# DEPARTMENT OF ECONOMICS

# UNIVERSITY OF BURDWAN

## Syllabus for 2 year Post Graduate Programme in Economics under Curriculum and Credit Framework for Postgraduate Programme (CCFPP) as per NEP2020

## with effect from 2026-2027 session

# Post Graduate Programme in Economics leading to MA / MSc degree in Economics

## A. Programme Outcome (PO):

# Develop conceptual knowledge of the core domain of study

# Develop decision making capabilities (intellectual, organizational, and personal) using domain knowledge

# Develop effective communication & interaction skills for dissemination of domain knowledge & decisions

# Ability to engage in independent and life-long learning of core domain & related issues

## B. Programme Specific Outcome (PSO):

# Develop conceptual understanding of the fundamental mechanism of economic processes at individual and macro level

# Form a clear idea about the working of different sectors and markets that constitute an economy

# Ability to working with real life data to understand outcomes of policies at local, national and global level

# Ability to identify and suggest optimum policies at micro and macro level to maximise benefits

## Post-graduate Programme in Economics – Options, Entry & Exit

| *Programme* | *Option* | *Structure* | *Eligibility* | *Exit Points* |
|---|---|---|---|---|
| 2-Year PG | 1 | Coursework in I-III semesters and Research Project / Dissertation in IV$^{th}$ semester | • 3-yr/4 yr Bachelor's degree with Major in Economics (or allied subjects along with qualifying in National/University Admission Test)<br>• A minimum CGPA of 7.5 after Semesters I & II<br>• Number of Students allowed for this option will depend on Number of available Faculty members<br>• Allotment of guide shall be made with consent of concerned faculty member | **Two Exit Points**<br>• After 2 semesters with PG Diploma in Economics<br>• After 4 semesters with Masters Degree in Economics |
| | 2 | Coursework in all 4 semesters | • 3-yr/4 yr Bachelor's degree with Major in Economics (or allied subjects along with qualifying in National/University Admission Test) | |
| | 3 | Coursework in I-II semesters and Research Project / Dissertation in III-IV$^{th}$ semester | • Entry as above<br>• A minimum CGPA of 7.5 after Semester I<br>• Number of Students allowed for this option will depend on Number of available Faculty members<br>• Allotment of guide shall be made with consent of concerned faculty member | |

- For students pursuing Option-2, i.e. Coursework in all semesters, there shall be a Core compulsory course in Final Semester in the nature of Field Survey / Project / Dissertation of not less than 4 credits
- Students shall be exposed to concepts of ***Research and Publication Ethics*** in the Research Methodology course during PG-I of 2-year PGP
- Class Hour distribution shall be 15 Lecture Hours per semester for 1 credit

**Credit Structure of 2 Year PG Programme**

| *Program* | *Papers* | *First Semester* | *Second Semester* | *Third Semester* | *Fourth Semester* | **Total Credits** |
|---|---|---|---|---|---|---|
| ***Option 1:*** *2 year PG programme with Coursework in I-III semesters and Research / Dissertation in IVth semester* | *Core Papers (compulsory)* | **24** | **18** | **12** | **-** | **54** |
| | *Discipline Specific Major Elective Papers* | **-** | **-** | **8** | **-** | **8** |
| | *Minor Elective Papers (Non-Departmental)* | **4** | **4** | **-** | **-** | **8** |
| | *Research Project / Dissertation* | | | | **20** | **20** |
| | **Aggregate** | **28** | **22** | **20** | **20** | **90** |
| | | | | | | |
| ***Option 2:*** *2 year PG programme with only Coursework in I-IV semesters* | *Core Papers (compulsory)* | **24** | **18** | **12** | **12** | **66** |
| | *Discipline Specific Major Elective Papers* | **-** | **-** | **8** | **8** | **16** |
| | *Minor Elective Papers (Non-Departmental)* | **4** | **4** | **-** | **-** | **8** |
| | *Research Project / Dissertation* | | | | | |
| | **Aggregate** | **28** | **22** | **20** | **20** | **90** |
| | | | | | | |
| ***Option 3:*** *2 year PG programme with Coursework in I-II semesters and Research / Dissertation in III-IVth semester* | *Core Papers (compulsory)* | **24** | **18** | **-** | **-** | **42** |
| | *Discipline Specific Major Elective Papers* | **-** | **-** | **-** | **-** | **-** |
| | *Minor Elective Papers (Non-Departmental)* | **4** | **4** | **-** | **-** | **8** |
| | *Research Project / Dissertation* | | | **20** | **20** | **40** |
| | **Aggregate** | **28** | **22** | **20** | **20** | **90** |
| | | | | | | |
| | **Marks** | **375** | **375** | **250** | **250** | **1250** |

***In addition, students have to complete a 2-credit Compulsory Course on Community Engagement in the 4th semester. However, this shall not be taken into consideration in the calculation of SGPA and CGPA***

**8 digit Paper Code System:**

| Whether 2year PG or 1year PG | 4 digit subject letter code | Semester Number | Whether Major or Minor | Course Number |
|---|---|---|---|---|
| PG2 or PG1 | ECON | 1 or 2 or 3 or 4 | Major 1 / Minor 2 / Project etc 3 / Community Engagement 4 | 1/2/3/4/5 |
| | | | | |
| **Example:** | **2 year PG / 1st semester / Major /Course 1:** | | | |
| PG2 | ECON | 1 | 01 | 1 |
| | | | | |
| **Example:** | **2 year PG / 2nd semester / Minor /Course 1:** | | | |
| PG2 | ECON | 1 | 02 | 1 |
| | | | | |
| **Example:** | **2 year PG / 4th semester / Major /Course 4:** | | | |
| PG2 | ECON | 4 | 01 | 4 |
| | | | | |
| **Example:** | **2 year PG / 4th semester / Major /Dissertation** | | | |
| PG2 | ECON | 4 | 03 | 1 |
| | | | | |
| **Example:** | **2 year PG / 4th semester / Community Engagement** | | | |
| PG2 | ECON | 4 | 04 | 1 |
| | | | | |
| **Example:** | **1 year PG / 1st semester / Major /Course 4:** | | | |
| PG1 | ECON | 1 | 01 | 4 |
| | | | | |
| **Example:** | **1 year PG / 2nd semester / Major /Dissertation** | | | |
| PG1 | ECON | 2 | 03 | 1 |
| | | | | |
| **Example:** | **1 year PG / 4th semester / Community Engagement** | | | |
| PG1 | ECON | 2 | 04 | 1 |

## Structure of 2 year PG Programme in Economics

### First Semester
### (common for both 2YPGP with Coursework and 2YPGP with Coursework & Research)

| Sem | Course Type | Course Code | Course Title | L-T-P | Credit | Marks | Marks Th-Pr-IA |
|---|---|---|---|---|---|---|---|
| **I** | Core Course **Level:400 - 499** | PG2ECON 1011 | **Advanced Microeconomic Theory & Applications** | 5-1-0 | 6 | 75 | 60-0-15 |
| **I** | Core Course **Level:400 - 499** | PG2ECON 1012 | **Advanced Macroeconomic Theory & Applications** | 5-1-0 | 6 | 75 | 60-0-15 |
| **I** | Core Course **Level:400 - 499** | PG2ECON 1013 | **Advanced Development Economics: Theory & Applications** | 5-1-0 | 6 | 75 | 60-0-15 |
| **I** | Core Course **Level:400 - 499** | PG2ECON 1014 | **Research Methodology** | 4-1-1 | 6 | 75 | 60-0-15* |
| **I** | Extra-departmental Minor Course **Level: 300 - 399** | PG2ECON 1021 | **(Any one from the following)** | | 4 | 75 | 60-0-15 |
| | | | **1021A: Demography** | 3-1-0 | | | 60-0-15 |
| | | | **1021B: Applied Statistics** | 2-1-1 | | | 60-0-15* |
| | | | **course from SWAYAM platform** | | | | |
| | **Total I$^{st}$ Sem** | | | | **28** | **375** | |

* For PG2ECON1014 and PG2ECON1021B, Internal Assessment will be in the form of Practical

### Second Semester
### (common for both 2YPGP with Coursework and 2YPGP with Coursework & Research)

| Sem | Course Type | Course Code | Course Title | L-T-P | Credit | Marks | Marks Th-Pr-IA |
|---|---|---|---|---|---|---|---|
| **II** | Core Course **Level:400 - 499** | PG2ECON 2011 | **Indian Economic Thought** | 5-1-0 | 6 | 75 | 60-0-15 |
| **II** | Core Course **Level:400 - 499** | PG2ECON 2012 | **Resource & Environmental Economics** | 3-1-0 | 4 | 75 | 60-0-15 |
| **II** | Core Course **Level:400 - 499** | PG2ECON 2013 | **Basic Financial Economics** | 3-1-0 | 4 | 75 | 60-0-15 |
| **II** | Core Course **Level:400 – 499** | PG2ECON 2014 | **Development Studies** | 3-1-0 | 4 | 75 | 60-0-15 |
| **II** | Extra-departmental Minor Course **Level: 300 - 399** | PG2ECON 2021 | **(Any one from the following)** | 3-1-0 | 4 | 75 | 60-0-15 |
| | | | **2021A: Indian Official Statistics** | | | | 60-0-15 |
| | | | **2021B: Select Features of West Bengal Economy** | | | | 60-0-15 |
| | | | **course from SWAYAM platform** | | | | 60-0-15 |
| | **Total II$^{nd}$ Sem** | | | | **22** | **375** | |

*Students who exit at the end of 1st year (Semester II) shall be awarded a Postgraduate Diploma (Level 6 under NHEQF and NSQF)*

## Third Semester
**(common for both 2YPGP with Coursework and 2YPGP with Coursework & Research in IVth sem)**

| Sem | Course Type | Course Code | Course Title | L-T-P | Credit | Marks | Marks Th-Pr-IA |
|---|---|---|---|---|---|---|---|
| **III** | Core Course **Level: 500 - 599** | PG2ECON 3011 | **International Economics** | 3-1-0 | 4 | 50 | 40-0-10 |
| **III** | Core Course **Level: 500 - 599** | PG2ECON 3012 | **Game Theory & Behavioural Economics** | 3-1-0 | 4 | 50 | 40-0-10 |
| **III** | Core Course **Level: 500 - 599** | PG2ECON 3013 | **Public Economics** | 3-1-0 | 4 | 50 | 40-0-10 |
| **III** | Major Elective Course **Level: 500 - 599** | PG2ECON 3014 | **Elective-I: (any one)** | 3-1-0 | 4 | 50 | 40-0-10 |
| | | | **3014A: Economics of Sustainable Development** | | | | 40-0-10 |
| | | | **3014B: Agricultural Economics-I** | | | | 40-0-10 |
| **III** | Major Elective Course **Level: 500 - 599** | PG2ECON 3015 | **Elective-II: (any one)** | 3-1-0 | 4 | 50 | 40-0-10 |
| | | | **3015A: Applied Econometrics** | | | | 40-0-10 |
| | | | **3015B: Agricultural Economics-II** | | | | |
| | **Total III$^{rd}$ Sem** | | | | **20** | **250** | |

## Fourth Semester (for 2YPGP with Coursework)

| Sem | Course Type | Course Code | Course Title | L-T-P | Credit | Marks | Marks Th-Pr-IA |
|---|---|---|---|---|---|---|---|
| **IV** | Core Course **Level: 500 - 599** | PG2ECON 4011 | **Economics of Growth** | 3-1-0 | 4 | 50 | 40-0-10 |
| **IV** | Core Course **Level: 500 - 599** | PG2ECON 4012 | **Recent Issues in Indian Economy** | 3-1-0 | 4 | 50 | 40-0-10 |
| **IV** | Elective Course **Level: 500 - 599** | PG2ECON 4013 | **Elective-III: (any one)** | 3-1-0 | 4 | 50 | 40-0-10 |
| | | | **4013A: Advanced Financial Economics** | | | | 40-0-10 |
| | | | **4013B: Regional Economics** | | | | 40-0-10 |
| | | | **4013C: Social Capital** | | | | 40-0-10 |
| | | | **4013D: Rural Development** | | | | 40-0-10 |
| **IV** | Major Elective Course **Level: 500 - 599** | PG2ECON 4014 | **Elective-IV: (any one)** | | 4 | 50 | 40-0-10 |
| | | | **4014A: Advanced Econometrics** | 3-1-0 | | | 40-0-10 |
| | | | **4014B: Economics of Climate Change** | 3-1-0 | | | 40-0-10 |
| | | | **4014C: Data Analytics** | 0-0-4 | | | 0-40-10 |
| **IV** | Core Course **Level: 500 - 599** | PG2ECON 4015 | **Project: Socio Economic Survey** | 0-0-4 | 4 | 50 | 0-40-10 |
| **IV** | Core Course **Level: 500-599** | PG2ECON 4041 | **Community Engagement** | 0-0-2 | 2# | 50 | 0-40-10 |
| | | | | | | | |
| | **Total IV$^{th}$ Sem** | | | | **20** | **250** | |
| | | | | | | | |
| | **Total (I-IV) sem** | | | | **90** | **1250** | |

**# Non Credit Course, Credit reflected here is for Evaluation purpose only. However, this shall not be taken into consideration in the calculation of SGPA and CGPA**

**Structure of 2 year PG Programme in Economics (with Coursework & Research in III-IV semester)**

**First two semesters are common with 2YPGP with Coursework**

**Third & Fourth Semesters**

| Sem | Course Type | Course Code | Course Title | L-T-P | Credit | Marks | Marks Th-Pr-IA |
|---|---|---|---|---|---|---|---|
| **III** | **Dissertation** | PG2ECON 3031 | **Dissertation** | 0-0-20 | 20 | 150+100 = 250@ | 0-250-0@ |
| **IV** | **Dissertation** | PG2ECON 4031 | **Dissertation** | 0-0-20 | 20 | 150+100 = 250@ | 0-250-0@ |
| | **Core Course** | PG2ECON 4041 | **Community Engagement** | 0-0-2 | 2# | 50 | 0-40-10 |
| | **Total (I-IV) Sem** | | | | **90** | **1250** | |

**@ Preparation & Submission of Research Thesis/ Project Report (12 Credits)-150 Marks, Seminar Presentation (4 credits, 50 Marks) & Viva-voce (4 Credits, 50 Marks)**

**# Non Credit Course, Credit reflected here is for Evaluation purpose only. However, this shall not be taken into consideration in the calculation of SGPA and CGPA**

**Structure of 2 year PG Programme in Economics (with Coursework & Research in IVth semester)**

**First three semesters are common with 2YPGP with Coursework**

**Fourth Semester**

| Sem | Course Type | Course Code | Course Title | L-T-P | Credit | Marks | Marks Th-Pr-IA |
|---|---|---|---|---|---|---|---|
| **IV** | **Dissertation** | PG2ECON 4031 | **Dissertation** | 0-0-20 | 20 | 150+100 = 250@ | 0-250-0@ |
| | **Core Course** | PG2ECON 4041 | **Community Engagement** | 0-0-2 | 2# | 50 | 0-40-10 |
| | **Total (I-IV) Sem** | | | | **90** | **1250** | |

**@ Preparation & Submission of Research Thesis/ Project Report (12 Credits)-150 Marks, Seminar Presentation (4 credits, 50 Marks) & Viva-voce (4 Credits, 50 Marks)**

**# Non Credit Course, Credit reflected here is for Evaluation purpose only. However, this shall not be taken into consideration in the calculation of SGPA and CGPA**

# Template for Research Project / Dissertation

- Within 7 days of commencement of the Final Semester, all eligible and approved students will be allocated Supervisors as per availability and consent of faculty member.
- Topics will be submitted by such students within 15 days of commencement of the Semester to the HoD office forwarded duly by each allocated Supervisor.
- The Synopsis and outline of study shall be presented by the student within 45 days of commencement of the semester
- Students are to simultaneously start working on their Research Project / Dissertation
- Periodic assessment of data collection, analysis and report writing would be carried out by each allocated Supervisor
- End Semester Examination will comprise of submission of Project Report / Dissertation (at least 7 days prior to due date of Viva-voce) and Viva-voce and/or Presentation in front of the Examiners (at least one external examiner should be present)
- Format for Project Report / Dissertation shall be as follows:
    - Preliminary Section (of 1500-2000 words) providing Background, Conceptual frame, Literature review, Identification of research gaps, Objectives, Importance of literature review, Methods/ procedure /steps, Data sources.
    - Main Section (of 7000-7500 words) with subsections on Results & Discussion
    - Concluding section (of 500-1000 words) with focus on Policy Implications
- Format for Report on Community Engagement and Social Outreach shall be as follows:
    - Preliminary Section (of approx. 500 words) providing Background of Study area, Identification of Problems and Action areas;
    - Main Section (of 1000-1500 words) on Work done by the student, supported by documentary evidence;
    - Concluding section (of approx. 500 words) on Impact of work done by the student

The above guidelines are common to all the candidates. However depending on the research topic, the candidate and supervisor have the freedom to work out the micro details.

## Question Pattern for Theoretical Papers

- In each paper of 75 marks the End-semester examination shall be of 60 marks. There shall be 9 questions of 10 marks each from which 6 questions are to be answered by the candidates (Time 3 hours).
- In each paper of 50 marks the End-semester examination shall be of 40 marks. There shall be 6 questions of 10 marks each from which 4 questions are to be answered by the candidates (Time 2 hours).
- In each paper of 50 marks which has two groups, the End-semester examination shall be of 40 marks. There shall be 3 questions of 10 marks from each group. Candidates are to answer 4 questions taking 2 from each group. (Time 2 hours).

## Marking Pattern for Socioeconomic Survey & Project Paper PG2ECON4015 / PG1ECON2015

- Computer Applications (Internal Assessment) – 10 marks
- Socio-economic Survey & Report Writing – 15 marks
- Presentation of Survey Report – 15 marks
- Final Viva-Voce – 10 marks

# Detailed Syllabus

## 2 year Post Graduate Programme in Economics under NEP2020

## with effect from 2026-2027 session

**Core Paper**
**PG2ECON1011**
**ADVANCED MICROECONOMIC THEORY & APPLICATIONS**
**Credit: 6**
**Full Marks: 75**
**Lecture Hours: 90**

**Course Objective**: To understand decision making process of consumers, producers and sellers.
**Course Outcome**: Clear understanding of behaviour & decision making process of individuals, households and firms.

1. **Advanced Topics in Demand Function: (10 Lectures)**
   - Axioms of Consumer's choice, Indifference Curve, Utility function, Utility maximization
   - Ordinary and compensated demand function, Indirect Utility function, Roy's identity
   - Expenditure function – Properties, Shephard's lemma, Additively separable utility function, Quasi-linear utility function
   - Almost ideal demand system

2. **Advanced Topics in Production function: (10 Lectures)**
   - Specification of technology, Input requirement set, Properties of technology – Monotonic, Convex and regular; CD, CES and Leontieff technology
   - Returns to scale and scale elasticity, Elasticity of factor substitution
   - Homogenous and Homothetic production function, and case of multiple products.
   - Preliminary idea of technical and allocative efficiency.

3. **Advanced topics in Cost and Profit function: (10 Lectures)**
   - Properties of cost function, Shephard's lemma. Profit Maximisation – Factor demand and Output supply function, properties of profit function, Hotelling's lemma; Duality in production; Envelope Theorem

4. **Advanced topics in Markets: (10 Lectures)**
   - Comparison of Welfare under Perfect Competition and Monopoly; Choice of both qualtity and quality under monopoly and its welfare implications; Impact of tax on Monopoly
   - Natural monopoly and sub-additivity of cost function
   - Oligopoly Models – Cournot, Bertrand, Stackelberg model
   - Introduction to basic game theory - Nash equilibrium.

5. **Economics of Uncertainty: (10 Lectures)**
   - Distinction between risk and uncertainty-Individuals behaviour towards risk-Contingent
   - Consumption - Von-Neumann–Morgenstern expected utility function – Properties - uniqueness of expected utility function – positive affine transformation – consumer's equilibrium under uncertainty
   - Arrow-Pratt measures of risk aversion - absolute and relative measures
   - Allocation of wealth to risky asset-output decision under uncertainty

6. **Asymmetric Information: (10 Lectures)**
   - Economics of Information - Imperfect Information - the market for Lemons - Akerlof's Model - the Principal-Agent Model

**7. General Equilibrium: (10 Lectures)**

- Walrasian General Equilibrium - a Pure Exchange Model - An aggregate Excess demand function -Walras Law - composite commodity theorem - existence of a general equilibrium
- Uniqueness and stability of General equilibrium

**8. Advanced topics in Welfare Economics: (10 Lectures)**

- Social Welfare Functions - The Pareto conditions - Pure Exchange–Pure Production - the Classical Theorem of Welfare Economics - The Theory of the second Best
- Arrow's Social Welfare function - General Possibility theorem - Compensation Principle - Kaldor-Hicks-Scitovsky

## References


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**Core Paper**
**PG2ECON1012**
**ADVANCED MACROECONOMIC THEORY AND APPLICATIONS**
**Credit: 6**
**Full Marks: 75**
**Lecture Hours: 90**

**Course Objective**: To explain the functioning of national economy
**Course Outcome**: Ability to understand & analyse the structure, performances, behaviour and decision making of aggregate economy. Apply macroeconomic principles to explain national and international situations of employment, wages, prices, exchange rate mechanism and capital flow

1. **Unemployment** **(15 Lectures)**
   - The Natural Rate – Types of Unemployment – Full Employment
   - Wage rigidity - Generic Efficiency wage Model - General Version of Efficiency wage model, Shapiro-Stiglitz model, Insider-Outsider model

2. **Wage-Unemployment-Inflation Trade-off** **(15 Lectures)**
   - Why are Wages sticky; The Phillips curve; Lipsey's theoretical rationale behind its existence; Role of Expectations; Adaptive expectation and Rational expectation: Application in Cagan's model. Expectations Augmented Phillips Curve. Single period wage contract model, Two period wage contract model, Policy irrelevance result.
   - Inflation and interest rate- Fisher's equation, Tobin-Mundell Effect.
   - Short run Aggregate supply function- The Sticky Wage model, The Workers' Misperception model, The Imperfect Information model and the Sticky Price model.
   - Derivation of Expectation Augmented Phillips Curve from the Short run Aggregate supply function: Okun's law, Supply Shocks.

3. **The Demand for Money** **(15 Lectures)**
   - Keynesian Regressive Expectation model
   - Portfolio Balance Approach
   - Keynesian macroeconomics without the LM Curve.

4. **Open Economy Macroeconomics-I** **(12 Lectures)**
   - Balance of Payments accounting; national product accounting; monetary accounting
   - Different Exchange rate regimes and Measures of exchange rate
   - IS-LM model with goods trade: comparative statics results- Monetary policy, Fiscal policy, Exchange rate policy (Devaluation).

5. **Open Economy Macroeconomics-II** **(12 Lectures)**
   - Extension to international capital market: perfect capital mobility under fixed exchange rate – Effectiveness of monetary and fiscal policy.
   - Extension to international capital market: perfect capital mobility under flexible exchange rate regime: The Mundell-Flemming Model.
   - Extension to international capital market: imperfect capital mobility under flexible exchange rate.
   - Exchange rate Overshooting.

6. **Dynamic Models with saddle paths** **(20 Lectures)**

- Dynamic IS-LM model
- Tobin-Blanchard model
- The Extended Blanchard model
- Cagan's model of Hyperinflation
- Baseline theory of investment, User cost of Capital, Tobin's 'q' theory of investment

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Turnovsky, S. J (1995): Methods of Macroeconomics Dynamics (Prentice Hall India Pvt Ltd.)

**Core Paper**

**PG2ECON1013**

**ADVANCED DEVELOPMENT ECONOMICS: THEORY AND APPLICATIONS**

**Credit: 6**

**Full Marks: 75**

**Lecture Hours: 90**

**Course Objective**: To explain the historical process of economic development and its interaction with society, state and market

**Course Outcome**: Ability to understand the historical causes of underdevelopment & pathways for development. Special emphasis on non-material aspects of development – social sector and gender issues. Apply methods to measure and analyse inequality, poverty, cost-benefits of education & health, gender discrimination. Ability to relate policies with outcomes in context of developing countries.

1. **Poverty** **(10 Lectures)**
   - Conceptual Issues in Poverty Measurement;
   - Poverty Measures & their limitations – Head Count Ratio (HCR), Income-gap Index (IGI), Squared Poverty Index (SPI); Foster-Greer-Thorbecke (FGT) measures of poverty - Sen's Index of Poverty- The Sen-Shorrocks-Thone (SST) Index - Evaluation of Poverty Measures.
2. **Growth & Inequality** **(12 Lectures)**
   - Interconnections between Inequality and Development - The Inverted U hypothesis of Kuznets; Possible explanations of Inverted U – Uneven and Compensatory Changes; Tunnel Effect and Tolerance- Income Inequality Revisited: Pikettyvs Kuznets.
   - Innovation, Economic Growth and Inequality – Model of Aghion and Hewitt- Joseph Schumpeter's Theory of "Creative Destruction"- Inequality of Income/Wealth as a Consequence of the Difference in the Rate of Economic Growth and Innovation Activity.
3. **Migration Models in Development** **(10 Lectures)**
   - Ranis-Fei model; Dixit and Marglin model; Jorgenson model; Labour Turnover Model; Recent Empirical Evidences.
4. **Urbanisation& Development** **(8 Lectures)**
   - Urbanization in India: Components of Urban Population Growth; Forces of Urbanization in the Developed and Developing Countries and the Over-Urbanization Phenomenon
   - Urbanisation and Environment - Smart City Development
5. **Population and Development** **(12 Lectures)**
   - From Development to Population; Theory of Demographic Transition; Historical Trends; Adjustment of Birth and Death Rates; Household Choice Models
   - From Population to Development; Malthusian View; Growth Impact; Population and Environment; Population and Innovation; Malthus vsBoserup's arguments
6. **Topics in Social Capital &Development** **(12 Lectures)**
   - O-Ring Theory of Development
   - Basu's Triadic Power Model
7. **Applications** **(11 Lectures)**
   - Measurement of Poverty & Inequality– HCR, PGI, IGI, SPI; Gini Index, Kuznets Ratio, Palma Ratio, Theil Index, Computation of the Lorenz Curve
   - Empirical Testing of the Inverted U hypothesis

- Empirical assessment of Innovation and Inequality
- National Projection of Total Population and Age-Sex composition – Mathematical Methods and Cohort-Component Methods; Methods of Sub-National Projection of Population; Projection of the Economically Active Population
- Concepts of Stable, Stationary, and Quasi-Stationary Population


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**Thirlwall, A.P.- Growth and Development**

**United Nations - Human Development Report (various issues)**

United Nations Publications, *The Determinants and Consequences of population Trends* (Series No.50)

Victor Aguirregabiria: SEN-SHORROCKS-THON INDEX, Encyclopaedia of World Poverty

Visaria, V. (1985), "Infant Mortality in Indian : Level Trends and Determinants" Economic and Political Weekly, Vol.20,No.32, August 10, 1985.

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**Core Paper**

**PG2ECON1014**

**RESEARCH METHODOLOGY FOR ECONOMICS**

**Credit: 6**

**Marks: 75**

**Lecture hours - 90**

**Course Objective**: To equip students with skill for formulation of a research problem, designing of questionnaire, designing sample and its size across various modes of primary data collection. They would also know possible sources of sampling and non-sampling errors and methods to clean data. Provide exposure to data analysis and report writing.

**Course Outcome**: Skills to undertake primary data based research, competency in executing sample surveys, knowledge of secondary data sources in Indian context, small scale data analysis and report writing.

***Internal Assessment of this course shall be in the form of Computer Practical***

**1. Stages of a Research (5 lectures)**

- Identifying a Research Problem - Literature Review and tools for reference collection - Critical Evaluation of Literature Review - Formulation of hypotheses - Research design - Data analysis - Interpretation of result – Report Writing – Ethics in Research

**2. Research Design (5 lectures)**

- Meaning of Research Design - Necessity of Research Design, Framework and parameters - Approaches to Research Design: Qualitative and Quantitative - Types of Research Design: Explanatory, Descriptive, Diagnostic, Experimental, Exploratory and Hypothesis Testing Design

**3. Methodologies of collection of data (10 lectures)**

- Concept of Universe, Population & Sample; Complete enumeration vs. sample survey
- Sampling techniques: basic ideas of simple random sampling (with and without replacement), stratified random sampling, circular sampling, sampling proportional to size; Snowball Sampling; Purposive sampling; merits & demerits
- Practical methods of drawing random sample using random number tables.
- Prerequisites for Field survey & preparation of Tabulation Format (blank tables)
- Preparation of questionnaire depending on nature of survey - illustrations on the basis of preparation of hypothetical questionnaire

**4. Estimation (15 Lectures)**

- Interval Estimation –Interval Estimators of Population Mean, Population Variance, and Population Proportion.
- Estimating K-variable GLM – Assumptions & Estimation (using Matrix Algebra)
- Estimation in presence of - Heteroscedasticity, Autocorrelation & Multicollinearity
- Familiarity with Software to estimate CLRM (MSExcel, R, Stata, etc)

**5. Estimation with Qualitative Dependent Variables (10 Lectures)**

- Nature and types of Qualitative Response Models –Linear Probability Model (LPM) and its application, Problems with LPM; Logit Model – Estimation of the Logit Model and its application; Tobit Model and its application.

**6. Estimation under Simultaneous Equation System (20 Lectures)**

- Basic Concepts - Structural Form, Reduced Form, and Final Form; Identification problem - Rank and Order conditions; Reduced Form approach to identification -Methods of Estimation - Single Equation Approach – Problems of applying OLS in simultaneous equation system – Simultaneous Bias – Contemporaneous Correlation – OLS in Recursive System
- Estimation through the methods of: Indirect Least Squares (ILS); Instrumental Variable (IV); 2-Stage Least Square; Properties of these estimators.

**7. Testing of Hypothesis (5 Lectures)**

- Simple Parametric Tests based on $\tau$, t, $\chi 2$ and F Distributions –Small Sample Tests, Large Sample Tests.
- Non-parametric Tests: Median Test, Run Test, Wilcoxon Rank Sum Test, Kruskal-Wallis Test, Concordance Test.

**8. Computer Practical on the methods mentioned in the modules above (Internal Assessment)**

**References (Topics 1-3):**


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Booth, Wayne C() The Craft of Research

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Cooper, Donald R. and Pamela S. Schindler () Business Research Methods

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**Minor Elective Paper**
**PG2ECON1021**

**PG2ECON1021A**
**DEMOGRAPHY**
**Credit: 4**
**Full Marks: 75**
**Lecture Hours: 60**
**[THIS COURSE IS FOR EXTRA DEPARTMENTAL STUDENTS ONLY]**

**Course Objective**: Understand the process of population dynamics
**Course Outcome**: Clear understanding of demographic trends and patterns. Conceptual command over the dynamics of size and composition of population, how demographic changes affect national and global economy, and a special focus on India's situation.

1. **Basic Concepts and Indicators** **(8 Lectures)**
   - Vital Rates – Fertility, Mortality, Age Pyramids, and Life Tables

2. **Human Resource and Development** **(10 Lectures)**
   - From Development to Population; Theory of Demographic Transition; Historical Trends.;
   - From Population to Development; Malthusian View; Growth Impact; Population, Environment and Technology

3. **Migration and Urbanization** **(10 Lectures)**
   - Migration in India: Concepts, Determinants & Consequences; Measures of Internal Migration;
   - Urbanization in India: Components of Urban Population Growth; Forces of Urbanization in the Developed and Developing Countries and the Over-Urbanization Phenomenon

4. **Trends in Population, Population Projection & Population Policy in India** **(10 Lectures)**
   - Concepts of Stable, Stationary, and Optimum Population
   - Major demographic features of India's population – Spatial, Age, Sex, Occupational Structure of Indian Population; Birth rate, Death rate, Life Expectancy & Infant Mortality; Trends & Patterns;
   - National Population Policies -Manpower Planning in India.
   - National Projection of Total Population and Age-Sex composition – Mathematical Methods and Cohort-Component Methods; Methods of National & Sub-National Projection of Population; Projection of the Economically Active Population, Demographic Dividend..
5. **Aging and Demographic Change** **(12 Lectures)**
   - Aging Process - Ageing around the world
   - The impact of demographic changes - The changing balance of age groups
   - Social, Economic, and Demographic Changes among the Elderly
   - Dependency ratio

READING LIST


Bogue, D.J. (1971), Principles of Demography, John Wiley, New York.

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**Minor Elective Paper**
**PG2ECON1021B**
**APPLIED STATISTICS**
**Credit: 4**
**Full Marks: 75**
**Lecture Hours: 60**
**[THIS COURSE IS FOR EXTRA DEPARTMENTAL STUDENTS ONLY]**

**Course Objective**: This course aims to make students familiar with the data collection and dissemination process undertaken by government agencies in India
**Course Outcome**: This course will make the students conversant with Ideas of trend, fitting of linear, quadratic trend, exponential curve and plotting of trend values and comparing with given data graphically. It will introduce students to ideas and measurement of seasonal indices. Students will have hands-on training to enable Construction of price and quantity index numbers by comparison and interpretation; Construction of wholesale price index numbers. Students will also learn to handle demographic data and be able to Compute measures of mortality; Complete the life table; Compute measures of fertility and population growth.

***Internal Assessment of this curse shall be in the form of computer practical***

**1. Price Index Numbers (15 Lectures)**

- Definition, Criteria for a good index number, and different types of index numbers. Construction of index numbers of prices and quantities, consumer price index number. Uses and limitations of index numbers.
- **Application and hands-on training of:**
  - Construction of price and quantity index numbers by Laspeyres' formula, Paasche's formula, Marshall-Edgeworth's formula, Fisher's Formula - Comparison and interpretation.
  - Construction of wholesale price index number, Cost of living index number, fixed base index number and consumer price index number with interpretation.

**2. Analysis of Time Series (15 Lectures)**

- Components of time series, Decomposition of time series. Additive and multiplicative model with their merits and demerits, Illustrations of time series. Measurement of trend by method of free-hand curve, method of semi-averages and method of least squares (linear, quadratic and modified exponential). Measurement of seasonal variations by method of ratio to trend.
- **Application and hands-on training of:**
  - Fitting of linear, quadratic trend, exponential curve and plotting of trend values and comparing with given data graphically.
  - Measurement of seasonal indices by Ratio-to-trend method and plotting of trend values, and comparing with given data graphically.

**3. Vital Statistics (12 Lectures)**

- Demographic Methods: Introduction, measurement of population, rates and ratios of vital events. Measurement of mortality: CDR, SDR (w.r.t. Age and sex), IMR, Standardized death rates. Life tables: definition of its main functions and uses. Measurement of fertility and reproduction: CBR, GFR, and TFR. Measurement of population growth: GRR, NRR.
- **Application and hands-on training of:**
  - Computation of measures of mortality
  - Completion of life table
  - Computation of measures of fertility and population growth

4. **Demand Analysis** **(12 Lectures)**
   - Demand and Supply Curves. Price elasticity of demand and supply..
   - **Application and hands-on training of:**
     - Determination of demand curve from market data
     - Understanding Engel's law and Engel curve - Deriving Income elasticity of demand - Different types of Engel curve.

5. **Statistical Quality Control** **(6 Lectures)**
   - Importance of statistical methods in industrial research and practice. Determination of tolerance limits. General theory of control charts, process & product control, Control charts for variables: X-bar and R-charts. Control charts for attributes: p- chart and c-chart.
   - **Application and hands-on training of:**
     - Determination of tolerance limits
     - Computing X-bar and R-charts
     - Computing p-charts and c-charts

6. **Computer Practical on the methods mentioned in the modules above (Internal Assessment)**

**Reading/Reference List**


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**Core Paper**
**PG2ECON2011**
**INDIAN ECONOMIC THOUGHT**
**Credit: 6**
**Full Marks: 75**
**Lecture Hours: 90**

**Course Objective**: Propagate Indian Knowledge System and the thoughts of Indian philosophers on economic and social processes
**Course Outcome**: Part of Indian Knowledge System – this course provides a historical context of economic thoughts by great Indian scholars. Prepares students for better understanding the current Indian economic situation in global context and the policies needed to build a resilient and dynamic India

**1. Economic Thoughts in Ancient India: (15 Lectures)**

- Kautilya's Arthashastra: Varta (National Economy), Importance of agriculture, animal husbandry and trade; Ideas on population growth and slavery; Economic functions of State; Public Finance; Town planning and social security

**2. Economic Thoughts during Pre-independence period: (15 Lectures)**

- Dadabhai Naoroji: Taxation, military expenditure and public debt; Drain theory;
- Economic Ideas of Ranade; Poverty and industrialization; Agrarian Policy; Railways
- Ramesh Chandra Dutta's idea on Causes of Poverty and remedies;
- Gopal Krishna Gokhale's idea on public expenditure and financial reforms; Thoughts on Education
- Subhas Chandra Bose's thoughts on Planning
- Ambedkar's ideas on Public Finance; Currency; Caste & Class

**3. Economic Thoughts of Tagore (15 Lectures)**

- Relevance of Tagore's Economic Ideas and Tagore's Economic Model;
- Ideas on Rural Development;
- Ideas on Welfare Economic model of Education and its relevance in present scenario;
- Tagore's Co-operative Principle;

**4. Gandhian Economics: (15 Lectures)**

- Sarvodaya & Welfare economy; Population and food problem; Decentralization; Technology, Industrialisation and Scale of Production; Regeneration of village and khadi industry; Doctrine of trusteeship;

**5. Economic Thoughts in Modern India: (15 Lectures)**

- Radhakamal Mukherjee: Ecological theory of population; Ecological Sustainability & Well being
- C. N. Vakil: Fiscal policy and financial development in India;
- D.R. Gadgil: Industrial evolution, war and economic policy and planned economic development;
- V.K.R.V Rao: National income of India, income tax in India, war-time and post-war economic policies, deficit financing and economic development, dealing with post-devaluation problems.

**6. Economic Thoughts of Indian Nobel Laureates: (15 Lectures)**

- Economics of Amartya Sen: Choice of Technique - Capability Approach – Development as Freedom – Social Choice Theory
- Economics of Abhijit Banerjee: Poverty and Public Action -

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Basu, Asish Kumar (ed.) (2013) Rabindranather Samaj O Rashtrabhavna, Kolkata, Evenel Press

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Sen, Sudhir (1943) *Rabindranath on Rural Reconstruction*, Calcutta, Visva-Bharati

**Core Paper**
**PG2ECON2012**
**RESOURCE AND ENVIRONMENTAL ECONOMICS**
**Credit: 4**
**Full Marks: 50**
**Lecture Hours: 60**

**Course Objective**: To make students aware about major environmental issues and their interlinkage with economic processes
**Course Outcome**: Ability to analyse environmental issues, especially pollution control and global & local sustainable development policies

**1. Relationship between Environment and Economy (4 Lectures)**

- Laws of thermodynamics

**2. Environmental Asset as public good (5 Lectures)**

- Concept of market failure and its causes: incomplete markets, externality, non-rivalry and non-excludability

**3. Economics of Renewable Resource (10 Lectures)**

- Economic of Fishery - Growth function – logistic model – The sustained yield function – Gordon Schaefer model - Underlying assumptions – Drawbacks of MSY – Static model of fishery – bio-economic model and private property regime.
- Economics of Forestry – The volume function and the mean annual increment – optimal single rotation – The rotation. Timber supply the short run and in long run, socially optimal depletion of forest in the presence of amenity benefits
- Economics of Land and Water - Debate over Renewablity and Non Renewablity – Optimum use and re-use of Land and Water

**4. Economics of Non Renewable Resource (8 Lectures)**

- Basic concepts – Hotelling rule – The concept of backstop - A simple model of optimal depletion – Perfect competition and monopoly in non-reasonable resource market

**5. Uncertainty, Irreversibility and Option Value (8 Lectures)**

- Principles of Uncertainty, Irreversibility, Inter-Temporal Efficiency, Inter-Generational Equity; Environment-Development Trade-Offs; Environmental Costs of Economic Growth, Limits to Growth
- Environmental Damages/Benefits, Social Cost Benefit Analysis; Definitions: Total Economic Value Use Value, Option Value and Non-Use Values

**6. Environment and Development (8 Lectures)**

- Environmental issues: local regional and global: Air pollution, water pollution, noise pollution, waste pollution – measurements issues.
- Trade-off between Development and Environment; Environmental Kuznets Curve - Concept, Genesis, Factors and Lessons

**7. Environmental Policy (8 Lectures)**

- Pollution as negative externality – optimal pollution, Taxation and optimal pollution – The optimal Pigovian tax, The concept of property right - Coase theorem, Potential for market bargain in externality – criticism of Coase theorem. Tradable Pollution Permits – Type of Permits – advantage of TPPs

**8. Sustainable Development (5 Lectures)**

- Context and the concept – Difference between Economic Growth, Development and Sustainable Development – Values and measures of S.D. SDG goals 2030 and targets

**9. Institutions and their functions (4 Lectures)**

- UNEP, IPCC, CPCB, Green Bench

**References:**


Pearce, D and RK Turner: *Economic of Natural Resources and the Environment*, Prentice Hall.

Hodge,Ian *Environmental Economics*, Palgrave MacMillan

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Clark, C.W. (1974). Mathematical Bioeconomics. In: van den Driessche, P. (eds) Mathematical Problems in Biology. Lecture Notes in Biomathematics, vol 2. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-642-45455-4_3

**Core Paper**
**PG2ECON2013**
**BASIC FINANCIAL ECONOMICS**
**Credit: 4**
**Full Marks: 50**
**Lecture Hours: 60**

**Course Outcome**: Make students familiar with the functioning of financial market
**Course Outcome**: Understand how financial resources are transacted in the market and its impact on the economy

**1. Financial Markets and Institutions (10 Lectures)**

- Real and Financial Assets; Securities –Types and Attributes; Financial Markets; Capital Market –Primary & Secondary; Trading of Securities, Investment Banks and their operations, Price discovery mechanism
- Theories of Capital Structure; Capital Structure and the pie theory, Maximizing firm value versus maximizing stockholders' interest, Financial Leverage and Firm Value – Modigliani and Miller Propositions.

**2. Security Analysis (10 Lectures)**

- Economic Analysis: Economic Forecasting and Stock Investment Decision, forecasting techniques, Industry Analysis: Industry Life Cycle, Structural Analysis, Techniques for evaluating relevant industry factors. Company Analysis: Analysis of financial statements, financial ratios and their significance, Impact of changes in accounting policies.
- Technical Analysis – Dow theory, Random Walk theory.

**3. Efficient Market Hypothesis (10 Lectures)**

- Asymmetric information in financial markets, Efficient Versus Perfect Market; Allocation, Internal & External Efficiencies; Weak, Semi-strong and Strong Forms of Pricing Efficiency-Meaning and Tests.

**4. Portfolio Analysis (10 Lectures)**

- Risk and Return of Individual Securities; Portfolio Risk and Return; Efficient Portfolios; Portfolio Selection Models; Diversifications
- Capital Asset Returns- Capital market line and Security market line

**5. Capital Market Theories (5 Lectures)**

- Capital-Asset Pricing Model; Arbitrage Pricing Theory and Multi-factor Models of Risk.

**6. Foreign Exchange Rates and Markets (10 Lectures)**

- Determination of Foreign Exchange Rates; Functions of Foreign Exchange Markets – Spot Market, Forward Market; Interest Rate Parity Theory –covered and uncovered; Efficiency in Forex markets
- Theories of Foreign Exchange Rate Movements -Purchasing Power Parity Theory, Expectations Theory, International Fisher Effect Theory.

**References**

Bodie, Kane, Marcus & Mohanty: Investments, Tata McGraw-Hill Publishing Company Limited.
Elton and Gruber: Modern Portfolio Theory and Investment Analysis, John Wiley & Sons.
Fischer & Jordan: Security Analysis and Portfolio Management, Prentice-Hall of India Pvt Ltd.
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Rick Bensignor (Ed.): New Thinking in Technical Analysis, Viva Books Private Limited.
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Yuh-DauhLyuu : Financial Engineering and Computation,Cambridge University Press.

**Core Paper**
**PG2ECON2014**
**DEVELOPMENT STUDIES**
**Credit: 4**
**Full Marks: 75**
**Lecture Hours: 60**

**Course Objective**: Make students aware about specific developmental challenges and how to solve them based on understanding of economic theories and experiences across the globe
**Course Outcome**: Ability to understand & analyse theories, models, policies related to development of education and health sectors in developing countries. Understand the processes, reasons and ways to eradicate exclusion based on caste, class and gender.

**1. Introduction to Social Sector (3 Lectures)**

- Components of Social Sector – Importance of Social Sector in Development

**2. Education and Development (8 Lectures)**

- Education as means of Development – Cost-Benefit Analysis in Education – Cost of Education - Private costs & Social costs; Wastage and Stagnation;
- Benefits of Education - Direct and Indirect benefits; Private and Social benefits; Externalities in Education – Market failure – Public vs Private Debate – Education and Socio-Economic Status

**3. Health and Development (8 Lectures)**

- Why health is important – Direct and Indirect effects on private and social development; Concept of human life value; Burden of Disease
- Determinants of health – poverty, malnutrition and environmental issues;
- Institutional issues in health care delivery; Health Financing Models; Health Insurance & Risk Pooling

**4. Applications (3 Lectures)**

- Methods to measure benefits from Education
- Measuring Inequalities in Education and Health - Concentration Index and Concentration Curves; Class and gender perspectives;
- Measuring Cost of Illness – YLL, YLD, DALY, QALY

**5. Gender Disparity & Deprivation (5 Lectures)**

- Gender Disparity & deprivation – Missing Women problem - AK Sen's Seven dimensions of Gender Deprivation

**6. Gender and Work (10 Lectures)**

- Labour market issues–occupational segregation, wage disparity, housewifization, feminization, flexibility and casualization – Paid/Unpaid Debate – Care Work & Purple Economy
- Globalisation & Gender Impacts – SAP & Land Grabs – Working Conditions in Global Factories

**7. Applications (3 Lectures)**

- Gender development and Gender Inequality Measurement Techniques - GII, MPI, WEIA, SIGI, GPI etc
- Measuring Women's contribution to National Economy
- Measuring Discrimination in Labour Market – Oaxaca-Blinder Technique

**8. Development and Social Inclusion (7 Lectures)**

- Importance of Inclusive Development
- Factors affecting Inclusion/Exclusion - Structural factors – Political factors – Economic factors - Historical Background - Intergenerational Mobility
- Growth, Displacement and Inclusive Development
- Network, Markets and Inclusion

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**Minor Elective Paper**
**PG2ECON2021**

**PG2ECON2021A**
**INDIAN OFFICIAL STATISTICS**
**Credit: 4**
**Marks: 75**
**Lecture hours - 60**
**[THIS COURSE IS FOR EXTRA DEPARTMENTAL STUDENTS ONLY]**

**Course Objective**: To equip students with knowledge about the Indian Official Statistics collection, generation and dissemination system.
**Course Outcome**: Skills to use Indian Official Statistics as secondary data sources in Indian context. Understand the processes and use appropriate data.

1. **Official Statistical System in India** **(10 lectures)**
   - Role of Ministry of Statistics & Program Implementation (MoSPI),
   - Central Statistical Office (CSO), National Sample Survey Office (NSSO), Registrar general's Office, Labour Bureau, and National Statistical Commission
   - Methods of collection of official statistics, their Reliability and limitations.
   - Concept of Classification Schemes of Industry, Occupation, Activity

2. **Population Statistics** **(8 lectures)**
   - Working of RGI - Census data – collection – tabulation – information available - limitations

3. **Industrial Statistics** **(8 lectures)**
   - Working of CSO – ASI data – collection – tabulation – information available - limitations

4. **Labour Statistics** **(8 lectures)**
   - NSSO – survey structure – rounds and schedules – Employment & Unemployment Surveys – PLFS and rotating panel system - limitations

5. **Price Statistics** **(10 lectures)**
   - Labour Bureau – collection of price data – index number preparation – types of Price indices in India – CPI and WPI – CPIAL, CPIRL, CPIIW, CPIUW – base year changes - limitations

6. **National Account Statistics** **(8 lectures)**
   - National Income Accounting – Sectors and major heads – National and State tables - limitations
7. **Time Use** **(8 lectures)**
   - Collection of Time Use Data – Activity Types and Codes – strengths and limitations

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Saluja, MR (2017) Measuring India: The Nation's Statistical System, OUP

**Minor Elective Paper**

**PG2ECON2021B**

**SELECT FEATURES OF WEST BENGAL ECONOMY**

**Credit: 4**

**Full Marks: 75**

**Lecture Hours: 60**

**[THIS COURSE IS FOR EXTRA DEPARTMENTAL STUDENTS ONLY]**

**Course Objective**: This paper aims at making students aware about the regional economy of West Bengal

**Course Outcome**: This course provides a historical context of economic processes in West Bengal. Prepares students for better understanding of the current economic situation of West Bengal in national and global context and the policies needed to build a prosperous and welfare state.

1. **Economic Growth and Structural Change in West Bengal (10 Lectures)**
   - Level and growth of SDP and Per Capita SDP in West Bengal
   - District level comparison of SDP and per capita SDP - comparison of the State per capita income in West Bengal and National Per Capita Income
   - Sectoral Contribution of State Income and employment in West Bengal - Changing sectoral composition of state income and sectoral contribution to the growth of income in West Bengal in the post liberalization period.

2. **Agriculture and Agribusiness (10 Lectures)**
   - Trends in agricultural production and productivity in West Bengal - Cropping pattern - Crop diversification and Food Security
   - Agribusiness sector - Agribusiness priority sectors in West Bengal - Fisheries, food processing, horticulture
   - Agricultural Marketing- Schemes and services offered by the state government and major achievement.

3. **MSME and Rural Livelihood (10 Lectures)**
   - MSME investment limits - role of MSME in West Bengal in terms of state income and employability - A district wise overview of MSME clusters sectors
   - Challenges of MSME in West Bengal - Nature and extent of non-farm employment in West Bengal - SHGs and rural livelihood.

4. **Industries in West Bengal (10 Lectures)**
   - Jute and Tea, Iron and Steel, Engineering and Petrochemicals, Leather.
   - Problems and Prospects

5. **State of Public Finance (10 Lectures)**
   - State Budget - Sources of Income and Expenditure
   - Revenue Receipts - Tax Revenue -Non-Tax Revenues
   - State's Expenditure – Components and trend - Trends in sectoral allocation of fund
   - Analysis of Deficits - Primary deficit - Fiscal Deficit-Budget Deficit - Fiscal Decentralisation. Major decentralization initiatives.

6. **Rural Development and Social Welfare Schemes (10 Lectures)**

- Panchayat and Rural development - Swami Vivekananda Swanirbhar Karmasansthan Prakalpa (SVSKP), West Bengal Swanirbhar Sahayak Prakalpa (WBSSP) - Training on self-employment and livelihood augmentation
- Social Welfare Schemes for Women and Children - Social Welfare Schemes for farmers and migrant workers- Social Welfare Schemes for elderly and disabled- Social Welfare Schemes for education and livelihood.

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**Core Paper**

**PG2ECON3011**

**INTERNATIONAL ECONOMICS**

**Credit: 4**

**Full Marks: 50**

**Lecture Hours: 60**

**Course Objective:**

To understand the processes of international trade and flow of capital and how international flows encourage or discourage development processes in different sets of countries

**Course Outcome**

Ability to understand & analyse the working of international economic processes, transactions and the impact of trade on development

**1. Pure Theory of International Trade (8 Lectures)**

- Overview of Classical Trade Models
- Generalization of the Ricardian Model of Trade with multi-commodity and multi-country cases.
- Incomplete specialization -terms of trade and wage inequality in developing economies.
- Specific Factors, intermediate inputs, public goods and non-traded goods in international trade: Jones' model.
- Exchange models

**2. Trade and Development (8 Lectures)**

- Development in the open economy- Theory of immiserizing growth.
- Foreign capital and welfare- the Brecher-Alejandro (1977).
- Evolution of Trade Policies- emergence of trading blocs..

**3. Intra-Industry Trade, Strategic Trade Theory and FDI (10 Lectures)**

- Causes of Emergence and Measurement of Intra-Industry Trade.
- Trade under imperfectly competitive market with increasing returns (Krugman's Model), Pattern and gains;
- Intra-industry Trade; Returns to scale, product differentiation, monopolistic competition and basis of trade; Implications for standard theorems on international trade; Grubel-Lloyd Index.
- Multinational Corporations. Cartels and the interests of producing and consuming countries, monopoly and policies of exporting and importing countries, industrial policy and market rivalry

**4. Trade and National Welfare (5 Lectures)**

- Effects of Trade Policy on National Welfare: producing and consuming countries, small and large economies, policies of exporting and importing countries.

**5. Theory of Commercial Policy (8 Lectures)**

- Tariffs and Quotas policy
- Trade Policy with Domestic Distortions: Tariffs and The Theory of Optimum Subsidy
- The political economy of protection; The infant industry argument,
- Trade Controls in Practice,
- Non-optimality of free trade, optimal trade policy and the theory of the second best.

**6. Trade Policies and Imperfect Competition (8 Lectures)**

- Monopolistic competition models of trade, Love-for-Variety preferences, Gains from trade, Tariff versus quota under monopoly, Strategic trade policy: Cournot and Bertrand competition, Voluntary import expansion and export restrictions
- **Application**: In search of empirical support for trade and development - An introduction to empirical trade theory, Trade and economic development in the Newly Industrialized Countries.

**7. International Political Economy (8 Lectures)**

- WTO and the non-tariff barriers, Trade and environment; Trade, labour standards and human rights,
- Formation of regional trade blocs and barriers to free flows of trade.
- Asian Financial Crisis of 1997, Global Financial Crisis of 2008 and Euro Zone Crisis-Causes and Impact

**8. Empirical Issues in International Economics (8 Lectures)**

- **Gravity, Distance and International Trade** - Newton's Law of Gravitation in Economics - Intuitive Idea of Gravity Model in Economics-empirical Gravity Model -Constituents of the Gravity Model - Illustration.
- **Outsourcing & International Trade** - Outsourcing or Arm's length trade-meaning and significance- Gains from Outsourcing in a One-Good Model-Gains from Outsourcing in the Presence of Trade.
- **Trade Theory and the Role of Time Zones** - Time Zone Difference as a source of Trade and Comparative Advantage – a simple model.

***References***


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Zhang Peter G. (1998), IMF & Asian Financial Crisis, World Scientific, Singapore

**Core Paper**

**PG2ECON3012**

**GAME THEORY & BEHAVIOURIAL ECONOMICS**

**Credit: 4**

**Full Marks: 50**

**Lecture Hours: 60**

**Course Objective:**

To make students capable of understanding the nuances of behavioural economics, bargaining and competitive economic strategies

**Course Outcome**

Ability to understand & analyse the structure, performances, behaviour and decision making of individuals, firms and markets

1. **Static Games of Complete Information (9 Lectures)**
   - Cooperative and Non-cooperative Games
   - Normal (Strategic) form representation of non-zero sum games: Iterated elimination of strictly dominated strategies- concept of Nash equilibrium-Examples of pure Strategy equilibria: Non-existence of pure strategy equilibria; IERSDS, rationalizability and correlated equilibrium Prisoners'
   - Dilemma-Multiple Nash Equilibria; Cournot model of duopoly – final offer arbitration, the problem of the commons- mixed strategies , Trembling hand perfect equilibrium.
2. **Dynamic form representation of complete information games (9 Lectures)**
   - Extensive Form Games; multistage Games; Extensive Form, Multistage Games with observed actions - Commitments; Strategies and Equilibria in Extensive Form games concept of backward induction - Stackelberg game - wages and employment in a unionised firm.
   - Two stage game of complete but imperfect information – concept of sub-game; concept of information set; Sub game perfect Nash equilibrium - three period bargaining game - two stage repeated games; Repeated games with observed actions Infinitely repeated games – concept of trigger strategy- folk theorem
3. **Static game with incomplete information (9 Lectures)**
   - Cournot competition under asymmetric information.- normal form representation of static Bayesian games, concept of static Bayesian Nash equilibrium- battle of the sexes game in the framework of static game with incomplete information.
4. **Dynamic game with incomplete information (8 Lectures)**
   - Concept of sequential Rationality
   - Concept of perfect Bayesian equilibrium.
5. **Behavioural Game Theory (6 Lectures)**
   - Game theory & behavioural game theory;
   - Irrational players and equilibrium
6. **Dependent Preferences (5 Lectures)**
   - Kahneman/Tversky classic experiments;

- Prospect theory;
- Market implications: labour supply, marketing, industrial organization

**7. Choice Over Time (7 Lectures)**

- Samuelson's exponential-discounting;
- Self-control and hyperbolic discounting;
- Harmful substances and government policy;
- Anxiety, optimism & anticipation;
- Misperception of utility.

**8. Bounded Rationality (7 Lectures)**

- Heuristics and biases;
- Views of bounded rationality

## References


Ariely, Dan, Predictably Irrational: The Hidden Forces That Shape Our Decisions.

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Kreps, D. - Game Theory: A Non technical

Levitt, Steven D and Stephen J Dubner, Freakonomics: A Rogue Economist Explores the Hidden Side of Everything, Kindle Edition

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Shy, Oz- Industrial Organization.

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Thaler, Richard H, Misbehaving: The Making of Behavioural Economics.

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Wilkinson, Nick and Matthias Klaes, *An Introduction to Behavioral Economics.*

**Core Paper**

**PG2ECON3013**

**PUBLIC ECONOMICS**

**Credit: 4**

**Full Marks: 50**

**Lecture Hours: 60**

**Course Objective**

The objective of this course is to study government intervention in the economy, with a focus on how tax and expenditure policies influence resource allocation, income distribution, and overall economic welfare. At the postgraduate level, public economics emphasizes microeconomic foundations, welfare economics, and applied policy analysis, often using mathematical tools and econometric techniques.

**Course Outcome**

The expected course outcomes are – Ability to understand & analyse the performances, behaviour and decision making of the governmental side of the economy; Ability to evaluate economic policies of governments across different sets of countries.

## I. Foundational Theoretical Frameworks

### 1. Fundamentals of Welfare Economics (5 lectures)

- Fundamental Theorems of Welfare Economics, The Pareto criterion and limitations in real-world applications.
- Social welfare functions: Utilitarian vs. Rawlsian perspectives.

### 2. Market Failure and Government Intervention (7 lectures)

- Public Goods: Non-rivalrous and non-excludable goods; Free-rider problem; Samuelson Rule: MRS = MRT for efficient provision of public goods.
- Externalities: Negative- Pollution, congestion; Positive- Education, Vaccination.
- Intervention: Pigouvian Taxes/Subsidies: Internalise externalities to restore efficiency; Coase Theorem: Role of property rights and transaction costs.

### 3. Government: Economic Agent (8 lectures)

- Role of Government – Allocation, Distribution and Stabilization functions.
- Public Budget – Kinds of Budget; Zero Based Budgeting; Concepts of Budget Deficit; Budget in India,
- Understanding of Public Policy related to Budget Expenditure

## II. Optimum Taxation and Public Expenditure Theory

### 1. Taxation & Public Expenditure (10 lectures)

- Incidence of Taxation; Theory of Optimum Taxation; Income Tax and Commodity Tax; Elasticity & Buoyancy; Taxable Capacity; Tax Evasion; Efficiency Loss of Taxation
- Public Expenditure: principles, objectives, targets and achievements

### 2. Public Debt (6 lectures)

- Fiscal and Financial Policy as part of Macro Policy: Objectives, nature and instruments. Public Debt as Development Policy; Budget Deficit and Public Debt; Government Debt

Management; Types of Public Debt – Internal and External; Public Debt as Deferred Taxation; Burden of Public Debt

## III. Public Policy

### 1. Public Goods and Public Policy (10 lectures)

- Concept of Public and Private Goods, Pure Public Goods, Public Goods provided by Private Company/Agents; Policy Design
- Local, Regional and Global Public Goods – concept, understanding and policy design
- Private, Public and Merit Goods; Non-Exclusion Principle
- Development Policy: Education & Health Policy, Innovation & R&D expenditure,
- Social Welfare – Social Security, Ageing and Pension, Health Insurance policy – public and private expenditure, PPP model

### 2. Fiscal Federalism (8 lectures)

- Fundamental Issue of Fiscal Federalism; Why have a Federal Structure – Stigler; Oates – Decentralisation Theorem; Theory of Clubs; Dynamics of Jurisdiction Formation; Optimal Federalism and Redistribution; Role of Grants-in-Aid.
- Fiscal Federalism in India

## IV. Applications: Public Policy Analysis

### 1. Empirical Methods in Public Economics (8 lectures)

- Policy analysis: principles, methods, scale and applications - Cost-Benefit analysis, PPP model analysis
- Tools and Techniques: Difference-in-Differences (DiD), Regression Discontinuity Designs (RDD), Instrumental Variables (IV), Estimating behavioural elasticities (e.g., labour supply elasticity, taxable income elasticity)

### 2. Current Topics in Public Economics (8 lectures)

- Environmental Taxation and Climate Policy,
- Digital Economy and Taxation of Multinationals,
- Wealth and Inheritance Taxes: Rising inequality and policy responses,
- Universal Basic Income (UBI) and AI-driven labour displacement,
- Public Debt Sustainability in post-pandemic and ageing economies.

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Mahesh Purohit, Value Added Tax: Experiences of India and Other Countries, 2007.
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R.A. Musgrave and P.B. Musgrave, Public Finance in Theory & Practice, McGraw Hill Publications, 5th edition, 1989.
T. Persson and G. Tabellini. *Political Economics*, MIT Press, 2000.
Papers from various journals and various volumes of *Handbook of Public Economics*

**Recommended Textbooks**

- ***Public Finance and Public Policy* – Jonathan Gruber**
- ***The Theory of Taxation and Public Economics* – Louis Kaplow**
- ***Lectures on Public Economics* – Atkinson &Stiglitz**

**Major Elective Paper**
**PG2ECON3014**

**PG2ECON3014A**
**ECONOMICS OF SUSTAINABLE DEVELOPMENT**
**Credit: 4**
**Full Marks: 50**
**Lecture Hours: 60**

**Course Objective:**

To create knowledge about dimensions of sustainable development and tools to monitor development processes.

**Course Outcome**

Ability to analyse environmental issues, especially the economics of natural resources and global & local sustainable development policies

1. **Dynamic model of fishery** **(10 Lectures)**

- Derivation of optimal stock in a dynamic framework,
- Derivation of catch locus, Mathematical derivation (through use of control theory) and geometric exposition
- Derivation of optimum steady state level of stock and yield; Dynamic open access model of fishery.

2. **Commons and Anticommons** **(10 Lectures)**

- Tragedy of commons - Unmanaged CPR, Managed CPR
- Private property regime; trust and credibility, conditions for credible promises;
- Problem of anticommons – basic concept

3. **Optimum extraction of exhaustible resources** **(12 Lectures)**

- General model of optimal depletion
- Optimal depletion under exploration and externality
- Exhaustible resource depletion under competition, monopoly and oligopoly

4. **Natural resource scarcity** **(8 Lectures)**

- Resource scarcity – Malthusian, Ricardian, and Cornucopian View; Physical and Economic measures
- Resource scarcity mitigation, recycling and substitution.

5. **Environmental Accounting** **(10 Lectures)**

- Basic Theory of Environmental Accounting
- Dynamic Optimization Model on National Income - Hawtrick‘s rule and sustainable income
- Environmentally adjusted national product and sustainable resource management-illustrations with various types of non-renewable and renewable resources
- Accounting of ecosystem services.

6. **Land and Water Management Issues in Sustainable Development** **(8 Lectures)**

- Concepts of sustainable development Issues and SDGs.

- Land for sustainable development, Land Management
- Water Resource, Water management for sustainable development

**7. The Blue economy (7 Lectures)**

- Concept and issues
- Difference between open access and common property resources,
- Wetland and its Ecological Services
- Economy ahead -scope and future prospects

**8. Resource Conservation (5 lectures)**

- Krutila-Fisher Model

**References:**

Hanley, N., J. Shogren and B. White: Environmental Economics in Theory and Practice, Macmillan.
Conrad, J.M.: Resource Economics, Cambridge University Press.
Phillip Neter: Natural Resource Economics.
Fisher, Anthony: Environmental and Resource Economics, Edward Elgar
Maler, K-G, Sara Aniyar and AsaJansson (2008) Accounting for ecosystem services as a way to understand the requirements of sustainable development, www.pnas.org/cgi/doi10.1073/pnas.0708856105
Perman, Roger, Yue Ma, James Mcgilvray and Michael Common: Natural Resource and environmental Economics, Pearson

**Major Elective Paper**
**PG2ECON3014B**
**AGRICULTURAL ECONOMICS-I**
**Credit: 4**
**Full Marks: 50**
**Lecture Hours: 60**

**Course Objective:**

Make students aware about the working of a agro based economy and how economics of agriculture shapes the rural economy

**Course Outcome**

Gaining a theoretical as well as an empirical understanding of the working of modern agriculture

## Group A (Marks 25)

1. **Importance of Agricultural Economics (10 Lectures)**
   - Agricultural economics-its relevance and importance-relationship of agricultural economics with other branches of economics- development theories and agricultural economics
2. **Role of Agrarian Institutions (10 lectures)**
   - Social Institutions in agriculture-their role in fostering or constraining growth- stagnation theories- Akerlof's model - Ethics and its role.

3. **Application of Agricultural Economics: Village Surveys: (10 Lectures)**
   - Techniques and Methodologies – Background – Selection of Villages – Identifying economic activities and social norms – field of inquiry – survey methods – reporting.

## Group B (Marks 25)

1. **Land Institutions and Land Markets: Efficiency and Equity Issues (12 Lectures)**
   - Efficiency of share cropping – Marshall and Cheung; Risk and Land contract
   - Share Cropping, MNCs and Contract Farming; Rules and Acts in India

2. **Agricultural Price formation (10 lectures)**
   - Agrarian price formation-Role of middlemen-Price expectations-Price fluctuations-Government policies of price stabilization.

3. **Agricultural Labour Market (13 lectures)**
   - Types of agrarian labour-permanent vs temporary- inequality, poverty and agrarian labour labour supply -seasonality of labour demand-A model of two-tiered agricultural labour market

## References


Basu, Kausik: *Less Developed Economy*, OUP

Bhaduri, A(1973): 'A study in agricultural backwardness in semi-feudalism', *Economic Journal*, Vol. 83

Braverman, A and Stiglitz, J.E(1981): 'Sharecropping and interlinking of agrarian markets' , *American Economic Review*, Vol. 72

Ellis, Frank - Peasant Economics- *Farm households and agrarian development*, Cambridge University Press

Eswaran, Mukesh and Ashok Kotwal (1996) Why Poverty persists in India, Oxford University Press.

Rudra, A(1982): *Myths and Realities, Allied Publishers / Political Economy of Indian Agriculture*.

**Major Elective Paper**
**PG2ECON3014**

**Major Elective Paper**
**PG2ECON3015A**
**APPLIED ECONOMETRICS**
**Credit: 4**
**Marks: 50**
**Lecture hours - 60**

**Course Objective:**
Make students able to understand the analytical econometric models and use them in real life situation

**Course Outcome**
Ability to apply econometric modelling to real life data for decision making, policy appraisal, impact evaluation and report writing

**Group-A**
**(25 marks)**

**1. Introduction to chaos theory (10 Lectures)**

- Chaos and econometrics - randomness and chaos - a simple logistic model – Transient chaos - Period Doubling and Chaos - 2 Dimensional chaos - Strange attractors - Application to Economics - Habit persistent Models - Chaos in Ricardian growth Model - Chaos in a model of rational expectation with unemployment

**2. Panel data Analysis (8 Lectures)**

- Pooling of data - finding out panel effect, fixed effect model- testing and estimation-LSDV models- DID models, Random effect models-Hausmann test- Hybrid models-Fixed vs panel debate

**3. Applied Econometrics: Demand analysis (6 Lectures)**

- Double Logarithmic Demand Functions - The Double Log Form- Rotterdam Model - Absolute Price and Relative Price Rotterdam Formulations - Almost Ideal Demand System .- Full and Linear Approximate AIDS Models - Demand for Differentiated Products -Discrete Choice - Logit Models

**4. Applied Econometrics: Production Function Estimation (6 Lectures)**

- Econometrics of Production function - Modelling Firms' Behaviour - Problems of Identification and Solution
- Estimating Translog Production function - OLS and SURE
- Estimating CD Function - Estimation using MP Relations - Reduced Form Method - Factor Share Method - Instrumental Variable Technique
- Estimate of CES Production Function - By Kementa's Approximation - By Kementa's ILS Method
- VES Production Function: Sato and Hoffman, Lu and Fletcher, David Soskice.

## Group-B
## (25 marks)

**1. Limited Dependent Variable Models (5 Lectures)**

- Why Limited Dependent Models – Difference from CLRM – Types of Limited Dependent Variable Model

**2. Count Data Models (5 Lectures)**

- What are count data – estimation with Count Data – Poisson Regression – Over dispersion problem – Zero inflated models - Applications

**3. Multinomial Logit Models (5 Lectures)**

- Methods of estimation; Multinomial Logit (MNL); the Independence of Irrelevant Alternatives (IIA) assumption; Multinomial Probit models; Measuring Goodness of Fit; Testing assumptions; Application of Multinomial Logit Models

**4. Ordered Categorical Models (5 Lectures)**

- Why ordered models – Real life examples – Ordered Probit / Logit; Methods of estimation – Concept of Cut off and Cumulative Odds - Interpretation of Coefficients – Measuring Goodness of Fit; Applications

**5. Nested Categorical Models (5 Lectures)**

- Why nested models – Non-fulfilment of IIA assumption – Real life examples – Red Bus/Blue Bus theory – Nested Probit / Logit; Sequential Probit / Logit; Methods of estimation – Interpretation of Coefficients – Measuring Goodness of Fit; Applications

**6. Selection Bias and Two-stage Models (5 Lectures)**

- Sample Selection Bias in regression models – Real life examples – Consequences – Methods of estimation – Inverse Mills Ratio and Heckman Filter – 2 stage estimation – Hurdle Models

## References


Goodwin, Barry.K. , Ford Ramsey, J Chovsta- Applied Econometrics with SAS-Modelling Demand, Supply and Risk

Bridge, J.L. – Applied Econometrics

Gujarati, D - Basic Econometrics, Tata McGraw Hill;

Gujarati, D– Econometrics with Example, Tata McGraw Hill;

Heckman, J. (1990). Varieties of Selection Bias, American Economic Review, May,

Heckman, J. (1976). The common structure of statistical models of truncation, sample selection and limited dependent variables and a simple estimation for such models. Annals of Economic and Social Measurement, 5 (4), 475-492.

Heckman, J. (1979). Sample selection bias as a specification error.Econometrica, 47 (1), 153-161.

Heckman,J. (1978). Dummy endogenous variables in a simultaneous equation system.Econometrica, 46 (6), 931-959.

Intrilligator - Econometrics with Economic Applications Rao& Miller – Applied Econometrics

Lee, B., & Marsh, L. C. (2000). Sample selection bias correction for missing response observations. Oxford Bulletin of Economics and Statistics, 62 (2), 305-323.

Maddala, G.S. (1983). Limited-Dependent and Qualitative Variables in Econometrics CUP McFadden, D. L. (1973).Conditional Logit Analysis of Qualitative Choice Behavior.Frontiers in Econometrics, Academic Press.

Review of Economics and Statistics (1968) for VES Production Function

Stock, James H. and Mark W. Watson (2007), Introduction to Econometrics, 2/E, Pearson

Wallis, K. – Topics in Applied Econometrics

**Major Elective Paper**
**PG2ECON3015B**
**AGRICULTURAL ECONOMICS-II**
**Credit: 4**
**Full Marks: 50**
**Lecture Hours: 60**

**Course Objective:**

Make students aware about the historical experiences of different countries in terms of farming households and societies and how that shapes people's lives

**Course Outcome**

Gaining a theoretical as well as an empirical understanding of the working of farm economics using international experiences

## Group A (Marks 25)

1. **Agrarian Experience in International Perspective of Select Countries (10 lectures)**
   - Agrarian Experience of select Countries, Trade Liberalisation and Agriculture, GATT, WTO and recent international issues
2. **Features of Peasant Societies (10 lectures)**
   - Features of Peasant Societies; Farm household –economic definition of peasants-family, household and women-elements of peasant political economy
3. **Theories of peasants (10 lectures)**
   - The profit maximizing peasant-drudgery averse peasant-the invisible peasant-time allocation and the economic role of peasant women

## Group B (Marks 25)

1. **The farm household Peasant (5 Lectures)**
   - Chayanov farm household model - impact of the change in production function on equilibrium output and labour use - demographic cycle - distinction between peasant mode of agriculture and the capitalise mode of agriculture - Extension of chayanov's model incorporating labour market.
2. **New Home Economics: (8 lectures)**
   - Home Economics - Essential Features of New Home Economics -The Barnum-Squire Farm Household Model - The Low Farm Household Model.
3. **Rural Credit Markets: (8 lectures)**
   - Nature of Rural Credit Market-Forms of Rural Credit -The Lender's Risk Hypothesis-Monopolistic Market - Market Fragmentation - Bhaduri's Model of Semi-feudalism.
4. **Interlinkage in Credit Markets: (9 lectures)**
   - Potential risk and the emergence of Interlinkage - Partial equilibrium in an interlinked market - Interlinkage and Intertemporal Earnings Approach - Moral Hazard and Interlinkage.

**References:**


Eswaran and Kotwal- A theory of two tiered labour market (AER 1971)
Eswaran and Kotwal-Access to credit and agraian class formation (AER 1971)
Boyce – Agrarian Impasse in Bengal (O.U.P.).
Indian Journal of Agricultural Economics, 1980
K. Basu – Less Developed Economy.

**Core Paper**
**PG2ECON4011**
**ECONOMICS OF GROWTH**
**Credit: 4**
**Full Marks: 50**
**Lecture Hours: 60**

**Course Objective:**
Make students aware about the progress in theoretical understanding of economic growth processes over the years and how growth theory can shape economic policies
**Course Outcome:**
Ability to understand & analyse the models, sources and patterns associated with growth performances of economies

## Group A
## (25 Marks)

**1. Introduction (5 lectures)**
- Stylized Facts of Economic Growth and Development: A Quick Look at the Facts and Fictions.
- The Objectives/Agenda
- Happiness and Growth

**2. Classical Growth Theory (5 lectures)**
- Smith and Ricardo
- Malthus and John Stuart Mill

**3. HarrodDomar Model and its extension (4 lectures)**
- Basic Idea and Extensions

**4. Cambridge Models (4 Lectures)**
- Kaldor, Pasinetti and Modern Demand based Growth theories

**5. The Neoclassical Growth Model (8 lectures)**
- Preferences, Technology and Demographics - Characterization of Equilibrium - Definition of Equilibrium - The Consumer Problem - Equilibrium Prices - Optimal Growth - Steady-State Equilibrium - Transitional Dynamics
- Technological Change and the Canonical Neoclassical Model - The Role of Policy
- Variants of the Neoclassical Model

**6. Growth with Overlapping Generations (8 lectures)**
- Problems of Infinity - Overlapping Generations and Over Accumulation - Demographics, Preferences and Technology - Consumption Decisions - Equilibrium
- More Specific Utility Functions - Pareto Optimality - Role of Social Security in Capital Accumulation - Fully Funded Social Security - Unfunded Social Security

## Group B
## (25 Marks)

**1. Endogenous Growth (12 lectures)**
- First-Generation Models of Endogenous Growth - AK Model Revisited - Demographics, Preferences and Technology – Equilibrium - Transitional Dynamics - The Role of Policy - The Extended AK Model - Growth with Externalities

- Preferences and Technology – Equilibrium - Pareto Optimal Allocations - Multiple Equilibria and the Process of Development - Multiple Equilibria From Aggregate Demand - Preferences and Technology – Equilibrium
- Human Capital Accumulation with Imperfect Capital Markets - A Simple Case With No Borrowing - The Galor and Zeira Model - Learning-by-Doing, Structural Change and Non-Balanced Growth - Demographics, Preferences and Technology – Equilibrium
- Schumpeter's Creative Destruction

**2. Endogenous Technological Change (12 lectures)**

- Expanding Variety Models - The Lab-Equipment Model of Growth with Product Varieties - Demographics, Preferences and Technology - Digression on Continuous Time Value Functions - Characterization of Equilibrium - Definition of Equilibrium - Steady State - Transitional Dynamics - Pareto Optimal Allocations
- Policy in the Endogenous Technology Model - Growth with Knowledge Spillovers - The Role of Competition Policy - Growth without Scale Effects - Models of Quality Competition - Baseline Model - Pareto Optimality
- Directed Technical Change - Basics and Definitions – Definitions - Basic Model – Implications - Equilibrium Technology Bias: Some More General Results - Endogenous Labor-Augmenting Technological Change - Demographics, Preferences and Technology - Consumer and Firm Decisions - Asymptotic and Balanced Growth Path

**3. Solow-Romer Model (5 lectures)**

- Background and description – General - Research sector - Manufacture of capital goods - Production of final output - Market structures, prices and wages – Consumption - The dynamic system - Condensation of the model equations - The steady-state - Phase-space of the Solow-Romer system - Dynamic response to economic shocks - Increase in the savings rate(s) - Increase in the productivity of researchers - Increase in the savings rate(s) - Rise in the profit share of income

**4. Trade and Growth (4 lectures)**

- Interdependence and Growth in the Open Economy - Human Capital and Technology (Nelson-Phelps) - Trade and Technology Diffusion - The Basic Krugman Model - Understanding the Effects of Trade - Trade, Specialization and the World Income Distribution – The Model – Equilibrium – Implications - Growth with Factor Price Equalization

**5. Some Special and Advanced Issues (4 lectures)**

- Level and Growth Effects of Human Capital - Growth and the Initial per Capita Human Capital Level - Defining convergence; The Convergence Hypotheses and Tests of the Convergence – Hypothesis - Human Capital in an Aggregate Product1on Function - Human Capital, Resource Constraints and Intergenerational Fairness - Growth, Fairness and Social Discounting

Suggested Readings

Topics 1 to 6

Philippe Aghion and Peter Howitt (1998), *Endogenous Growth Theory* Cambridge: MIT Press.

Barbier, E. B. (1999).Endogenous Growth and Natural Resource Scarcity. Environmental and Resource Economics (14), pp. 51.74. (1998), *Endogenous Growth Theory* Cambridge: MIT Press.

Blankenau, W. and N. Simpson (2004).Public education expenditures and growth. Journal of Development Economics 73, pp. 583-605.

Bravo-Ortega, C. and J. De Gregorio (2005).The Relative Richness of the Poor?Natural Resources, Human Capital, and Economic Growth.World Bank Policy Research Working Paper No. 3484.

Bretschger, L. and S. Smulders (2006). Sustainable Resource Use and Economic Dynamics, Environmental and Resource Economics 36 (1), pp. 1-13.

Barro, Robert J. and Xavier Sala-i- Martin (1995), *"Economic Growth"*, McGraw-Hill, Inc., Singapore
Lucas, J. 1988. Mechanics of Development.Journal of Monetary Economics. Vol. 22 (1), pp. 3-42.
Aghion, P. and Howitt, P. 1992. A Model of Growth Through Creative Destruction. Econometrica, Vol. 60, No. 2, pp. 323-351.

Suggested Readings for Topics 7-9

Philippe Aghion and Peter Howitt (1998), *Endogenous Growth Theory* Cambridge: MIT Press.
Dynamic Analysis of a 'Solow-Romer' Model of Endogenous Economic Growth Gordon Schmidt, *Centre of Policy Studies, Monash University*

Suggested Readings for Topic 10

Sebastian Edwards (1997), "Openness, Productivity, and Growth: What Do We Really Know?" NBER
Jeffrey Frankel and David Romer (1996), "Trade and Growth: An Empirical Investigation," NBER.
Philippe Aghion and Peter Howitt (1998), *Endogenous Growth Theory* (Cambridge: MIT Press)

Suggested Readings for Topic 11

Rebelo, S. (1991).Long-Run Policy Analysis and Long-Run Growth.*Journal of Political Economy,* 99 (3), 500-521.
Romer, P. (1986).Increasing Returns and Long-Rung Growth.*Journal of Political Economy,* 94 (5), 1002-10037, 16.
Romer, P. (1990).Endogenous Technological Change.*Journal of Political Economy* 98, (5), part 2, S71-106.
Segerstrom.P. (1998).Endogenous Growth without Scale Effects.*AmericanEconomicReview,* 88 (5), 1290-1310.
Barro, Robert, "Economic Growth in a Cross Section of Countries," Quarterly Journal of Economics, May 1991.
Baumol, William, and Edward Wolff, "productivity growth, Convergence, and Welfare: A Reply," American Economic Review, December 1988.
Benhabib, Jess, and BoyanJovanovic, "Growth Accounting and Externalities," American Economic Review, March 1991.
Barro, R. J. and X. Sala-i-Martin. 1996. Convergence. Journal of Political Economy, 100, 223-251.
Romer, P. M. 1986.Increasing returns and long run growth. Journal of Political Economy 94, 1002- 1037.

**Core Paper**

**PG2ECON4012**

**RECENT ISSUES IN INDIAN ECONOMY**

**Credit: 4**

**Marks: 50**

**Lecture hours - 60**

**Course Objective:**

To provide a snapshot of India's economic policies in the post-2000 period, its interplay with global economic and geopolitical events, and what needs to be done to build a sustainable and prosperous India in the 21st century.

**Course Outcome**

Ability to understand & analyse the structure, performances, challenges, and opportunities facing Indian economy in recent times. The course will be based on Readings of selected articles for a comprehensive and contextual understanding.

**1. India's historical processes – a snapshot (4 Lectures)**

- Strategy of India's Development Plans: An Overview
- Rationale of Economic Reforms in India
- Structural Adjustment

**2. Growth and Sectoral Performance of the Economy: (8 Lectures)**

- Structural change and structural breaks
- Manufacturing growth and issues related to productivity
- Transformation in Trade & Services, Service sector growth.
- Reforms, Growth, Slow Down and Resilience

**3. Agricultural & Allied Sector (8 Lectures)**

- Reforms and Transformation of Agricultural Sector
- Agriculture, Food & Nutrition Security, Measurement Issues
- PDS &Supply Chain Management
- Issues of MSP, Organised Markets and Farm Policies
- Crisis in Agriculture - Challenges& Future Prospects

**4. Industry & Innovation (8 Lectures)**

- India's Missing Middle in Manufacturing sector
- Regional Concentration of Manufacturing
- The New Industries – Electronics, Pharmaceuticals, Agri-business
- MSMEs in India – Strength, Weakness, Opportunities
- AI, Innovation and Industries

**5. Trade and Payment Reforms in India (8 Lectures)**

- Merchandise trade performance and determinants, Dimensions of service trade,
- Capital flows and their impact
- Balance of Payments and issues related to accumulation of Foreign Exchange Reserves; Remittances; Capital Account Convertibility.

**6. Infrastructure (8 Lectures)**

- Transport & Communication Infrastructure – Status, Bottlenecks, Policies
- Ports (Land-ports, Sea-ports & Air-ports) in India – Capacity and Technology
- Energy Infrastructure and Energy Security
- Irrigation, Sanitation and Water Supply

**7. Human Resource (8 Lectures)**

- Higher Education in India – Skill Gap, Privatisation, Cost of Education
- Towards Universal Health – Obstacles and Needs
- Labour Rigidity & Labour reforms
- Employment Quality in India
- Fourth Industrial Revolution & Labour Market
- Gig economy and its Implications

**8. Inclusive Development & Welfare (8 Lectures)**

- Sustainable and Inclusive Growth
- Economic Deprivations – Poverty, Inequality, Malnutrition
- Land, Forests and Rights
- Corruption & Economy
- Happiness and Well-being
- Social Policies and Cash Transfer

## References

### Core Readings:


A. *Two Decades of Economic Reforms: Towards Faster, Sustainable and More Inclusive Growth*; UMA KAPILA (ed), Academic Foundation, New Delhi, 2012
B. *Essays on Indian Economy*; R. RADHAKRISHNA, Academic Foundation, New Delhi, 2019
C. *India's Economy and Society: Lateral Explorations*, SUNIL MANI and CG IYER, Springer, 2021
D. *Breaking the Mould: Reimagining India's Economic Future*; RAGHURAM RAJAN and ROHIT LAMBA; Penguin, 2025
E. *Infrastructure Planning and Management in India: Opportunities and Challenges*, PRAVIN JADHAV and RN CHOUDHURY (eds), Springer, 2022


### ***Specific Readings***

Module 1:


Roy, Tirthankar (2013) *Economic Change in India: 1950–2010* in *The Economic History of India, 1857-1947*, Oxford Academic

Panagariya, Arvind (2020) *NewIndia: Reclaiming the Lost Glory*, OUP; Ch 2, 12, 13

Nayyar, D. (2022) *The Bumpy Road to Developed India by 2047? Look beyond the arithmetic of growth*. News Article, The Live Mint.


Module 2:


Rajan, Raghuram - *How do Countries grow Rich?* - in core reference D

Subramanian, Arvind and Josh Felman - *India's Stalled Rise: How the State Has Stifled Growth,* Foreign Affairs, January/February 2022 Published on December 14, 2021

Subbarao, Duvvuri - *Monetary Policy Dilemmas: Some RBI Perspectives* – in core reference A

Rajan, Raghuram - *The Transformation in Trade and Service led Development* - in core reference D

Gokarn, Subir - Growth, Resilience and Reform: Reflections on Post-Crisis Policy Challenges – in core reference A

Acharya, Sankar and Rakesh Mohan (eds.) (2010), India's Economy: Performance andChallenges, OUP, New Delhi

Raj Kapila ,Uma Kapila (eds) India's Economy in the 21st Century, Academic Foundation

Module 3:

Vyas, VS - *Challenge of Transforming Indian Agriculture* – in core reference A

Gulati, Ashok - *Reforming Agriculture* – in core reference A

Radhakrishna, R – core reference B -Ch 7-12

Himanshu - *The Crisis in Indian Agriculture: Genesis, Response and Future Prospects* - in core reference C

Kumar, Parmod and Yasmeen - *Supply Chain Management of Food Grains in India* - in core reference C

Module 4:

Rajan, Raghuram – *Why has India not built a global Manufacturing Presence?*- in core reference D

Ramaswamy, KV - *Regional Concentration of Industries in India: What Does the Recent Data Say and How to Understand the Implications?* A Perspective – in core reference C

Dhar, Biswajit & Joseph, Reji. (2019). *The Challenges, Opportunities and Performance of the Indian Pharmaceutical Industry Post-TRIPS* in K.-C. Liu, U. S. Racherla (eds.), Innovation, Economic Development, and Intellectual Property in India and China, Springer

Francis, Smitha and Murali Kallummal - *Indian Electronics Industry's FDI-Led GVC Engagement: Theoretical and Policy Insights from a Firm-Level Analysis* – in core reference C

Chakrabarty, KC - *Empowering MSMEs for Financial Inclusion and Growth: Issues and Strategies* – in core reference A

Mani, Sunil - *India's Performance in Science, Technology and Innovation: The Post 2000 Scenario* – in core reference C

Module 5:

Bimal Jalan, India's Economic Crisis - The Way ahead,Oxford University Press,1991

Rakshit, M (2008a), Macroeconomics of Post-Reforms India, OUP, New Delhi.

India's Development Reports, Various years

Reddy, Y V (2004), Lectures on Economic and Financial Sector Reforms in India, OUP, New Delhi.

B. Chatterjee (edited). Economic Liberalisation in India, Allied Publishers, 1998.

B. Chatterjee and A. K. Karmakar (eds.). Capital Account Convertibility in India, New Delhi: Deep & Deep Publications, 2011.

Module 6:

Pravin Jadhav and Rahul Nath Choudhury (eds) (2022) *Infrastructure Planning and Management in India: Opportunities and Challenges*, Springer

Morris, Sebastian - *Financing Green and Brownfield Private Infrastructure in India* – in core reference C

De, P. (2008), 'Infrastructure Development in India', in Kumar, N. (ed.), International Infrastructure Development in East Asia – Towards Balanced Regional Development and Integration, ERIA Research Project Report 2007-2, Chiba: IDE-JETRO, pp.105-130.

Nataraj, G. 2007. Infrastructure Challenges in South Asia: The Role of Public-Private Partnerships. ADBI Discussion paper No. 80. Tokyo.

Ohri, M (2009), Airport Privatization in India – A Study of Different Modes of Infrastructure Provision.

Raghuram G, Samatha Bastian and Satyam Sivam Sundaram, (2009), ―Mega Projects in India: Environmental and Land Acquisition issues in Road Sector‖, WP. No, 2009-03-07, March, Indian Institute of Management, Ahmedabad.

Sahoo, P and Ranjan K. Dash, (2009), ―Infrastructure Development and Economic Growth in India, *Journal of the Asia Pacific Economy*, Vol. 14, Issue. 4, Routledge

Majumder, Rajarshi, Subhadip Ghosh & Bidisha Chatterjee (2022). Energy Infrastructure in India: Challenges and Opportunities. Productivity. 63. 21-34. 10.32381/PROD.2022.63.01.3.

Module 7:

Rajan, Raghuram – Ch 7-8 in core reference D

Ravindran, T., K. Sundari and Neena Elezebeth Philip - *Towards Universal Health Coverage? Taking Stock of Two Decades of Health Reforms in India* – in core reference C

Choudhury, Pradeep Kumar and Amit Kumar - *Changing Landscape of Professional Higher Education in India: What Do We Know and What Do Recent Data Tell Us?* – in core reference C

Chakraborty, Achin (2015) Reforming Labour Markets in States: Revisiting the Futility Thesis, *Economic and Political Weekly*, Vol 50, Issue 20, May 16, 2015
Roychowdhury, Anamitra & Sarkar, Kingshuk. (2021). Labour Reforms in a Neo-liberal Setting: Lessons from India. *Global Labour Journal*. 12. 58-64. DOI: 10.15173/glj.v12i1.4457.
De, S., Mukherjee, D., & Ray, J. (2022). Skill in Indian Labour Market: Current Trends and Estimating Future Gaps. *Arthaniti*, 24(1)
World Economic Forum – The Future of Jobs Report, *latest year*
Bhattacharyya, Sujatra & Mitra, Arup.(2020). Fourth industrial revolution and India's "employment problem". International Journal of Social Economics. DOI: 10.1108/IJSE-09-2019-0540.
Awasthi, D., Yagnik, J. Digitisation, Automation and 'Jobs at Risk': A Comparative Analysis of BRIS Countries, and a Detailed Analysis of the Indian Scenario. Ind. J. Labour Econ.68, 417–450 (2025). https://doi.org/10.1007/s41027-024-00551-z
NITI (2022) India's Booming Gig and Platform Economy: Perspectives and Recommendations on the Future of Work, Policy Brief, 2022, NitiAayog, GoI

Module 8:

Debroy, Bibek - *India in 2025: Growth and Inclusion* – in core reference A
Hanumantha Rao, CH -*Inclusive Growth: Role of Sociopolitical Factors: Comparative Experience of India and China* – in core reference A
Radhakrishna, R – Ch 4-6 in core reference B
Rajan, Raghuram – *Addressing Inequality* – in core reference D
Swaminathan, Padmini - *Gender and Development: Back to Basics Continued Relevance of Marcal's Who Cooked Adam Smith's Dinner* – in core reference C
Singh, Manmohan - *Towards Rapid, Sustainable and Inclusive Growth: Challenge of the Future* - in core reference A
Rajan, Raghuram – *Governance* – in core reference D
Singh, Ram - *Land for Development: Market Versus Non-market Mechanisms* – in core reference C
Basu, Kaushik - *Why for a Class of Bribes the Act of Giving a Bribe should be Treated as Legal* – in core reference A
Rajan, Raghuram – *India's Engagement with the World* – in core reference D

**Major Elective Paper**
**PG2ECON4013**

**PG2ECON4013A**
**ADVANCED FINANCIAL ECONOMICS**
**Credit: 4**
**Full Marks: 50**
**Lecture Hours: 60**

**Course Objective:**
To create ability to understand the working of financial market and financial decisions

**Course Outcome**
Understanding how financial resources are transacted in the market and its impact on the economy

1. **International Financial Issues (15 Lectures)**
   - An Overview of International Liquidity; Models of Financial Crisis & Debt Crisis.

2. **Fixed Income Securities (20 Lectures)**
   - Meaning and Types of fixed income securities, Treasury bills, government bonds, corporate bonds, Features of Bond market- Types of bond returns, duration of bond, Immunization theorem, Convexity of bond.

3. **Mutual Funds and Performance Evaluation (10 Lectures)**
   - Evolution of mutual funds, Closed-End and Open-End Funds, Mutual Fund Objectives, Calculating Fund Returns, Risk-Adjusted Performance –Comparison of Performance Measures (Sharpe, Treynor, Jenson, Fama).

4. **Financial Derivatives –An Overview (5 Lectures)**
   - Meaning; Types; Uses; Historical Background of their Development; Features; Market Players; Trading Mechanism.

5. **Futures (10 Lectures)**
   - Terminology; Futures Pay-off; Margin Accounting System; Pricing –without Dividend and with Dividend ; Strategies –Static and Dynamic Hedging ; Speculation in Futures Market.
   - Indian Commodity Futures market – Pricing & Trading.

6. **Options (15 Lectures)**
   - Terminology; Option Pay-off; Pricing and Put-Call Parity; Option Strategies –Strangle, Straddle, Spreads, Butterfly. Option Pricing: replicating portfolio, Binomial tree, Black-Scholes formula, Greeks and Volatility.

7. **Swaps (5 Lectures)**
   - Interest Rate Swaps –Meaning & Valuation; Currency Swaps –Meaning & Valuation.

8. **Introduction to Behavioural Finance (5 Lectures)**
   - Prospect Theory - evaluating Risk and Time, Self-interest vs fairness, Nudge theory, Case studies and its applications

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Dan Ariely, Predictably Irrational: The Hidden Forces That Shape Our Decisions.

Elton and Gruber: Modern Portfolio Theory and Investment Analysis, John Wiley & Sons.
Fischer and Jordan: Security Analysis and Portfolio Management, Prentice-Hall of India Pvt.Ltd.
Fullerand Farrel (Jr.): Modern Investments and Security Analysis, McGraw Hill Book Company.
Giancarlo Gandolfo: International Finance and Open-Economy Macroeconomics. Springer, 2002.
R.M. Kishore: Financial Management, Taxmann Allied Services.
Richard H Thaler, Misbehaving: The Making of Behavioural Economics.
Richard Thaler and Cass Sunstein, Nudge: Improving Decisions about Health, Wealth and Happiness.
Richard Thaler, The Winner's Curse.
Ross, Westerfield and Jordan: Fundamentals of Corporate Finance, Tata McGraw Hill.

**Major Elective Paper**

**PG2ECON4013B**

**REGIONAL ECONOMICS**

**Credit: 4**

**Marks: 50**

**Lecture hours - 60**

**Course Objective:**

To make students understand the role of space and region in economic decisions and how that supports or impedes development processes

**Course Outcome**

Ability to understand regional economic processes that leads to global and regional divergence and convergence; understand theories of location of economic activities; apply econometric modelling in spatial context

**1. Basic Concepts of Regional Economics (12 Lectures)**

- What is a Region? How are regions formed? Link between Region & Development
- What Causes Regional Growth? - The Role of Demand - The Role of Supply - Interregional Trade and Factor Movements - Interregional Convergence - External and Internal Factors in Regional Development
- The Role of Cities in Regional Development

**2. Significance of Regional Economics (8 Lectures)**

- Theories of Divergence and Convergence Core-Periphery models: Myrdal's Cumulative Casuation Hypothesis; New Economic Geography models: Paul Krugman's model of industrial location and development

**3. Regional Distribution of Economic Activities – Location Theories (10 Lectures)**

- Losch, Weber, Isard
- Central Place Theory
- Gravity Models

**4. Regional Input-Output Analysis (10 Lectures)**

- Introduction - Input-output analysis in a single region
- Input-output analysis in two or more regions: The inter-regional input-output (IRIO) model
- Input-output analysis in multiple regions: The multi-regional input-output (MRIO) system.

**5. Measuring Regional Patterns (10 Lectures)**

- Agglomeration Measures: Location quotient, coefficient of localization, localization curve
- Regional processes – Shift Share Analysis
- Spatial Association – Moran's I, Kelejian Robinson test;
- Spatial Clustering – Methods; Partitioning Methods; Hierarchical Methods;
- Spatially Lagged Models: Spatial Lag, VAR & ECM in Spatial models
- Empirical Examples and Applications

**6. Regional Development in India (10 Lectures)**

- Regional Disparities in Colonial India
- Regional Disparities in post-independent India – Policies during 1950-80
- Regional disparity in India after Structural Reforms

# References


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B. B. Bhattacharya and S. Sakthivel (2004): Regional Growth and Disparity in India: Comparison of Pre- and Post-Reform Decades, Economic and Political Weekly, 39(10), pp. 1071-1077.

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MacKay, R. (2003): Twenty Five Years of Regional Development, Regional Studies, 37(3), pp. 303-17.

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Walter, I (1968), Methods of Regional Analysis, MIT Press, Cam

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**Major Elective Paper**
**PG2ECON4013C**
**ECONOMICS OF SOCIAL CAPITAL**
**Credit: 4**
**Full Marks: 50**
**Lecture Hours: 60**

**Course Objective:**
To create knowledge about the social processes of networking, community engagement and social capital and how that contributes to economic wellbeing

**Course Outcome**
Understand the emergence and importance of social capital and its implications in understanding society & economy.

**1. Introduction (7 Lectures)**

- Emergence of Social Capital: Bourdieu's theory of capital (economic, cultural and social capital) and Coleman's Rational Choice Approach to Social Capital (Kinds of social capital).

**2. Civic Perspective on Social Capital (12 lectures)**

- Civic Perspective on Social Capital: Robert D. Putnam's concept of social capital – Elements of social capital –Characteristics of social capital –Bridging vs. bonding social capital –Critique of Putnam's concept.

**3. The network approach to social capital (12 lectures)**

- The network approach to social capital: The concept of Ronald S. Burt –network structure and functions –network types –homogeneity and heterogeneity in networks –strong and weak ties – Social Network and learning & technology adoption –

**4. The resource perspective (12 lectures)**

- The resource perspective: Nan Lin's concept of social capital -Institutions, network and capital building in societal transformation.

**5. Social Capital & Development Theory (12 lectures)**

- Social Capital approach to development: role of social capital in economic and cultural development -Critical evaluation of social capital.

**6. Social Capital & Development Empirics (15 lectures)**

- Measurement of Social Capital: The World Bank Method - Importance of Social Capital in Micro-finance - Relationship between Social Capital and Subjective Well-Being – Social Entrepreneurship & Economic Development

**Suggested References:**


Anirudh Krishna. 2003. Active Social Capital, New Delhi: Oxford University Press.

Becker, G. S. 2006. "The age of human capital." In: Lauder, H., P. Brown, J. A. Dillabough, A. H. Halsey (eds), Education, Globalization and Social Change. Oxford University Press, pp. 292-294.

Bourdieu, P. 2006. "The forms of capital." In: Lauder, H., P. Brown, J. A. Dillabough, A. H. Halsey (eds), Education, Globalisation and Social Change. Oxford University Press, pp. 105-118.

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Folland, S. and Nauenberg, E. 2018.Elgar Companion to Social Capital and Health. Cheltenham, UK: Edward Elgar Publishing.
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Hernando De Soto. 2000. The Mystery of Capital: Why Capitalism Triumphs in the West and Fails Everywhere Else, London: Bantam Press.
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John Harris. 2002. De-politicizing development: The World Bank and Social Capital, Wimbeldon Publishing Company, London.
Lin,N. 2004. Social Capital : A theory of Social Structureand Action , Cambridge University Press.
Robert,P 1995. “Bowling Alone: America’s Declining Social Capital” Journal of Democracy pp 65-78
Roberts, K. 2009. "Opportunity structures then and now”, Journal of Education and Work, pp. 355-365.
William R. Easterly. 2001. The Elusive Quest for Growth: Economists' Adventures and Misadventures in the Tropics, Cambridge, MA: MIT Press.

**Major Elective Paper**
**PG2ECON4013D**
**RURAL DEVELOPMENT**
**Credit: 4**
**Full Marks: 50**
**Lecture Hours: 60**

**Course Objective:**
Create awareness about the theories of rural development and how those have been applied across sets of countries

**Course Outcome**
Ability to understand & analyse theories, models, policies related to rural development for developing countries and assess Indian situation in international context

**1. Rural Development - Background & Concept (12 Lectures)**

- Concepts and Connotations of Rural Development, Definition and Scope of Rural Development, Causes of Rural Backwardness; Need for Rural Development, Historical Evolution of the Concept of Rural Development in Indian Context.
- Contours & Success of selected Rural Development Programs in India - IRDP, SGSY, MGNREGA, NRHM, ICDS, PURA, CAPART, DIRECT BENEFIT TRANSFER, etc

**2. Rural Development: Theories & Approaches (14 Lectures)**

- Changing focus of Rural Development Policies over the decades. Rural development in the light of different development theories.
- Approaches to Rural Development in India: Gandhian Model of Rural Development, Broad Front Approaches to rural development: Sectoral, Participatory, Area based, Target Group based and Integrated.

**3. Rural Socio-political Institutions & Processes (12 Lectures)**

- Decentralized Planning, Panchayat Raj Institutions: Evolution, Structure & Functions, Impact of Decentralized Governance on Rural Development. participatory development; stakeholder participation
- Role of Co-operative Institutions: Concept and Principles, Types and Working of Rural Credit Cooperatives, Marketing Cooperatives
- NGO's and paradigm shifts – their implications on Education, Women Empowerment, Health, Disaster management, Girl Child and Weaker Sections

**4. Community Based Interventions for Rural Development (12 Lectures)**

- Micro Finance & Micro Enterprises - Empowerment of Poor and Marginalized; Self Help Group promotion: Concepts, Elements, Stages, Savings Operations of SHGs, Credit Operations of SHGs, Problems faced by Intervening Agencies. SHG – Bank Linkage and scheme
- SGSY as micro enterprise programme Micro finance programmes in India – an assessment pilot project of NABARD – Salient features

**5. Rural Development Strategy (10 Lectures)**

- Development of agro-based industries and Rural non-farm sector
- Diversification of rural economic activities: Livestock economies - livestock resources and their productivity; white revolution; fishery and poultry development; horticulture and floriculture.

**6. Rural Natural Resources and Sustainable Development (10 Lectures)**

- Water resources: Need for judicious use of Water, Ground Water Utilization, Integrated Watershed Management Programme, Ralegaon Shiddhi Model, Forest Committees, Need for Environmental awareness in rural area
- Impact of Climate Change on Crop Productivity; Climate Smart Agriculture, Impact on Rural Livelihood.

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Bhattacharya S.N. - Rural Industrialization in India

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Hla Myint: The Economics of Developing Countries

Jain S.C. - Rural Development

James Copestske - NGO Sponsering of Group Lending in Rural India: Theory and a Case Study

Khanna BS - Rural Development in South Asia: Policies, Programmes and Orgnizations

Kripalani J.B. - Gandhian Thought

Mayfield, James B. () A Chronology of Rural Development Theory and Practice (1950s-2000s)

Misra & Sharma: Problems and Prospects of Rural Development

N.I.R.D. Rural Development in India Some Facets

Nanavati&Anjalia The Indian Rural Problems

Rao R.V. Rural Industrialization in India

Robert Chambers: Rural Development

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Singh Katar: Rural Development: Principles, Policies and Management.

V. K. Ramachandran, VikasRawal and Madhura Swaminathan *Socio-Economic Surveys of Three Villages in Andhra Pradesh: A Study of Agrarian Relations* Edited by New Delhi: Tulika Books. 2010. ISBN

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Vasant Desai Organization and Management of Small Scale Industries

Wignaraja, Ponna (1985) 'Towards a new Praxis of Rural Development', Annals of Public andCooperative Economics, Vol 56, Issue 1-2, pp121-43

Wilbert E. Moore Social Change

Yasant DesaiA Study of Rural Economy

Yunus M: Rural Agricultural Credit Operations in Bangladesh

**Kurukshetra. A JOURNAL ON RURAL DEVELOPMENT.**

**Major Elective Paper**
**PG2ECON4014**

**PG2ECON4014A**
**ADVANCED ECONOMETRICS**
**Credit: 4**
**Full Marks: 50**
**Lecture Hours: 60**

**Course Objective**

To make students capable of understanding advanced econometric methods and able to apply them

**Course Outcome**

Ability to apply econometric methods to socioeconomic time series and panel data & quantify economic relationships for informed decision making

## Group-A: Time Series Econometrics
## (25 Marks)

**1. Univariate time series analysis and forecasting (10 Lectures)**

- Linear time series analysis – autocorrelation function and partial auto-correlation function – auto-regressive (AR) models, moving average (MA) models, Box-Jenkins (BJ) ARMA and ARIMA models – identification – estimation and forecasting with ARIMA models – economic applications.

**2. Multivariate time series analysis and forecasting (10 Lectures)**

- Vector autoregressive (VAR) models – advantages and problems – estimation and forecasting with VAR – Impulse Response Functions & Variance Decomposition – Johansen Co-integration test on VAR – Granger causality test – Vector-error-correction models (VECM) – Vector Moving Average Models – Vector ARMA Models – Applications

**3. Modelling volatility and auto-correlation in time series (10 Lectures)**

- Motivation and test for non-linearity – historical and implied volatility – auto-regressive conditional heteroscedasticity (ARCH) model – Generalised ARCH model – Extensions to the basic GARCH model – Asymmetric GARCH models – Estimation of the GARCH Models – Stationary ARMA-GARCH Models – Lagrange Multiplier Test – Multivariate GARCH Formulations – Applications

Suggested Readings

**Walter Enders - Applied Time Series Econometrics.**
**Robert Shumway & David Stoffer - Time Series Analysis and its Applications with R Examples**
Amisano, Gianni and Carlo Giannini (1997).Topics in Structural VAR Econometrics, 2nded, Springer. Segerstrom. P. (1998).
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HashemPesaran - Time Series and Panel Data Econometrics
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Lütkepohl, Helmut (1991). Introduction to Multiple Time Series Analysis, Springer-Verlag

## Group-B: Panel Data Econometrics
## (25 Marks)

**1. Introduction to Panel Data (10 Lectures)**

- Structure of Panel Data - Complicacy of panel data analysis – Short vs. long panels – Balanced vs. unbalanced panel – Clustering of residuals – Types of regressors – economic examples.

**2. Panel Data Estimation Techniques (15 Lectures)**

- Pooled OLS – LSDV Methods – Fixed and Random effects models – Time Fixed Effect, Space Fixed Effect, and Two-way Fixed Effect Models – Testing for model selection – Fixed vs Random – Fixed vs Pooled OLS – Estimation – Role of instrument variables to control endogeneity
- Organization of real world dataset for panel analysis, panel identifier, time identifier, regression analysis, interpretation of result, reporting results, using R software

**3. Dynamic Panel Data Models (5 Lectures)**

- SUR model – Dynamic Panel data models – Random coefficient model.

Suggested Readings:

**Baltagi, B.H. (2008), Econometric Analysis of Panel Data, 4th Edition, Wiley**
**Robert Shumway & David Stoffer - Time Series Analysis and its Applications with R Examples, 4th ed**
Dougherty, Christopher (2007), Introduction to Econometrics, 3rd Ed., Oxford University Press.
Das, Panchanan (2019) Econometrics in Theory and Practice: Analysis of Cross Section, Time Series and Panel Data with Stata
Croissant, Y.and G. Millo (eds) Panel Data Econometrics with R. Wiley
Longhi, Simonetta and Alita Nandi (2014) A Practical Guide to Using Panel Data, Sage

**Major Elective Paper**
**PG2ECON4014B**
**ECONOMICS OF CLIMATE CHANGE**
**Credit: 4**
**Full Marks: 50**
**Lecture Hours: 60**

**Course Objective**

Make students able to understand the phenomenon of Climate Change and its interactions with Nature, Man and Society

**Course Outcome**

Clear understanding of economics of climate change, emphasizing on energy sector and policy solutions for environmental resilience

1. **Climate Change** **(8 lectures)**
   - What is Climate Change – Weather & Climate – Markers of Climate Change – Temperature & Precipitation – Extreme Events
   - Triggers of Climate Change – Natural Factors & Anthropogenic Factors – Greenhouse effect - Land Use and Land Cover changes – Agriculture – Industry – Transport
   - IPCC Report, Stern review

2. **Climate Change – Global Issues** **(10 lectures)**
   - Trade, Development and Environment – The Capital Flight Hypothesis,
   - The Pollution Haven Hypothesis – Ecological Dumping
   - International/ Interregional Cooperation – The Issue of Trans-boundary pollution.
   - Technology – climate smart technology -technology transfer debate

3. **Climate Change & Energy** **(14 lectures)**
   - Energy Types by Sources & Use – Energy GDP Linkage – Impact of Energy Price Changes – Energy Intensity & Energy Efficiency – Decoupling Theory
   - Energy use and Carbon Emission – Energy Composition & Energy balance Tables – Reference Energy System (RES) – Energy Demand Estimation Methods – Rebound Effect

4. **Climate Change Policies** **(10 Lectures)**
   - Economics of global climate change policies
   - Climate Vulnerability & Resilience
   - Mitigation & Adaptation

5. **Climate Change & India** **(10 Lectures)**
   - Environmental Policies in India
   - Economics of Energy Demand in India
   - Energy Reform,
   - Energy Infrastructure
   - Emerging energy market -trading platforms, IEX, PBIX, etc.

6. **Institution and Climate Change Policy** **(8 Lectures)**
   - International Co-operation (Local & Global)
   - Climate Funding,
   - Technology Transfer- debate
   - Selected COP Agreements

## References


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Bazaraa, M S and J. J. Jarvis: Linear Programming and Network Flows, John Wiley and Sons, N. Y., 1990.

Bhattacharyya, R.N. (2001)(ed.) Environmental Economics: Indian Perspective, OUP.

Chakraborty (2001): Global Environmental Issues and Initiatives in Bhattacharyya (ed.) op.cit.

Chattopadhyay (2006): Dirtier Trade for India? The Story of Globalization in Arthaniti

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Dinda, S. 2014. Climate Change and Trade Opportunity in Climate Smart Goods in Asia: Application of Gravity Model, International Trade Journal, Vol. 28, no.3, 264-280.

Dinda, S. 2019. Climate Friendly Goods and Technologies in Asia: Opportunities for Trade. Springer.

Forest Reinhardt and Patia McGrath. 2002. "Global Climate Change After Marrakech (A)", Harvard Business School Case 9-702-075.

Gerking& Stanley (1986): An Economic Analysis of Air Pollution and Health: The Case of St. Louis. REStat.

Harrington & Portney(1987): Valuing the Benefits of Health and Safety Regulations, J. of Urban Economics.

IEA: World Energy Outlook: International Energy Organization, Paris, 2002.

Maler, K.G. (2000): International Environmental Problems in Kolstad (ed): Environmental Economics, OUP

Markandya & Murty (2001): Measuring Non-user Benefit from Cleaning Ganges in Cleaning up the Ganges: a Cost-benefit Analysis of the Ganga Action Plan, OUP.

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Miller, R. and P. D. Blair: Input-Output Analysis: Foundations and Extensions, Prentice-Hall, N.J, 1985.

Munasinghe, M. and P. Meier: Energy Policy Analysis and Modelling, CUP, 1993.

Murty, et al (2005): Measuring benefits from reduced air pollution in the cities of Delhi and Kolkata in India using hedonic property prices model in Bhattacharyya &Mitra (ed.) Studies in Macroeconomics and Welfare, Academic Press.

Newman, P. and J. Kenworthy. 1988. "The transport energy trade-off: Fuel efficient traffic versus fuel efficient cities," Transportation Research Part A: General, 22(3): 163-174.

Parikh, et. al (2005): Economic Valuation of Air Quality Degradation in Chembur, Mumbai in Bhattacharyya &Mitra (ed.) Studies in Macroeconomics and Welfare, Academic Press.

Parry (1997): Reducing Carbon Emissions: Interactions with the Tax System, Resources Parry, Ian W H and Kenneth A. Small. 2005. "Does Britain or the United States Have the

Right Gasoline Tax?" American Economic Review, 95(4): 1276-1289.

Pindyck, R.S. and D. L. Rubinfeld: Econometric Models and Economic Forecasts, 4th

Edition, McGraw-Hill, New York, 1998.

Sanyal (2001): International Trade and the Environment in Bhattacharyya (ed.) op. cit.

Scott Barrett (1999): Montreal Versus Kyoto.

Stern, Nicolas (2007) The Economics of Climate Change: The Stern Review, CUP

Taylor, JB (2001): Principles of Macroeconomics, 3rd Ed, Houghton Mifflin, Boston, 2001. The Hindu Survey on Environment – Recent Issue

Tietenberg, Thomas (2006). Environmental and Natural Resource Economics, seventh edition, (Boston, MA: Addison Wesley, 2006). Chapter 18

Weyant, John P. (ed.), Energy and Environmental Policy Modeling, Kluwer Academic Publishers, Boston, 1999.

**Journals:** Energy Economics; Energy Journal, India Development Report – Recent Issues; IPCC Reports;

**Reports**: IPCC Reports, Stern Report

**Major Elective Paper**
**PG2ECON4014C**
**DATA ANALYTICS**
**Credit: 4**
**Full Marks: 50**
**Lecture Hours (including Lab) : 60**

**Course Objective**

This course's main objective is to let students learn how to collect raw social science data, explore it, and present the results in a useful way. This is a lab-based applied paper.

**Course Outcome**

Ability to use real life data for generating analytical reports with the statistical language R and other interfaces. Candidates will be allowed to use computing devices during examination

**1. Introduction (10 lectures)**

- Objectives and scope of data analytics;
- Data wrangling: Capturing and Cleaning data – Data science in a big data world – Benefits and uses of data science and big data – Facts of data – Data science processes
- Introduction to Data, R, and R-Studio;
- Working with datasets – importing, exporting, merging, subsetting
- Reliability and validity of data
- Overview of Statistical Inference;

**2. Basic Data Analysis (5 lectures)**

- Descriptive Statistics; Data Visualisation using bars and plots;
- Measures of central tendency and dispersion
- Simple Two variable and Multiple Linear Regression;
- Dealing with Missing data

**3. Regression with Qualitative & Limited Dependent Variables (10 lectures)**

- Count Data Models
- Qualitative independent variables – Coding and using;
- Qualitative dependent variables – models and methods – representing the results
- Applications - Building Credit Risk Models, Predicting Loan Defaults, Poverty Analysis

**4. Time Series Techniques (10 Lectures)**

- Time series data handling
- Seasonality and trends analysis
- Forecasting techniques – ARIMA, LSTM
- Measuring Volatility
- Applications – Stock price Prediction, GDP forecasting

**5. Special Techniques (10 Lectures)**

- Exploratory Factor Analysis
- Data Reduction – Principal Component Analysis
- Cluster Analysis
- Using Mapping tools

**6. Introduction to Portfolio Analytics (5 lectures)**

- Modern portfolio theory and efficient frontier analysis
- Risk management techniques in portfolio construction
- Portfolio optimization using mathematical models and algorithms.

**7. Big Data & Machine Learning (10 Lectures)**

- Scalable machine learning
- Big data related techniques - Mining stream data; Social networks

References

Using R for Data Analysis in Social Sciences: A Research Project-oriented Approach; Quan Li Oxford University Press, 2018

R for Data Science: Import, Tidy, Transform, Visualize, and Model Data; Hadley Wickham, Garrett Grolemund; "O'Reilly Media, Inc.", 2016;

R Cookbook: Proven Recipes for Data Analysis, Statistics, and Graphics; JD Long, Paul Teetor; 2nd Edition; "O'Reilly Media, Inc.", 2019;

R & Social Science: Getting Started with Applied Use of R in the Social Sciences, Michael Clark, University of Notre Dame, e-book

Using R for Data Analysis and Graphics: Introduction, Code and Commentary, J H Maindonald, e-book

Blogs, Websites, Handouts, Practicals

**Core Paper**
**PG2ECON4015**
**PROJECT PAPER: SOCIOECONOMIC SURVEY, REPORT & PRESENTATION**
**Credit: 4**
**Full Marks: 50**
**Lecture/Practical Hours: 60**

**Course Objective**

This paper is basically a Project paper, which aims to enhance the academic understanding of the students and provide them a ground-level experience of socioeconomic conditions in the hinterland of the university.

**Course Outcome**

Equip students with computational capabilities and ability to take up independent & guided field data collection and analysis.

The paper will consist of training on Computer Applications in the laboratory, a Socio-economic Survey, writing of a Survey Report and Viva-voce. The distribution shall be as follows:

| | | |
|---|---|---|
| **Practical on Computer Applications (Internal Assessment)** | **–** | **10** |
| **Socio-economic Survey & Report** | **–** | **15** |
| **Presentation** | **–** | **15** |
| **Viva-Voce** | **–** | **10** |

The paper will be evaluated internally.

The part on Computer Applications shall consist of the following:

1. **Overview of File Management**
2. **Office Applications – Word, Excel, Power Point, Libre Writer, LibreCalc, Libre Impress.**
3. **Computer Application Packages**
   - (A) Primary and Secondary data handling with FOXPRO, MS-ACCESS, R
   - (B) Econometric Software - SPSS, EVIEWS, STATA, R (Any Two)
   - (C) NSSO Data Handling using Software
4. **Economic Applications**
   - (A) Linear Estimations
   - (B) Maximum Likelihood Estimation
   - (C) Qualitative Variables
   - (D) Time series analysis – AR, MA, ARMA. and ARIMA.
   - (E) Principal Component Analysis
   - (F) Forecasting and Simulations
   - (G) Pictorial Presentations
5. **Report Writing and Presentations**

**Core Paper**
**PG2ECON4041**
**COMMUNITY ENGAGEMENT**
**Credit: 2**
**Full Marks: 50**
**Lecture/Practical Hours: 60**

**Course Objective**

To familiarize students about the socio-economic realties at the local level and make them spend some time for social causes. Create meaningful changes in the society through the students

**Course Outcome**

Solving local problem through community participation and leadership by students

The main objectives are to develop an appreciation of culture, lifestyle and wisdoms among students, to learn about the states of various government programmes, to understand causes for local problems, and explore solutions for the same and to apply class room knowledge to field realities.

Under this paper the students will either work alone or form groups among them and will be monitored, guided, and accompanied by faculty member(s) if required. Students have to participate in the Community Engagement programmes/ activities of the department for the year concerned and follow it up with a written Report & Presentation and Viva-Voce.

Activities planned would include but not limited to:

1. Meeting with local administration to decide on time and place for outreach activities
2. Deciding about the social programs and schemes that needs to be highlighted during the relevant year in the selected region/place (in consultation with local administration)*
3. Deciding about the specific government policy on which impact assessment study is to be made (in consultation with local administration)
4. Create publicity material for governmental schemes
5. Spend at least 15 hours for field work in the selected region/place to spread awareness about selected programme
6. This site visit shall have three components – (a)Baseline Survey regarding initial awareness of selected scheme among the selected households; (b) End of programme Survey regarding post-programme awareness of selected scheme among the selected households; and, (c) Socio-economic survey among the households regarding impact assessment of specific government policies as decided in consultation with local administration
7. Writing a Report about the Outreach Programme which shall be curated and collated by the departmental faculty and submitted to the local administration
8. Presentation on the Experience and Outcome of the Outreach Programme

[* - Some of the programmes/schemes that can be selected (but not limited to) are – Sanitation Campaign/Swachh Bharat campaign, Immunisation & Safe Motherhood Campaign, Kanyashree/Beti Padhao Beti Bachao, Developing Financial Literacy, Entrepreneurship & MSME, Agricultural Extension Activities, Food & Nutrition programme, etc. Different programmes will be selected in different years according to departmental resource position and in tune with socio-economic relevance]

Evaluation pattern would be as follows:

- Internal Assessment (Presentation): 10 marks
- Report writing: 20 marks
- Viva-voce: 20 marks