



**Research Scholar: Tisha Liza Tomy**

**Paper code: CPE- RPE**

**Department of Biotechnology**

**St. Mary's College, Thrissur**

**Ph.D (Course Work) Syllabus**

**Paper I: Research and Publication Ethics**

**UNIT 1: PHILOSOPHY AND ETHICS**

Introduction to philosophy: definition, nature and scope, concept, branches, Ethics: definition, moral philosophy, nature of moral judgements and reactions

**UNIT 2: SCIENTIFIC CONDUCT**

Ethics with respect to science and research, Intellectual honesty and research integrity, Scientific misconducts: Falsification, Fabrication, and Plagiarism (FFP), Redundant publications: duplicate and overlapping publications, salami slicing, Selective reporting and misrepresentation of data

**UNIT 3: PUBLICATION ETHICS**

Publication ethics: definition, introduction and importance, best practices / standards setting initiatives and guidelines: COPE, WAME, etc. Conflicts of interest, Publication misconduct: definition, concept, problems that lead to unethical behaviour and vice versa, types, Violation of publication ethics, authorship and contributor ship, Identification of publication misconduct, complaints and appeals, Predatory publishers and journals

**UNIT 4: OPEN ACCESS PUBLISHING**

Open access publications and initiatives, SHERPA/RoMEO online resource to check publisher copyright & self-archiving policies, Software tool to identify predatory publications developed by SPPU, Journal finder / journal suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal Suggester.

## **UNIT 5: PUBLICATION MISCONDUCT**

Subject specific ethical issues, FFP, authorship, Conflicts of interest, Complaints and appeals: examples and fraud from India and abroad. Databases-Indexing databases, Citation databases: Web of Science, Scopus

### **References:**

1. Nicholas H. Steneck. Introduction to the Responsible Conduct of Research. Office of Research Integrity. 2007. Available at:  
<https://ori.hhs.gov/sites/default/files/rcrintro.pdf>
2. The Student's Guide to Research Ethics By Paul Oliver Open University Press, 2003
3. Responsible Conduct of Research By Adil E. Shamoo; David B. Resnik Oxford University Press, 2003
4. Ethics in Science Education, Research and Governance Edited by Kambadur Muralidhar, Amit Ghosh Ashok Kumar Singhvi. Indian National Science Academy, 2019. ISBN : 978-81-939482-1-7.

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**Ph.D (Course Work) Syllabus**

**Paper II: Endophytic microbes**

**Unit 1: General microbiology-** Introduction: The discovery of Microorganisms, theory of spontaneous generation, Biogenesis, Relationship between microorganisms and diseases, Koch's postulates. Main groups of microorganisms. Viruses and bacteria. Bacteria- classification based on Bergey's manual.

**Unit 2: Bacterial structure-** External structures- Glycocalyx, Capsule, flagella, fimbriae and pili. Cell Wall- composition and detailed structure of gram positive and gram-negative cell walls. Cytoplasm – Ribosomes, mesosomes, inclusion bodies, nucleoid, chromosomes and plasmids. Biochemical identification. Staining of bacteria- gram staining, negative staining. Solid and liquid media, selective, differential media. Culture methods- Streak, spread, pour plate, stab culture.

**Unit 3: Endophytes-** Endophytes- bacteria, fungi-studies on biological research. Endophytic fungi - symbiotic and opportunistic associations, co evolution and loss of reproductive structures, Use of endophytic fungi as biocontrol agents against plant diseases, insect herbivores. Mycorrhizal associations – endo and ecto mycorrhiza. Colonization and adaptation of endophytes. Endophytes as latent pathogens and biocontrol agents. Endophytes associated with plants- Leaf, root and stem endophytes- Plant interaction with endophytic bacteria and fungi, Biological nitrogen fixation - symbiotic and asymbiotic. Root - nodule formation in legumes.

**Unit 4: Sterilization-** Brief account on Sterilization techniques- Physical and chemical methods- flaming, boiling, autoclaving, heat, filtration, radiation. Aseptic methods- Biosafety cabinets. Brief account of microbial interactions - (symbiosis,

neutralism, commensalism, competition), Microbial enzymes in pharmaceuticals- anticancer drugs, anti-viral drugs, Bio-active compounds- production of antibiotics. Study of Bioremediation capacity of endophytes using research articles.

**Unit 5: Microbial secondary metabolism-** An account on secondary metabolism. Types of plant resistance to pathogens, the nature of resistance to disease- Pathogenicity genes in plant pathogens, Genes controlling: a) Degradation of cuticle and cell wall, b) Production of secondary metabolites fungal toxins Growth curve, measurements of microbial growth, 16srRNA gene sequencing studies, Role of endophytes in the production of taxol and related camptothecin- In vitro production of secondary metabolites in bioreactors. Bioprospecting- concepts. Biopiracy.

### **References:**

1. Joanne M Wiley, Linda M Sherwood and Christopher J Woolverton. 9<sup>th</sup> Ed. Presscott Microbiology, Mc Graw- Hill International Edition.
2. James G. Cappuccino. Microbiology- A laboratory Manual. 6<sup>th</sup> Ed. Global Edition.
3. Tortora, Funke, Case. An introduction to microbiology, 9<sup>th</sup> Ed., Dorling Kindersley (India) limited
4. Salle, AJ. Fundamental Principles of Bacteriology, 7<sup>th</sup> Ed., Tata-McGraw Hill Publishing Co.
5. He, H., Qiu, S.X., Hu, F.P. and Guang, X. 2004. Advance in biological effects of endophytic bacteria. J. Microbiol. 24, 40-45.
6. Subba Rao N.S., Soil Microbiology, 4<sup>th</sup> Ed. Oxford and IBH publishing Co. Pvt ltd.
7. Barbara S, Christine B. (2006). What are Endophytes? Soil Biology, Volume 9 Microbial Root Endophytes, B. Schulz, C. Boyle TN. Sieber (Eds.) Springer-Verlag Berlin Heidelberg

8. Kalyanaraman R. Meenambiga SS. Arulmathi R. Endophytic Fungi A Versatile Organism for Modern Microbiological Research and Industrial Applications.
9. Microbiology-<https://www.cliffsnotes.com/study-guides/biology/microbiology>

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**St. Mary's College, Thrissur**

**Ph.D (Course Work) Syllabus**  
**Paper III: Biophysics and Instrumentation**

**Unit I:**

Microscopy Techniques:

Light Microscopy: components of microscope, Basic principles and methods of Dark-field, Phase contrast, Transmission Electron Microscopy, Scanning Electron Microscope. Fluorescence Microscopy, Atomic Force Microscopy, Confocal Microscopy, Cytophotometry.

**Unit II**

Spectroscopy Techniques

Introduction to Spectroscopic Methods- Infrared Spectrometry, Nuclear Magnetic Resonance Spectroscopy, Molecular Mass Spectroscopy. UV/VIS spectroscopy, CD and Raman spectroscopy and X-ray diffraction, MALDI -TOF, Nano-LC.

**Unit III**

Chromatographic techniques: Theory and Applications - Paper Chromatography, TLC, Gel Filtration Chromatography, Ion Exchange Chromatography, Affinity Chromatography, GC, GLC, HPLC, HPTLC and FPLC. Measurement of radioactivity – GM counter & Scintillation counting methods. Application of Radioisotopes in biological sciences.

**Unit IV**

Centrifugation – Principles, Preparative and Analytical Centrifuges, Sedimentation analysis, RCF, Density Gradient Centrifugation and Ultracentrifugation. Isoelectric focusing. - Electrophoresis – Principle, types and

applications – PAGE, SDS-PAGE, Quality and quantity checking of DNA by AGE, Pulsed Field Gel Electrophoresis (PFGE).

### **Unit V:**

Molecular Biology Techniques Gene cloning techniques – Physical and chemical methods – Lipofection – Electroporation – Gene Bombardment. Blotting Techniques (Southern, Northern and Western blot). Polymerase Chain Reaction- Application of PCR technique. Molecular markers- RFLP, RAPD, AFLP, SSR.

### **References**

1. Molecular Biology of the Gene, Fifth Edition (2004) by James D Watson, Tania A. Baker, Stephen P. Bell, Alexander Gann, Michael Levine and Richard Losick, Benjamin Cummings.
2. Genomes 3 (2007) by T. A. Brown, Garland Science Publishing.
3. Microbial Genetics (2006) by S.R. Maloy, J. E. Cronan Jr., and D. Freifelder, Jones and Bartlett Publishers, Sudbury, Massachusetts.
4. Bioanalytical Chemistry (2004) by Susan R. Mikkelsen and Eduardo Corton, Wiley-Interscience.
5. A.K.Berry.2015. A Textbook of Biochemistry (Biological Chemistry). Emkay Publications.
6. Cantor and Schimmel. 2004. Biophysical chemistry: Part I, Part II and Part III, W.H. Freeman and Co., New York

**Research Scholar: Tisha Liza Tomy**

**Paper code:**

**Department of Biotechnology**

**St. Mary's College, Thrissur**

**Ph.D (Course Work) Syllabus**

**Paper IV: Research Methodology**

**Unit 1: Hypothesis:** Literature Survey, defining the question and formulating hypothesis. Objectives of Research –Methods of acquiring knowledge: tradition, experience; Preparation of research proposal.

**Unit 2: Methods of collecting data:** Tabulation and representation of data, sampling. Mean, median, mode, Mean deviation, standard deviation and standard error.

**Unit 3: Testing of hypothesis-** Statistical hypothesis- null hypothesis- alternative hypothesis- t test- Type I and Type II error-Analysis of variance- correlation and regression analysis. Generation of data, interpreting results/data and drawing conclusions

**Unit 4: Research design-** Meaning and parts of Research design, need for research design, Features of a good design - Important concepts relating to research design - Experimental Research designs. Research Design and thesis writings- Lab design and man management- Interpretation and writing of research report-technique-significance-steps in report writing- layout of research report- types of reports-precautions-writing review articles-role of computer in research.

**Unit 5: Computer Applications:**

Computer application and Report writing, Statistical Package for Social Sciences (SPSS) - computer packages: word processing and graphs – preparation of research documents: preparation of research proposals, writing of the report of the research studies, preparation of review of related studies



## **References:**

1. Gupta C.B- An introduction of statistical methods. Vikas publishing House Pvt. Ltd.
2. C R Kothari, Gaurav Garg: Research Methodology-Methods and Techniques New Age International Publishers
3. Grumani N. (2006). Research methodology for biological sciences.1st Edition, MJP Publishers, A unit of Tamilnadu Book House.
4. Cynthia G and Per J. (2001). Developing Bioinformatics Computer Skills: Shroff Publishers & Distributors Pvt. Ltd (O'Reilly), Mumbai.

## COVERING LETTER

From,

06.12.2022

Dr. M. Suvakkin  
Assistant Professor and Research Guide  
PG & Research Department of Economics,  
St. Joseph's College (Autonomous),  
Tiruchirappalli-620002. Tamil Nadu. India

To,

The Director - Research  
Bharathidasan University  
Palkalaiperur, Tiruchirappalli – 6200024

Through

The Principal,  
St. Joseph's College (Autonomous),  
Tiruchirappalli-620002. Tamil Nadu. India

Sir,

Sub: Minutes - Doctoral Committee - Name- Reg.  
Reg. No: BDU2220042779825


I am hereby submitting the minutes of the meeting of the Doctoral Committee for the candidate Mr. Vijay Daniel Anthony which was convened on 06.12.2022 in the Department of Economics of St. Joseph's College Trichy.

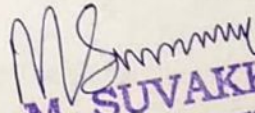
Thanking you.

Yours faithfully

Encl:

1. Minutes of Doctoral Committee
2. A copy of Course Work Syllabus

  
PRINCIPAL  
St. JOSEPH'S COLLEGE  
(AUTONOMOUS)  
TIRUCHIRAPPALLI 620 002

  
Dr. M. SUVAKKIN  
Assistant Professor & Research Guide  
Department of Economics  
St. Joseph's College (Autonomous)  
Tiruchirappalli - 620 002, Tamilnadu, India.



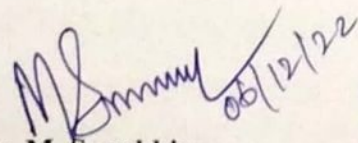
**Minutes of the Doctoral Committee**  
**Meeting held on 06.12.2022 (Mr. Vijay Daniel Anthony)**

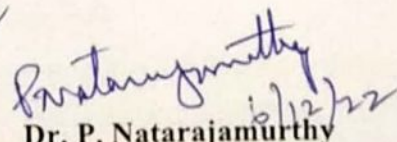
The Doctoral Committee meeting was convened to discuss the Proposal and Course Work for **Mr. Vijay Daniel Anthony** admitted in the Ph.D. Programme at the Department of Economics, St. Joseph's College (Autonomous) Tiruchirappalli with the following members:

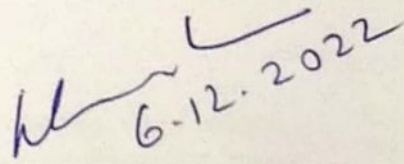
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|--|--|
| <p>1 <b>Dr. M. Suvakkin</b><br/>Assistant Professor<br/>Department of Economics<br/>St. Joseph's College<br/>Tiruchirappalli-620002</p>            | <p><b>Research Supervisor &amp; Convener</b></p> |
| <p>2 <b>Dr. P. Natarajamurthy</b><br/>Associate Professor<br/>Department of Economics<br/>Bharathidasan University,<br/>Tiruchirappalli-620024</p> | <p><b>Member</b></p>                             |
| <p>3 <b>Dr. K. A. Michael,</b><br/>Assistant Professor<br/>Department of Economics,<br/>St. Joseph's College,<br/>Tiruchirappalli-620002</p>       | <p><b>Member</b></p>                             |

The Members of Doctoral Committee scrutinized the candidate's drafted proposal for the Ph.D. Programme and listened to the presentation of the same. The candidate presented the research proposal entitled, "Social Protection Policies in Rural Development-A Case Study of Tamil Nadu" and offered all the clarification sought by the Doctoral Committee Members.

The Doctoral Committee suggests that the research scholar Mr. Vijay Daniel Anthony may take four courses, viz., Research Methodology (Sub Code: 22ECORM, Credit-4) Research and Publication Ethics (Sub Code: 22ECORPE, Credit 2), Rural Development (Sub Code: 22ECORD, Credit 4), Social Protection (Sub Code: 22ECOSP, Credit 4).

  
**Dr. M. Suvakkin**

  
**Dr. P. Natarajamurthy**

  
**Dr. K. A. Michael**  
**Dr. K.A. MICHAEL, M.A., M.Phil., MBA, PGDCA, Ph.D.,**  
Assistant Professor  
Department of Economics  
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**Dr. M. SUVAKKIN**  
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**ST. JOSEPH'S COLLEGE (AUTONOMOUS)**  
**DEPARTMENT OF ECONOMICS**  
**Ph.D. ECONOMICS-NOVEMBER 2022**  
**SUBJECT CODE: 22ECORM**  
**COURSE – I-RESEARCH METHODOLOGY**  
**Credit -4**  
**SYLLABUS**

**OBJECTIVE**

- 1 To provide comprehensive knowledge for pursuing research and to provide the mechanics and techniques of Report Writing and Thesis Writing.
- 2 To be able to develop review of related literature and research methodology based on the selected topic.
- 3 To understand the procedure for testing of hypothesis
- 4 To know the sample design and to develop the skills for sampling and sampling techniques used to collect data.

**Unit 1- Nature, Scope of Research, Formulating a Research Problem.**

Social Research – Nature, Scope, Uses and major steps – Pure, Applied and Action Research - Scientific Method: Theory and Facts-Formulation of a Research Problem-Objectives - Hypothesis: Types, Sources and Characteristics of Hypothesis. Formulating a research problem---Reviewing the Literature--- Identifying variables---Constructing a Hypothesis—Types Sources and Characteristics of Hypothesis.

**Unit 2- RESEARCH DESIGN AND DATA COLLECTION**

Functions of Research Design—Selecting a Research Design—Quantitative and Qualitative Research Design--- Exploratory, Descriptive and Experimental Design – Constructing an instrument for data collection-Selecting a method for Data Collection: Primary and Secondary Methods—Preparation of Schedule and Questionnaire- Selecting a Sample--Sampling Techniques-Principles of Sampling— Random/Non-Random and Mixed Sampling Designs.

**Unit 3 APPLICATION OF STATISTICAL TECHNIQUES**

Averages: Mean, Median, Mode – Dispersion - Correlation: Simple, Multiple and Rank Correlation - Regression Analysis: Linear, Non- Linear, Bivariate and Multivariate Analysis, Auto Correlation and Multicollinearity- Time Series Analysis- Scaling techniques- Factor Analysis.

**Unit 4-STATISTICAL INFERENCE**

Testing of Hypothesis: Type I error and Type II error - T-Test: Assumptions, Properties, Applications and Simple problems- F-Test: Assumptions, Properties, Applications and Simple problems- Z-Test: Uses and Simple problems - Chi-square Test: Assumptions, Properties, Applications and non-parametric tests.

**Unit 5-ANALYSIS AND REPORT WRITING**

Developing a draft outline---Writing about Variables---Referencing--- Footnotes-Endnotes--- Bibliography—Meaning of Analysis and Interpretation-Coding-Classification-Data Entry-Statistical and Mathematical Tools of Analysis-SPSS-Meaning and significance of a Research Report-Report Writing-Steps and Layout.



## References

1. Kumar, Ranjit (2014) Research Methodology-A Step by-Step Guide for Beginners, Sage Publications India Pvt Ltd.
- 2 Gupta, S.P. (2014) Statistical Methods.
- 3 Dominic, Salvatore and Reagel, Derrick (2001), Schaum's Outlines, Theory and Problems of Statistics and Econometrics, 2<sup>nd</sup> Edition, Mc Graw Hill India.
- 4 Spiegel, Murray R and Stephens, Larry J (2007) Schaums Outlines Statistics 4<sup>th</sup> Edition
5. Flick, Uwe, Introducing Research Methodology , 2<sup>nd</sup> Edition, Sage Publications.
6. Accharya, Rajat and Bhattacharya Nandan, (2020), Research Methodology for Social Sciences, Routledge, Taylor and Francis Group.

*P. Natarajamurthy*  
6/12/22

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*M. Suvakkin*  
08/12/22

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*K.A. Michael*  
6.12.2022

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**ST. JOSEPH'S COLLEGE (AUTONOMOUS)**  
**DEPARTMENT OF ECONOMICS**  
**Ph.D. ECONOMICS-NOVEMBER 2022**  
**SUBJECT CODE: 22ECORPE**  
**COURSE - II**  
**RESEARCH AND PUBLICATION ETHICS(RPE)**  
**Credit -2**  
**SYLLABUS**

**OBJECTIVES**

- 1 To introduce the researchers to indexing and citation databases, open access publications, research metrics and plagiarism tools
- 2 To identify research misconduct and predatory publications.

**Unit I Philosophy and Ethics**

1. Introduction to Philosophy: Definition, nature and scope, concept, branches.
2. Ethics: Definition, moral philosophy, nature of moral judgements and reactions.

**Unit II Scientific Misconduct**

1. Ethics with respect to science and research
2. Intellectual honesty and research integrity
3. Scientific Misconducts: Falsification, Fabrication and Plagiarism(FFP).
4. Redundant Publications: duplicate and overlapping publications, salami slicing
5. Selective Reporting and Misrepresentation of Data.

**Unit III Publication Ethics**

1. Publication Ethics: Definitions, introduction and importance
2. Best Practises/Standard setting initiatives and guidelines: COPE, WAME, etc
3. Conflicts of Interest.
4. Publication Misconduct: definition, concept, problems that lead to unethical behaviour and vice versa, types.
5. Violation of publication ethics, authorship and contributorship
6. Identification of Publication misconduct, complaints and appeals.
7. Predatory Publishers and journals.

**Unit IV Open access Publishing**

1. Open access publications ad initiatives
2. SHERPA/RoMEO online resource to check publisher copyright and self-archiving policies
3. Software tool to identify predatory publications developed by SPPU
4. Journal Finder/ Journal Suggestion tools viz. JANE, Elsevier Journal Finder, Springer Journal Suggester, etc.

**Unit V Publication Misconduct**

- A. Group discussions
  1. Subject Specific ethical issues,FFP, authorship



2. Conflicts of interest
3. Complaints and appeals: examples and fraud from India and abroad

#### B. Software Tools

Use of plagiarism tools like Turnitin, Urkund, and other open-source software tools.

### UNIT VI Databases and Research Methods

#### 1 Databases

1. Indexing Databases
2. Citation Databases: Web of Science, Scopus, etc.

#### B. Research Metrics

1. Impact Factor of Journal as per Journal Citation Report, SNIP, SJR, IPP, Cite Score.
2. Metrics h-index, g-index, i10 index, altmetrics

#### References

- 1 Bird, A.(2006). Philosophy of Science. Rotledge
- 2 MacIntyre, Alasdair(1967) A Short History of Ethics. London
- 3 P. Chaddah, (2018) Ethics in Competitive Research; Do not get scooped: Do not get plagiarized. ISBN:978-9387480865
- 4 National Academy of Sciences, National Academy of Engineering and Institute of Medicine.(2009). On Being a Scientist : A Guide to responsible conduct in Research: Third edition. National Academies Press.
- 5 Resnik, D.B.(2011). What is ethics in research & why it is important. National Institute of Environmental Health Sciences, 1-10, Retrieved from <https://www.niehs.nih.gov/research/resources/bioethics/whatis/index.cfm> Beall, J.(2012). Predatory Publishers are corrupting open access. Nature, 489(7415), 179. <https://doi.org/10.1038/489179a>
- 6 Indian National Science Academy (INSA), Ethics in Science Foundation, Research and Governance(2019). ISBN:978-81-939482-1
- 7 [www.insaindia.res.in/pdf/EthicsBook.pdf](http://www.insaindia.res.in/pdf/EthicsBook.pdf)

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 6/12/22  
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**ST. JOSEPH'S COLLEGE (AUTONOMOUS)**  
**DEPARTMENT OF ECONOMICS**  
**Ph.D. ECONOMICS-NOVEMBER 2022**  
**SUBJECT CODE: 22ECORD**  
**COURSE III-CORE AREA OF RESEARCH-RURAL DEVELOPMENT**  
**Credits -4**

**Objectives:**

- 1 To understand the core concepts and nuances of rural development.
- 2 To study about the rural economy of India and its characteristics
- 3 To get insight into rural institutions and various instruments of rural development

**SYLLABUS**

**Unit 1**

Concepts and Connotations in Rural Development-Basic Elements of Rural Development-Growth versus Development-Why Rural Development-Development and Change-Human Beings as the cause and consequence of development-Some Dilemmas in Development

**Unit 2**

Rural Economy of India-Size and Structure of the Rural Economy-Characteristics of the Rural Sector-Role of the Agricultural Subsector-Role of the Non-Agricultural Subsector-Challenges and Opportunities-Measures of the level of Rural Development-Measures of Income Distribution-Measures of the Level of Rural Development-Measures of Income Distribution-Measures of Development Simplified-Concepts and Measures of Rural Poverty.

**Unit 3**

Rural Development Policies-Freedom Control and Public Policy-Need for a Rural Development Policy-Goals of Rural Development Policy-Hierarchy of Policy Goals-Rural Development Policies in India-Globalisation and Rural Development-Critical Review of India's Strategies of Rural Development.

**Unit 4**

Policy Instruments of Rural Development-A Conceptual framework-An Action Systems-Policy Instruments-Equity Oriented and Growth Oriented Programs-Planning for Rural Development-Levels and functions of Planning-Methodology of Micro Level, Block and District Level Planning-Government Organizations-Panchayati Raj Institutions-Voluntary Agencies-NGO's-Corporations and Rural Development.

**Unit 5**

Integrated Rural Poverty-The Deprivation Trap-vulnerability-powerlessness-Nutrition based Poverty Trap-Money for Nothing-Micro Insights for a Macro Program-The limits of Microcredit- Equality as a Social Concern-Responsibility and Fairness-Poverty the human consequence of Inequality-The political roots of Development-Rights and Poverty. Various Case Studies.

**References**

1. Banerjee, Abhijit.V. and Duflo, Esther, Poor Economics, A Radical Thinking of the way to fight global poverty, Public Affairs, New York.
2. Banerjee Abhijit.V. and Duflo, Esther, The Economic Lives of the Poor. Journal of Economic Perspectives. Volume 21, Number 1.



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6.12.2020  
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**ST. JOSEPH'S COLLEGE (AUTONOMOUS)**  
**DEPARTMENT OF ECONOMICS**  
**Ph.D. ECONOMICS-NOVEMBER-2022**  
**SUBJECT CODE:22ECOSP**  
**COURSE IV- RELATED AREA TO SUPPORT THE RESEARCH**  
**SOCIAL PROTECTION**  
**Credit -4**  
**SYLLABUS**

**OBJECTIVES**

- 1 To understand basic concepts of Social Protection and Rural Development
- 2 To find the linkage between the above concepts
- 3 To understand how Social Protection could be a potential tool for rural development.

**Unit 1**

Social Protection-Meaning-Definition and Rationale-Conceptual and Operational Framework-Conceptual Foundations from the literature on Poverty and Inequality-Development Agency Perspectives-Poor People Realities-Social Protection through Institutions outside the State-Developed and Developing countries experience-Global Redistribution-global governance and the globalisation of social policy-Governance and Social Protection-Social Protection-The development Process and Poverty Reduction.

**Unit 2**

Social Protection and Social Safety Net Interventions-Performance of Social Safety nets Measurement-What is covered by Social Protection and Labour Programs-Benefit Levels of Social Safety Net Programs-Poverty and Inequality Impacts of Social Protection Safety Nets Programs-Factors that affect the impact of Social Safety Net Transfers on Poverty and Inequality-Case Studies

**Unit 3**

Social Assistance and Aging-Old age Social Pensions -Old age social Pensions accomplished-Emergence of Adaptive Social Protection-Why the world needs Adaptive Social Protection-Building Resilience before Shocks Occur-Increasing the Capability of Social Safety Nets to respond to shocks after they occur-Various Case Studies of Various Countries and experiments- Policy Measures and Good Practises to address the challenge the gap in providing social security to the rural areas-Land reforms et al.-Establishing social protection floors-Lessons from successful social programs and experiences-Transformative Social Protection-Universal Social Protection.

**Unit 4**

Social Protection Schemes- Pradhan Mantri Shram Yogi Maan-Dhan Yojana (PM-SYM) (Old Age Protection)- National Pension Scheme for Traders and The Self-employed Persons (NPS)- Pradhan Mantri Jeevan Jyoti Yojana (PMJJBY)- Pradhan Mantri Suraksha Bima Yojana (PMSBY)- Atal Pension Yojana- PDS- Pradhan Mantri Awaas Yojana – Gramin (PMAY-G)- National Social Assistance Programme (NSAP) -Old age Protection- Ayushman Bharat-Pradhan Mantri Jan Arogya Yojana (AB-PMJAY)- Health Insurance Scheme for Weavers (HIS)- Pradhan Mantri Kisan Mandhan Yojana- National Safai Karamcharis Finance and Development Corporation (NSKFDC)- Self Employment



Scheme for Rehabilitation of Manual Scavengers-PAHAL-Various Welfare and Social Protection Schemes by Government of Tamil Nadu.

### Unit 5

Social Protection Schemes-of Various Countries under different categories-Social Assistance-Social Insurance-Labour Markets-Social Spending in South Asia-Social Protection in the Asia and the Pacific-Various Case Studies and Examples

### References

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