methods for economics. It begins with some basic concepts and terminology that are fundamental to statistical analysis and inference. It then develops the notion of probability, followed by probability distributions of discrete and continuous random variables and of joint distributions. This is followed by a discussion on sampling techniques used to collect survey data. The course introduces the notion of sampling distributions that act as a bridge between probability theory and statistical inference. The semester concludes with some topics in statistical inference that include point and interval estimation.

Instructions for Paper-setter and candidates:

- The maximum marks for the paper will be 100. The question paper will be of 80 marks and continuous evaluation 20 marks. Time allowed will be 3 hours.

The paper-setter must put a note in the question paper in this regard.

- There shall be **9** questions in all.

The first question **compulsory** comprising 15 short answer type questions spread over the whole syllabus. The candidates are required to attempt 10 questions. Each question shall be of **two** marks (10 x 2= 20).

Rest of the paper shall contain four units. Two questions shall be asked from each unit and the candidates shall be given internal choice. The candidates shall attempt one question from each unit. Each question will carry 15 marks (15x4=60).

UNIT-I

Introduction and Overview

The distinction between populations and samples and between population parameters and sample statistics; the use of measures of location and variation to describe and summarize data; population moments and their sample counterparts.

Elementary Probability Theory

Sample spaces and events; probability axioms and properties; counting techniques; conditional probability and Bayes' rule; independence.

UNIT-II

Random Variables and Probability Distributions

Defining random variables; probability distributions; expected values of random variables and of functions of random variables; properties of commonly used discrete and continuous distributions (uniform, binomial, normal, poisson and exponential random variables).

UNIT-III

Random Sampling and Jointly Distributed Random Variables

Density and distribution functions for jointly distributed random variables (two variables case); computing expected values; covariance and correlation coefficients.

Sampling

Principal steps in a sample survey; methods of sampling; the role of sampling theory; properties of random samples.

UNIT-IV

Point and Interval Estimation

Estimation of population parameters using methods of moments and maximum likelihood procedures; properties of estimators; confidence intervals for population parameters.

Readings:

1. Jay L. Devore (2010). *Probability and Statistics for Engineers.* Cengage Learning.
2. John E. Freund. (1992).*Mathematical Statistics*. Prentice Hall.
3. Richard J. Larsen and Morris L. Marx. (2011). *An Introduction to Mathematical Statistics and its Applications.* Prentice Hall.
4. William G. Cochran. (2007).*Sampling Techniques.* John Wiley.

SKILL ENHANCEMENT ELECTIVE

ECO-SEE 1: DATA SOURCES-I

Max. Marks: 80 **Time: 3 Hrs.**

Credits: 2

(2 Class Room Teaching)

Course Description

This course is designed to expose the students to the data sources of Indian Economic pertaining to macro economic variables. The emphasis will be on thinking like an economist and the course will illustrate how get data on macroeconomic concepts to be applied to analyze real-life situations.

Instructions for Paper-setter and candidates:

- The maximum marks for the paper will be 100. The question paper will be of 80 marks and continuous evaluation 20 marks. Time allowed will be 3 hours.

The paper-setter must put a note in the question paper in this regard.

- There shall be **9** questions in all.

The first question **compulsory** comprising 15 short answer type questions spread over the whole syllabus. The candidates are required to attempt 10 questions. Each question shall be of **two** marks (10 x 2= 20).

Rest of the paper shall contain four units. Two questions shall be asked from each unit and the candidates shall be given internal choice. The candidates shall attempt one question from each unit. Each question will carry 15 marks (15x4=60).

UNIT-I

National Income Accounts Data on key macroeconomic indicators: definitions, components, measurement and problems.

UNIT- II

Sources of data on Monetary Parameters: Components and Measurement of Money Supply, Banking statistics and their Limitations

UNIT- III

Sources of data on Fiscal Parameters: Details of Revenue and Expenditure of the central and state Governments, Deficit Indicators and Limitations.

UNIT- IV

Data Sources on Inflation: Consumer Price Index and Wholesale Price Index, its measurement and problems

Readings :

1. **RBI Database on Indian Economy**
2. **Latest National Account Statistics India (CSO)**
3. **India Statistics (CSO – Cover Agriculture, Industry, Service and Social Sector)**
4. **District Domestic Products (All Major States – 1999-00 to 2008-09)**
5. **Planning Commission Socio-economic Database on Indian Economy**
6. **Indian Planning Experience - A Statistical Profile**
7. **Economic Survey Database**
8. **Export-import Databank of India**

Generic Elective for Economics Honours Students only
GENERAL ELECTIVE (GE) COURSE-V

SOC-GE05: INDIAN SOCIETY : IMAGES AND REALITIES

Max. Marks: 80 **Time: 3 Hrs.**
Credits: 6
(5 Class Room Teaching + 1 Tutorial)

Course Objective:
This course seeks to provide an interdisciplinary introduction to Indian society.

Instructions for Paper-setter and candidates:
- The maximum marks for the paper will be 100. The question paper will be of 80 marks and continuous evaluation 20 marks. Time allowed will be 3 hours.

The paper-setter must put a note in the question paper in this regard.
- There shall be **9** questions in all.

The first question **compulsory** comprising 15 short answer type questions spread over the whole syllabus. The candidates are required to attempt 10 questions. Each question shall be of **two** marks (10 x 2= 20).

Rest of the paper shall contain four units. Two questions shall be asked from each unit and the candidates shall be given internal choice. The candidates shall attempt one question from each unit. Each question will carry 15 marks (15x4=60).

Outline:
1. **Ideas of India: Civilization, Colony, Nation and Society (3 Weeks)**
2. Institutions and Processes (9 Weeks)
2.1 Village, Town and Region
2.2 Caste, Religion and Ethnicity
2.3 Family and Gender
2.4 Political Economy
3. Critiques (2 Weeks)

COURSE CONTENTS AND ITINERARY

UNIT-I

1. **Ideas of India: Civilization, Colony, Nation and Society (3 Weeks)**
1.1 Embree, Ainslie Thomas,.*Imagining India.* Delhi: Oxford University Press, 1989. Chapter 1- Brahmanical Ideology and Regional Identities. Pp. 9 – 27
1.2 Cohn, Bernard. *India: Social Anthropology of a Civilization*, Delhi: OUP. Chapters 1, 3, 5 & 8 (1-7, 24-31, 51-59, 79-97)

2. Institutions and Processes (9 Weeks)
2.1 Village, Town and Region
2.1.1 Breman, Jan. 'The Village in Focus' from the Village Asia Revisited,Delhi: OUP 1997. Pp. 15-64
2.1.2 Cohn, Bernard, *An Anthropologist Among Historians and Other Essays*, Delhi: OUP, 1987, Chapters. 4 and 6. Pp.78-85 & 100 – 135

UNIT-II

2.2 Caste, Religion and Ethnicity

2.2.1 Mines, Diane P. *Caste in India.* Ann Arbor, Mich.: Association for Asian Studies, 2009. Pp. 1-35

2.2.2 Fuller, C. J. *The Camphor Flame: Popular Hinduism and Society in India.*Delhi: Viking, 1992. Chapter 1. Pp. 3 – 28.

2.2.3 Ahmad, Imtiaz et.al (eds). *Pluralism and Equality: Values in Indian Society and Politics*, Sage : New Delhi, 2000. Chapter: 'Basic Conflict of 'we' and 'they'' Between religious traditions, between Hindus, Muslims and Christians'.

UNIT-III

2.3 Family and Gender

2.3.1 Dube, Leela. 'On the Construction of Gender: Hindu Girls in Patrilineal India', Economic *and Political Weekly*, Vol. 23, No. 18 (Apr. 30, 1988), pp.WS11-WS19.

2.3.2 Gray, John N. & David J. Mearns. *Society from the Inside Out: Anthropological Perspectives on the South Asian Household.* New Delhi: Sage, 1989. Chapter 3. (Sylvia Vatuk) Household Form and Formation: Variability and Social Change among South Indian Muslims. Pp. 107-137

UNIT-IV

2.4 Political Economy

2.4.1 Chatterjee, Partha. *State and Politics in India*. Delhi: Oxford University Press, 1997. Introduction: A Political History of Independent India. Pp. 1-39

3. Critiques (2 Weeks)

3.1 Omvedt, Gail. *Understanding Caste*. New Delhi: Orient Black Swan, 2011. Chapters.5, 9, 11 and Conclusion. Pp. 30-38, 67 – 73, 83 – 90, 97 – 10

3.2 Sangari, Kumkum and Sudesh Vaid. *Recasting Women: Essays in Indian Colonial History.*New Brunswick: Rutgers University Press. Introduction, Pp.1 – 25

STAT-GE-3: BASICS OF STATISTICAL INFERENCE

Max. Marks: 80 **Time: 3 Hrs.**

Credits: 6

(5 Class Room Teaching + 1 Tutorial)

Course Description

This is a course on statistical methods for economics. It begins with some basic concepts and terminology that are fundamental to statistical analysis and inference. It then develops the notion of probability, followed by probability distributions of discrete and continuous random variables and of joint distributions. This is followed by a discussion on sampling techniques used to collect survey data. The course introduces the notion of sampling distributions that act as a bridge between probability theory and statistical inference. The semester concludes with some topics in statistical inference that include point and interval estimation.

Instructions for Paper-setter and candidates:

- The maximum marks for the paper will be 100. The question paper will be of 80 marks and continuous evaluation 20 marks. Time allowed will be 3 hours.

The paper-setter must put a note in the question paper in this regard.

- There shall be **9** questions in all.

The first question **compulsory** comprising 15 short answer type questions spread over the whole syllabus. The candidates are required to attempt 10 questions. Each question shall be of **two** marks (10 x 2= 20).

Rest of the paper shall contain four units. Two questions shall be asked from each unit and the candidates shall be given internal choice. The candidates shall attempt one question from each unit. Each question will carry 15 marks (15x4=60)

UNIT- I

Estimation of population means.

The basic idea of significance test, Null and alternative hypotheses. Type I& Type II errors, level of significance, concept of p-value. Tests of hypotheses and confidence intervalsfor the parameters of a normal distribution (one and two sample problems), Paired t-test.

UNIT- II

Categorical data: Tests of proportions, tests of association and goodness-of-fit using Chi-square test, Yates' correction.

UNIT- III

Test of significance for correlation coefficient. Fisher's z –transformation for testing the hypothetical value of correlation coefficient.

Basic Idea of Non-parametric tests, sign test for median, Paired sign test, Wilcoxon signed rank test for symmetry, Wilcoxon two-sample test.

UNIT- IV

Analysis of variance, one-way and two-way classifications.Brief exposure of three basic principles of design of experiments, treatment, plot and block. Analysis of completely randomized design, randomized complete block design.

SUGGESTED READING:

1. Danial Wayne W.BioStatistics: A foundation for Analysis in the Health Sciences, John. Wiley (2005)
2. Goon, A.M., Gupta, M.K. and Dasgupta, B. Fundamental of Statistics, Vol I (1975) &Vol II, (2001)
3. Das, M.N. & Giri, N.C.: Design and analysis of experiments, John Wiley.
4. Dunn, O.J. Basic Statistics: A primer for the Biomedical Sciences (1964, 1977), John Wiley.
5. Bancroft, Holdon: Introduction to Bio-statistics (1962), P.B. Hoebar, New York
6. Goldstein, A Biostatistics- An introductory text (1971), The Macmillion, New York.

MAT-C1: CALCULUS

THEORY

[Max. Marks: 100]
(Final-80+Internal Assessment-20)
Time: 3hrs.
Credits: 4

Note **:**

- **The question paper will have nine questions. Question No.1 spread over the whole syllabus will be compulsory. Candidates will attempt five questions.**
- **There will be two questions from each unit and the students will be required to answer one question from each unit.**
- **All questions carry equal marks.**

Objective: Calculus is one of the major branches of mathematics that finds application in almost all the fields of science. This course is an introduction to calculus. Students will be introduced to the hyperbolic functions, curve tracing, applications of integration and vector functions.

UNIT-I

Higher order derivatives, Leibniz rule and its applications, L'Hospital's rule, Derivations and Applications of Reduction Formulae for the Integrals of Trigonometric Functions.
Scope as in [1] Chapter 2, Section 6.6 and [2] Chapter 4.

UNIT-II

Concavity and inflection points, asymptotes, curve tracing in Cartesian coordinates, tracing in polar coordinates of standard curves, Techniques of sketching conics, reflection properties of conics, rotation of axes and second degree equations, classification into conics using the discriminant, polar equations of conics. Hyperbolic functions and their properties.
Scope as in [1] Sections 3.4, 3.5, 6.10, 9.1, 9.2, 9.3.

UNIT-III

Volumes by slicing, disks and washers methods, volumes by cylindrical shells, parametric equations, parameterizing a curve, arc length, arc length of parametric curves, area of surface of revolution.
Scope as in [1] Sections 5.2 to 5.6

UNIT-IV

Triple product, introduction to vector functions, operations with vector-valued functions, limits and continuity of vector functions, differentiation and integration of vector functions, tangent and normal components of acceleration, modeling ballistics and planetary motion, Kepler's second law.
Scope as in [1] Sections 10.1 to 10.5, 11.1, 11.3, 11.4, 11.5.

Books Recommended

1. G.B. Thomas and R.L. Finney, *Calculus*, 9th Ed., Pearson Education, Delhi, 2005.
2. Shanti Narayan, Integral Calculus, S. Chand and Company Ltd, 2001.
3. M.J. Strauss, G.L. Bradley and K. J. Smith, *Calculus,* 3rd Ed., Dorling Kindersley (India) P. Ltd. (Pearson Education), Delhi, 2007.
4. H. Anton, I. Bivens and S. Davis, *Calculus,* 7th Ed., John Wiley and Sons (Asia) P. Ltd., Singapore, 2002.
5. R. Courant and F. John, *Introduction to Calculus and Analysis* (Volumes I & II), Springer-Verlag, New York, Inc., 1989.

MAT-C1: CALCULUS

PRACTICAL

(Using any software)

[Max. Marks: 50](Final-40+Internal Assessment-10)
Time : 3hrs.

Credits: 2

List of Practicals (using any software)

- Plotting of graphs of function eax + b, log(ax + b), 1/(ax + b), sin(ax + b), cos(ax + b), lax + bland to illustrate the effect of a and b on the graph.
- Plotting the graphs of polynomial of degree 4 and 5, the derivative graph, the second derivative graph and comparing them.
- Sketching parametric curves (Eg. Trochoid, cycloid, epicycloids, hypocycloid).
- Obtaining surface of revolution of curves.
- Tracing of conics in Cartesian coordinates/ polar coordinates.
- Sketching ellipsoid, hyperboloid of one and two sheets, elliptic cone, elliptic, paraboloid, hyperbolic paraboloid using cartesian coordinates.
- Matrix operation (addition, multiplication, inverse, transpose).

Books Recommended:

1. G.B. Thomas and R.L. Finney, *Calculus*, 9th Ed., Pearson Education, Delhi, 2005.
2. M.J. Strauss, G.L. Bradley and K. J. Smith, *Calculus,* 3rd Ed., Dorling Kindersley (India) P. Ltd. (Pearson Education), Delhi, 2007.
3. H. Anton, I. Bivens and S. Davis, *Calculus,* 7th Ed., John Wiley and Sons (Asia) P. Ltd., Singapore, 2002.
4. R. Courant and F. John, *Introduction to Calculus and Analysis* (Volumes I & II), Springer-Verlag, New York, Inc., 1989.

GENERIC ELECTIVE IN ECONOMICS FOR NON ECONOMICS STUDENTS

ECO- GE5 : INDIAN ECONOMY-I

Max. Marks: 80 **Time: 3 Hrs.**
Credits: 6
(5 Class Room Teaching + 1 Tutorial)

Course Description
Using appropriate analytical frameworks, this course reviews major trends in economic indicators and policy debates in India in the post-Independence period, with particular emphasis on paradigm shifts and turning points.

Instructions for Paper-setter and candidates:
- The maximum marks for the paper will be 100. The question paper will be of 80 marks and continuous evaluation 20 marks. Time allowed will be 3 hours.

The paper-setter must put a note in the question paper in this regard.
- There shall be **9** questions in all.

The first question **compulsory** comprising 15 short answer type questions spread over the whole syllabus. The candidates are required to attempt 10 questions. Each question shall be of **two** marks (10 x 2= 20).

Rest of the paper shall contain four units. Two questions shall be asked from each unit and the candidates shall be given internal choice. The candidates shall attempt one question from each unit. Each question will carry 15 marks (15x4=60).

Course Outline

UNIT-I

***Economic Development since Independence*:** State of the Indian economy at the Independence. Changes in the structure of the Indian economy. Adoption of Planning in India. Objectives, Strategy and Appraisal of Panning in India.

UNIT –II

***Economic Reforms in India*:** State of the Indian Economy in 1991. Features of Economic Reforms and Structural Adjustment Programme: Liberalization, Privatization and Globalization. Appraisal of Economic Reform Programme.

UNIT-III

***Agriculture and its Development in India*:** Features of Indian Agriculture. New Agricultural Strategy in India (Green Revolution).Economic Liberalization and Indian Agriculture.

UNIT-IV

***Industry and Public sector in India*:** Phases of Industrial Growth in India, Appraisal of the Industrial Policy resolution of 1956, 1980 and 1991. Performance of Public sector Undertakings in India and its Evaluation. Privatization – Nature and Extent in India.