

ಮಂಗಳೂರು
MANGALORE



ವಿಶ್ವವಿದ್ಯಾನಿಲಯ
UNIVERSITY

ಕುಲಸಚಿವರ ಕಛೇರಿ
ಮಂಗಳಗಂಗೋತ್ರಿ - 574199
Office of the Registrar
Mangalagangothri - 574199

ಕ್ರಮಾಂಕ / No.: MU/ACC/CR.29/2009-10/A2

ದಿನಾಂಕ / Date : 20.05.2011


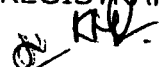
NOTIFICATION

Sub: Revised Syllabus of Economics, an optional subject for B.A.
degree programme

Ref: Academic Council decision dated 9.03.2011.

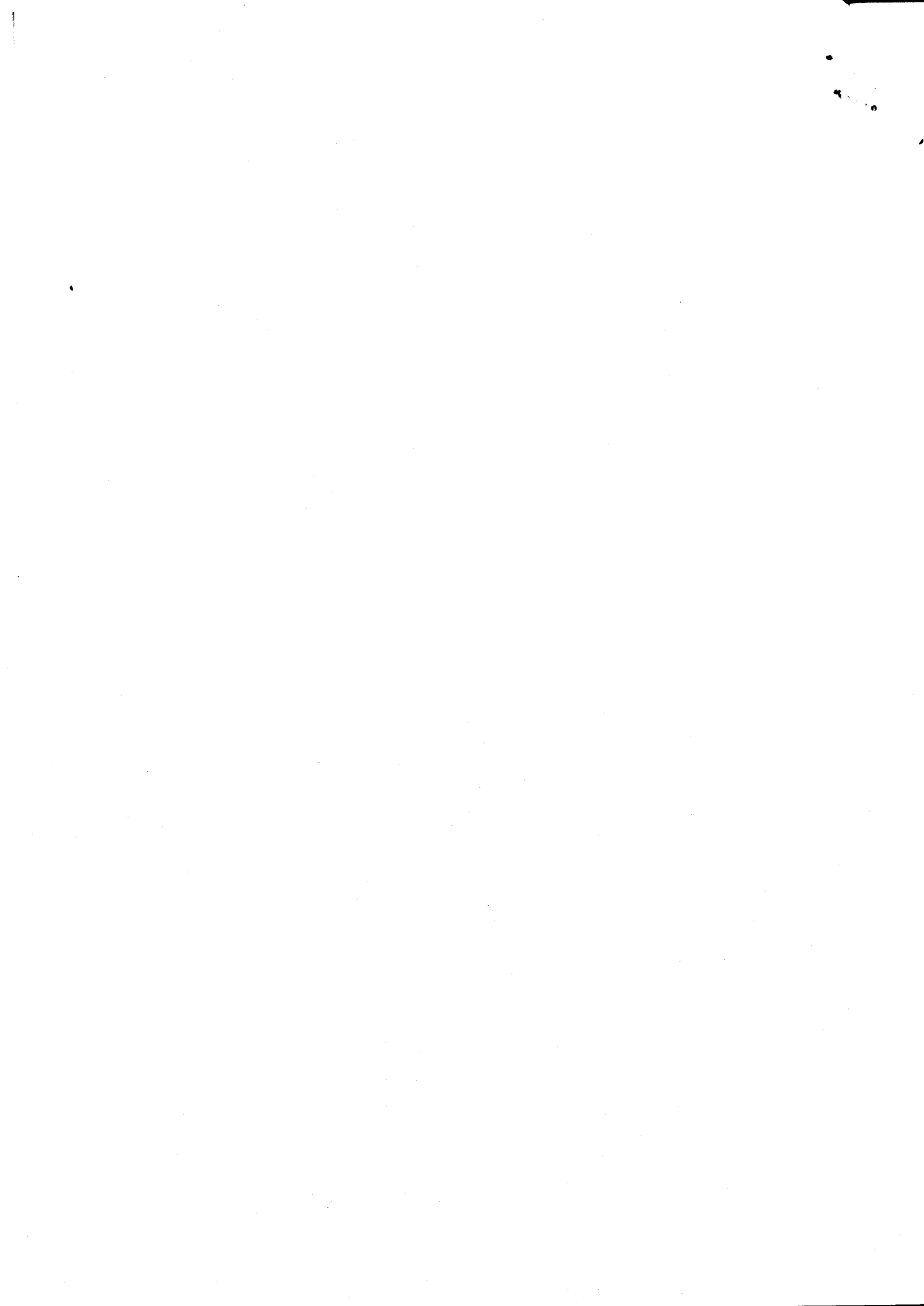
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The revised syllabus of Economics approved by the Academic Council at its meeting held on 9.03.2011 is notified for implementation as an optional subject for B.A degree programme from the academic year 2011-12.

  
REGISTRAR.  


To:

- (1) The Principals of the concerned Colleges.
- (2) The Registrar (Evaluation), Mangalore University.
- (3) The Chairman, UG BOS in Economics, Mangalore University.
- (4) The Superintendent, Academic Section, O/o the Registrar, Mangalore University.



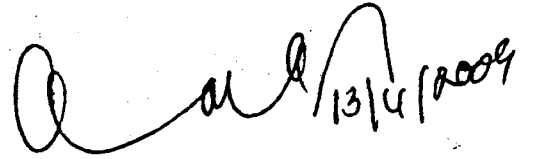
# Proceedings of the Meeting of the U.G.B.O.S in Economics, Mangalore University.

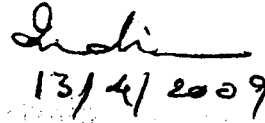
Venue: Room for Chair in Rural Banking and Management, Department of  
Economics, Mangalore University, Mangalagangothri

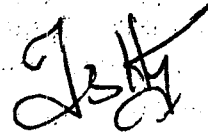
Date & Time: 13.4.2009 at 11.00 a.m

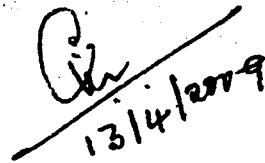
## Members Present:

1. Dr.Prabhakar Shishila  
Sl.Grade Lecturer  
Department of Economics  
Nehru Memorial College  
Sullia
2. Prof (Smt) Indira Devi K.P  
Sl.Grade Lecturer  
Department of Economics  
Besant Women's College  
Mangalore
3. Prof.T.Krishnamurthy  
S.D.M. College of Arts, Science &  
Commerce, Ujire
4. Prof.G.V.Joshi  
Chairman  
U.G.B.O.S in Economics  
Mangalore University

  
13/4/2009

  
13/4/2009



  
13/4/2009

## Member Not Present:

1. Prof.K.Narayanan  
Principal  
St.Mary's Syrian College  
Brahmavar

## PREAMBLE

The UGBOS in Economics, Mangalore University prepared the syllabus for 'Economics' under Credit based Semester system in the meeting held on 16.3.2006. It was subsequently approved by the Academic Council of Mangalore University at its special meeting held on 12.5.2006. It was notified for implementation with effect from the academic year 2006-07 through MU/ACC/CR/26/2006-07/A2., dated 2.6.2006.

After the syllabus was put into implementation, the teachers of Economics at the Under graduate level noticed that there were some lacunae. To overcome these lacunae and also to incorporate recent developments in Economics, it became necessary to revise and update the syllabus. Accordingly a workshop consisting of senior teachers in Economics at undergraduate level was organized on December 17, 2008 at the Canara College, Mangalore by Mangalore University Economics Association. After long deliberations the draft syllabus was prepared in the workshop and the same was sent to Chairman, UGBOS in Economics, Mangalore University on 16.1.2009.

The Mangalore University considering all these important developments permitted the Chairman, UGBOS in Economics, Mangalore University to convene a special meeting of the Board to revise the syllabus for Economics at the undergraduate level. The Board in the special meeting held on 13.4.2009 thoroughly examined the draft syllabus, made necessary improvements and approved the updated syllabus in the light of Revised Regulations Governing Credit Based Semester Scheme for Bachelor Degree Programmes in the Faculties of Arts, Science and Commerce notified through MU/Academic/CRA/2008-09/A2., dated 26.2.2009 for the following Semesters:

### Code No.

|             |              |                                        |
|-------------|--------------|----------------------------------------|
| Eco 101     | I Semester   | Micro Economics                        |
| Eco 201     | II Semester  | Macro Economics                        |
| Eco 301     | III Semester | Money and Banking                      |
| Eco 401     | IV Semester  | International Trade and Public Finance |
| Eco 501     | V Semester   | Economic Thought (Core)                |
| Eco 502 (A) | V Semester   | Economics of Development (Optional)    |
|             |              | or                                     |
| Eco 502 (B) | V Semester   | Economics of Statistics (Optional)     |
| Eco 601     | VI Semester  | Indian Economy (Core)                  |
| Eco 602(A)  | VI Semester  | Managerial Economics (Optional)        |
|             |              | or                                     |
| Eco 602 (B) | VI Semester  | Environmental Economics (Optional)     |


1 (b)

2. The Board approved the following guidelines for model question papers for all papers

Total Marks 120  
Number of Hours 3

- a) The students may be required to answer any two questions out of four question  $24 \times 2 = 48$   
b) The students may be required to answer any four questions out of six questions  $12 \times 4 = 48$   
c) The students may be required to answer any four questions out of six questions  $6 \times 4 = 24$

120

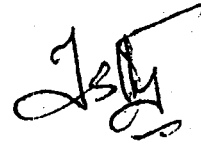
  
Prof. G.V. Joshi  
Chairman

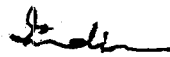
Members:

Prof. T. Krishnamurthi

Prof. K.P. Indira Devi

Dr. B. Prabhakara Shishila







# SEMESTER – I

Code NO:ECO 101

## MICRO ECONOMICS

(6 Hours per week)

### Module 1: Introduction

Micro Economics: Meaning, Scope, uses and limitations- Functional Relationships- Constants and variables (05 hours)

### Module II : Consumption

Law of Diminishing Marginal Utility. Consumer's Surplus – Practical Significance. Indifference curve Analysis – Properties of an Indifference curve - Consumer's equilibrium (10 hours)

### Module III : Demand Analysis

Meaning, Law of Demand -Determinants of demand -Reasons for operation – Exceptions to the law of demand. Price elasticity of demand-Meaning,cases,and measurement of price elasticity. (10 hours)

### Module IV : Supply, Cost & Revenue

Supply – Meaning, law of supply & Determinants – Cost – Fixed, Variable, Total, Average & Marginal Costs. Revenue – Total, Average and Marginal (10 hours)

### Module V : Market analysis

Perfect Competition – Features, Price – output determination. Monopoly – Features, Price – output determination – Price discrimination. Monopolistic Competition – Features, Price – output determination – Selling Cost Oligopoly– Features.(15 hours)

### Books for Reference:

Jinghan, M.L – Macro and Micro Economics Theory Ahuja A.L: Advanced Economic Theory Dewett and Verma: Modern Economic Theory M.L.Setha: Principles of Economics Koutsoyiannis A: Modern Micro Economics Lypsey RG and Crystal – Principles of Economics.

SEMESTER – II  
**MACRO ECONOMICS**

**Code No: Eco 201**

(6 Hours per week)

**Module 1: Introduction**

Macro Economics: Meaning, Scope, importance & limitations (3 hours)

**Module II : National Income**

National Income – Meaning & definitions – Concepts of National Income – GNP, NNP, NI, PI & DI – Measurement of National Income & difficulties. Income Inequalities - Causes and remedies (12 hours)

**Module III : Theories of Employment**

Classical Theory of Employment – Say's Law of Markets: its implications Keynes' Theory of Employment – Effective Demand, Consumption Function, Investment Function, Multiplier. (18 hours)

**Module IV : Distribution Theories**

Ricardian Theory of Rent – Concept of Quasi Rent Marginal Productivity Theory of Wages. Liquidity Preference Theory and Loanable Funds Theory of Interest. Innovation Theory, Risk Theory and Uncertainty Theory of Profit. (12 hours)

**Module V : Business Cycles**

Business Cycles – Meaning and Phases. (05 hours)

**Books for Reference:**

M.L. Seth: Principles of Economics, Jinghan, M.L – Macro and Micro Economics Theory, Ahuja A.L.: Advanced Economic Theory, M.L. Seth: Macro Economics, A.L. Hansen: Keynesian Economics, Shapiro Edward: Macro Economics, M.C. Vaish: Macro Economic Theory, Agarwal A.S. – Principles of Economics

**SEMESTER – III**  
**MONETARY ECONOMICS**

**Code No: Eco 301**

(6 Hours per week)

**Module I: Money :**

Meaning – Definitions- Evolution of Money – Functions of Money  
(8 hours)

**Module II : Value of Money and its measurement :**

Meaning – Theories of value of money – Quantity Theory – Transaction Approach -  
Cash Balance Approach Index Numbers – Meaning, Steps involved in the  
construction of Price Index Numbers – Simple and weighted index numbers –  
Difficulties and uses (22 hours)

**Module III : Inflation and Deflation :**

Meaning – Types – Causes – Effects – Remedies – Deflation – Meaning – Causes –  
Effects – Remedies (10 hours)

**Module IV: Commercial Banking :**

Meaning – Functions – Balance Sheet – Investment Policy – Credit Creation – Modern  
Banking instruments – ATM, Credit Card, Debit Card and E-banking.  
(20 hours)

**Module V : Central Banking :**

Meaning – Functions – Monetary Policy – Meaning and Objectives – Methods of  
Credit Control – Quantitative Methods – Bank Rate – Repo – Reverse Repo Rate –  
Open Market operations – Variable Cash Reserve Ratio – Qualitative Methods  
(15 hours)



**Module VI : International Financial Institutions –**

I.M.F. – World Bank

(5 hours)

**Books for Reference :**

1. Crowther G. : An Outline of Money
2. Jingham M.L. : Monetary Theory
3. Kulkarni Kishore : Modern Monetary Theory
4. Kurihara K.K. : Monetary Theory and Public Policy
5. Shreyas R.S. : Modern Banking
6. Seth M.L. : Monetary Economics
7. Sudharam K.P.M. : Money, Banking, Trade & Finance

**SEMESTER – IV**  
**INTERNATIONAL ECONOMICS AND**  
**PUBLIC FINANCE**

**Code No: Eco 401**

(6 Hours per week)

**Module 1: International Trade :**

Meaning – Internal and International Trade – Theories of International Trade –  
Comparative Cost Theory – Hecksher Ohlin Theory (10 hours)

**Module II : Balance of Payments :**

Meaning – Structure – Components – Causes of disequilibrium – Methods to correct  
Disequilibrium. (15 hours)

**Module III : Trade Policy :**

Meaning – Advantages and Disadvantages of Free Trade – Protection – Meaning –  
Arguments for and against protection – Tariffs – Non-Tariff Barriers – W.T.O. –  
Organisation – Agreements – TRIPS – TRIMS – GATT (15 hours)

**Module IV : Public Revenue :**

Sources of Public Revenue – Direct Tax and Indirect Tax – Canons of Taxation –  
Taxable capacity – Meaning & Determinants. Public Expenditure – Heads of Public  
Expenditure – Effects of Public Expenditure (15 hours)

**Module V : Public Debt :**

Types – Debt Redemption – Effects of Public Debt (10 hours)

**Module VI : Fiscal Policy :**

Meaning - Objectives - Budget - Structure (Components) of the Budget - Revenue and Capital Budgets (10 hours)

**Books for Reference :**

1. Dalton H. : Principles of Public Finance
2. Mithani D.M. : Modern Public Finance
3. Mithani D.M. : International Economics
4. Jingham M.L. : International Economics
5. Sundharam K.P.M. : Money, Banking, Trade & Public Finance

P.T.O

## SEMESTER – V

### ECONOMIC THOUGHT

Code NO:Eco 501

(Compulsory paper)

(5 Hours per week)

#### **Module 1: Classical Economists**

Adam Smith:- Philosophy: Naturalism and Optimism – Division of labour – Theory of value – Public Finance – International Trade.

David Ricardo:- Theory of value – Theory of Distribution – International Trade

T.R. Malthus :- Theory of population – Theory of market glut

(12 hours)

#### **Module II : Marxism and Marginalism**

Karl Marx :- Dialectical materialism – Theory of value – Theory of surplus value – Capitalistic accumulation and periodic crisis – Class conflict and Rise of Socialism

W.S. Jevons :- Theory of consumption – Theory of value

Karl Menger:- Classification of goods – Theory of value – Theory of distribution

(12 hours)

#### **Module III : Neo-classical economists :**

Alfred Marshall :- Nature of economics – Theory of value – Time period analysis – Consumption Theories-Consumer's surplus – Elasticity of demand – Theory of distribution – Quasi Rent

A.C. Pigou:- Welfare economics – Theory of employment

(08 hours)

## **Module IV : Keynesian and Post – Keynesian Economics :**

**J.M. Keynes:-** Theory of employment – consumption function – Investment function – Role of the government.

**Joan Robinson:-** Theory of imperfect competition – Theory of rent – Theory of economic development

**Gunnar Myrdal:-** Nature of economics – Welfare state – Spread and backwash effects – Problems of developing nations.

(12 hours)

## **Module V : Indian economic thought :**

**Kautilya:-** Vartha – Wealth – agriculture – labour – public finance – welfare state

**M.K. Gandhi:-** Machinery – Industrialisation – Decentralisation – Village republics – Sarvodaya – Doctrine of trusteeship – Bread labour – Population and prohibition – Relevance of Gandhian thought

**A.K. Sen:-** Choice of technology – Theory of famine – Poverty and poverty index – Social Choice – Human development index – Public action and economic policy

(12 hours)

### **Books for Reference:**

1. Lokanathan, V. : A history of economic thought
2. Bhatia H.L. : A history of economic thought
3. Hajela T.N. : History of economic thought
4. Srivatsava, S.K. : History of economic thought
5. Eric Roll. : History of economic thought
6. Haney H.L. : History of economic thought
7. Amartya Sen : Choice, Welfare and measurement
8. Amartya Sen : Employment, Technology and Development
9. Ganguli B.N. : Indian Economic Thought

## **SEMESTER – V**

# **DEVELOPMENT ECONOMICS**

**Code NO:Eco 502 (A)**

**(Optional)**

**(5 Hours per week)**

### **Module 1: Concept of Economic Growth and Economic Development :**

Distinction between Economic Growth and Economic Development – Determinants of Economic Development – Measurement of Economic Development – PCI Method, HDI Method, Poverty Index (UNDP) and Gender development Index (GDI).

**(15 hours)**

### **Module II : Theories of Economic Development :**

Classical Theory – Schumpeter's Theory – Rostow's Stages of Growth Theory of Big Push- Balanced and Unbalanced growth Theories

**(20 hours)**

### **Module III : Capital Formation and Economic Development :**

Role of Capital formation – Sources of Capital Formation – Role of foreign Capital in promoting Economic Development

**(10 hours)**

### **Module IV : Human Resource Development :**

Population as growth promoting and growth retarding factor – Demographic Theory of Transition – Disguised unemployment. Theories of Nurkse and Lewis – Man Power Planning

**(15 hours)**

## **Module V : State Participation in Economic Development & Technique of Economic Development :**

Role of State in Economic Development – Role of Technology in Economic Development – Meaning, Definition, Features of Planning – Role of Planning in Under Developed Countries – Types of Planning – Capitalist and Socialist Planning – Physical and Financial Planning – Planning by Direction and Planning by Inducement.

(10 hours)

### **Books for Reference :**

1. TODARO M.P. : Economics of Development in the Third World
2. Teneja M.L. &  
R M Meyer 1995 : Economics of Development & Planning
3. M.L. Jhingan : Economics of Development & Planning
4. Mishra S.K. & V.K. Peri : Economic Development & Planning
5. R.C. Agarwal : Economics of Development and Planning (Theory & Practice)

P.T.O

**SEMESTER – V****ECONOMIC STATISTICS (OPTIONAL)****Code NO:Eco 502 (B)****(5 Hours per week)****Module 1: Definition, Nature and Importance of Economic Statistics**

Definition of Statistics – Nature and Importance – Uses, Function and Limitations of Statistics – Statistical Investigation – Census and Sample Survey – Methods of Sample Surveys – Random Sampling – Systematic Sampling – Questionnaires – Classification and Tabulation of Statistical Data – Sample and Manifold Tabulations – Frequency Distribution for one Variable.

**(08 hours)****Module II : Data Presentation**

Visual Aids and their Importance – Diagrams – Bar Diagrams – Pie Diagram, Pictograms – Graphic Representation – Frequency Curve, Polygon, Ogives, Lorenz Curve “Z” Chart

**(10 hours)****Module III : Measures of Central Tendency**

Mean – Median – Mode- Geometric Mean – Harmonic Mean – Their Relative Merits and Demerits

**(12 hours)****Module IV : Measure of Dispersion**

Absolute and Relative Measures – The Ranges, Quartile Deviation, Mean Deviation, Standard Deviation – their Relative Merits and Demerits – Coefficient of Dispersion – Skewness – Meaning – Measures of Skewness – Quartile and Pearson Coefficient of Skewness.

**(10 hours)**



## **Module V : Correlation Analysis**

Simple Correlation between two variables – Kari Pearson's Coefficient of Correlation for Individual Series only – Rank Correlation – Uses of Correlation in Economic Analysis.

(10 hours)

## **Module VI : Regression Analysis**

Meaning of Regression – Regression Equations – Uses of Regression in Economic Analysis.

(08 hours)

## **Module VII: Index Numbers**

Computation of Laspeyers' Paasche's, Marshall Edgeworth's and Fisher's Index Numbers

(05 hours)

## **Module VIII : Time Series**

Meaning – Measurement of Trends – Moving Averages – Principles of Least Squares and Straight Line Trend.

(07 hours)

### **Books for Reference :**

1. TODARO M.P. : Fundamental Methods of Statistics
2. Fox K.A. : Intermediate Economics Statistics
3. Nagar A.L. & Das R.K : Basic Statistics
4. S.P. Gupta : Statistical Methods
5. Spiegel : Theory & Problems of Statistics.

## SEMESTER – VI

### INDIAN ECONOMICS

**Code NO:Eco 601 (Compulsory Paper)**

(5 Hours per week)

#### **Module I: Population Problem :**

Growth of Population: Composition – size, density, sex ratio, literacy ratio, rural-urban ratio and occupational distribution – causes and consequences of population growth in India-family welfare programmes, population policy.

(5 hours)

#### **Module II : Poverty and Unemployment in India :**

Nature and causes of poverty and unemployment – poverty alleviation and employment generation programmes: SSGSY, SJSRY, PMY Sadak Yojana, Antyodaya Anna Yojana, Valmiki Ambedkar Avas Yojana – SHGs and Women empowerment.

(5 hours)

#### **Module III : Indian Agriculture :**

Agricultural Credit – Sources; Agricultural Marketing – Existing problems- Agricultural policy – Impact of globalization on Indian Agriculture.

(10 hours)

#### **Module IV : Indian Industries :**

Industrial Policy 1991 – Industrial Sickness – meaning, causes and remedies-Small and Medium enterprises in India – Problems and Measures taken by Government; Industrial Reforms in India since 1991.

(10 hours)

#### **Module V : Reforms in Tertiary Sector since 1991 :**

Transport Sector Reforms – Trade Sector Reforms – Financial Sector Reforms – Fiscal Reforms.

(10 hours)

## Module VI : Centre – State Financial Relations

Centre-State Financial Relations- Recommendations of 12<sup>th</sup> & 13<sup>th</sup> Finance Commissions. (10 hours)

### Books for Reference :

1. Agarwal A.N. : Indian Economy
2. Alak Ghosh . : Indian Economy
3. Datt & Sundaram : Indian Economy
4. Mishra & Puri. : Indian Economy

P.T.O

# SEMESTER – VI

## MANAGERIAL ECONOMICS

Code NO:Eco 602 (A)

(Optional)

(5 Hours per week)

### MODULE 1: Nature & Scope of Managerial Economics

Meaning – definitions and characteristics of Managerial Economics -Subject Matter – Demand Analysis & Forecasting - Cost & Production Analysis- Pricing decisions, policies and practices-Capital Management-Profit Management. (10 hours)

### MODULE 2: Demand Forecasting

Meaning & Definitions- Objectives of demand forecasting -Steps followed in Demand Forecasting -Criteria of a good forecasting method -Methods of Demand Forecasting

#### A) Survey Methods:

i) Direct Interview Method :Complete enumeration method-Sample survey method-End use method –

ii) Expert Opinion survey method : Collective opinion method- Expert opinion or Delphi method

#### B) Statistical Methods:

i) Trend Projection- free hand, semi average, moving average

ii) Correlation & Regression

iii) Barometric method – Leading, coincident and lagging indicators

(10 hours)

### **MODULE 3: Production Management**

Production function – Meaning, Attributes, Limitations & Uses -Law of Variable Proportion (10 hours)

### **MODULE 4: Pricing Management**

Meaning -Determinants of Price -Pricing Practices- Full Cost Pricing, Marginal Cost Pricing, Going Rate Pricing, Promotional Pricing, Transfer pricing, Life cycle Pricing , Administered prices, Dual Prices -Pricing the New Products : Skimming Price Strategy and Penetrating price Strategy (10 hours)

### **MODULE 5: Profit Management:**

Profit policy: Profit Maximization Policy- Firm's equilibrium-TC & TR Approach, MC & MR Approach- Is profit maximization the sole aim of the firm -Sales Maximization policy -Break-even Analysis- Determination of the break-even point- Break-even chart- Margin of Safety- Uses & Limitations. (10 hours)

### **MODULE 6: Capital Management**

Meaning & Definition -Importance of Capital Budgeting -Steps involved in capital budgeting -Methods of Project Evaluation:

- A. Traditional Methods – Pay- back period method, Accounting rate of return (ARR) method
- B. Modern Methods – Net present value (NPV) method, Profitability Index, Internal rate of return (IRR) method.

(10 hours)

## REFERENCE BOOKS:

1. Joel Dean - Managerial Economics
2. Barry Keating & J.Holton Wilson - Managerial Economics -
3. Dwivedi D.N. - Managerial Economics
4. H.Craig Peterson & W.Cris Lewis - Managerial Economics
5. Paul G. Keat & Philip K.Y.Young - Managerial Economics – Economic Tools  
For Today's Decision Makers
6. Gopala Krishan G. - A Study in Managerial Economics
7. Mehta P.L. - Managerial Economics- Analysis, Problems and  
Cases
8. Shankaran S - Managerial Economics
9. Varshney & Maheshwari - Managerial Economics
10. Wali & Kalkundrikar - Managerial Economics
11. D.M. Mithani - Managerial Economics
12. Dr. Prabhakara Shishila - Managerial Economics

P.T.O

# SEMESTER – VI

## ENVIRONMENTAL ECONOMICS

Code NO:Eco 602 (B)

(Optional)

(5 Hours per week)

### **Module 1: Nature of Environmental Economics:**

Meaning, scope and importance of environmental economics – Relationship between environment and economic development – Meaning and importance of sustainable development – Significance of conservation of natural resources. (12 hours)

### **Module II : Pollution : Causes & Consequences :**

Air Pollution : Causes and Consequences – Water Pollution: Causes and Consequences – Noise Pollution : Causes and Consequences – Methods to Control Pollution (12 hours)

### **Module III : Local Environmental Issues :**

Solid waste and its Management – Economics of Recycling – Common property resources – Community Participation in solving environmental problems – Need for environmental valuation - pollution taxes – Tax on output

(12 hours)

### **Module IV : Global Environmental Problems :**

Conflict between consumerism and environment – Threat to Biodiversity & Endangered species - Global warming and acid rain-climate change- Ozone depletion - Green House Effect (12 hours)

### **Module V : Environmentalism in India :**

Leading Environmentalists of India and their efforts in environment protection – People's participation in environmental protection: Environment education and awareness - Role of NGO's in environment protection – Problem of Potable Water- Rain water harvesting methods (12 hours)

**Books for Reference :**

1. Jason F.S. Rogren : Environmental Economics
2. Karpagam : Environmental Economics
3. Shankaran : Environmental Economics
4. Rajalakshmi and Birunda : Environmental Economics
5. Abhijith Dutta, Sunita Dutta : Environmental Economics
6. P.N. Pandey : Environmental Economics
7. Charles D Kolstad . : Environmental Economics
8. Nellisen, Straten and Klinkers-(Eds): Classics in Environmental Studies
9. Sharma P.d. : Ecology and Environment
10. Subrahmanyam & Shamba Murthy: Ecology
11. World Development Reports

P.T.O



# SEMESTER – VI

## MATHEMATICAL ECONOMICS

Code NO:Eco 602 (C)

(Optional)

(5 Hours per week)

### Module I: Nature and Scope of Mathematical Economics :

The uses and misuses of Mathematical Economics – Variables –function - Graphical Representation of linear and non-linear functions – Linear laws of demand and Supply – market equilibrium for linear demand and supply functions – Linear equations in several variables – parabolic laws – Market equilibrium and quadratic equations – Hyperbolic laws – Hyperbolic laws and market equilibrium – Effect of taxation on market equilibrium (20 hours)

### Module II : Differential calculus :

Limits – continuity – Definition of a derivative – rules of differentiation – Higher order derivatives – implicit differentiation – maxima and minima – application of derivatives in economics – cost, average cost and marginal cost relationship – revenue and marginal revenue relation – profit under monopoly – elasticity of demand – constant elasticity of demand. (20 hours)

### Module III : Partial differentiation :

Functions of two independent variables – partial elasticities of demand – marginal productivity – Euler's theorem – constant product curves – returns to scale

(08 hours)

### Module IV : Integral calculus :

Indefinite integration – marginal revenue and marginal cost – national income, consumption and savings – Definite integration – consumer's surplus – producer's surplus – revenue versus cost

(10 hours)

**Module V : Linear models and Matrix Algebra :**

Matrix and Vectors – the algebra of matrices – identity matrices and null matrices -  
 Transpose and inverses – basis properties of determinants – finding the inverse  
 Matrix – Cramer's rule

(08 hours)

**Module VI : Linear Programming :**

Simple examples of linear programming – Geometric solution

(04 hours)

**Books for Reference :**

1. Dinwiddy C : Elementary Mathematics for Economics
2. Weber J.E. : Mathematical Analysis – Business and Economic Applications
3. Chiang A.C : Fundamental Methods of Mathematical Lecono
4. Allen R.G.D. : Mathematical Analysis for Economics
5. Dowling E.T. : Mathematics for Economists
6. Holden and Pearson: Introductory Mathematics for Economists.
7. Daus, P.Hand Whyburn, W.M. – Introduction of Mathematical Analysis
8. Monga G.S. : Mathematics and Statistics for Economics

Prof. V. Joshi 13/4/09  
 Chairman

**Members:**

Dr. B. Prabhakara Shishila

Prof. T. Krishnamurthi

Prof. K.P. Indira Devi