DIT UNIVERSITY
Dehradun

Detailed Course Structure & Syllabus
of
Ph.D. Economics

Course Structure & Syllabus of Ph.D. Economics
Applicable for Batch: 2021 Onwards
Course Structure

Course Category	Course Code	Course Title	L	T	P	Credit
UC	ENG906	Advanced Economic Theories	4	0	0	4
UC	ECO907	Research Methodology	4	0	0	4
GE I	ECO946/947	General Electives I	4	0	0	4
GE II	ECO948/949	General Electives II	4	0	0	4
UC	CPE-PPE	Research and Publication Ethics	1	0	2	2
Project	ECO909	Seminar Course	0	0	2	1
		Total				**19**

General Electives I

ECO946	Advanced Econometrics
ECO947	Advanced Quantitative Methods

General Electives II

ECO948	Social and Economic Development in India
ECO949	Experimental Design and Data Analysis

Note: Apart from above listed Elective courses, Research Scholar may choose any course across departments being offered at PG level, if it is required/suggested by the Research Committee.

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Applicable for Batch: 2021 Onwards
Detailed Syllabus
Program/Branch: Ph.D. Economics

Subject Code	ECO906	Subject Title	Advanced Economic Theories						
LTP	4-0-0	Credit	4	Subject Category	UC	Year	1st	Semester	I

Course Objectives:
- To provide the basic ideas on Micro Economics, Macro Economics, Development Theories and Financial Economics which would be useful for PhD students.
- To increase the understanding of PhD students to develop their own theories based on existing concept and principles in various areas of Economics.
- To increases consciousness of PhD students towards advance theories of economics.

UNIT 1: Basic Concept of Micro Economics (10 Lectures)
Classical Demand Theory; Various types of Production Function; Choice under Uncertainty.

UNIT 2: Economic and Social Welfare (10 Lectures)
Externalities and Public Goods; Market failure, Asymmetric Information; Theory of Welfare, General Equilibrium Theory.

UNIT 3: Elementary Concept of Macro Economics (10 Lectures)
Measurement of National Income; Keynesian Theory of Employment and Income Generation; Application of Consumption and Saving Function, Investment Multipliers.

UNIT 4: Theories of Development (10 Lectures)
Adam Smith Theory of Development; Marxian Theory of Development; Schumpeterian view on technological innovation; Harrod-Domar Growth Model; Big-Push Theory.

UNIT 5: Emerging Issues in Financial Institutions and Market (12 Lectures)
Measurement of Financial Inclusion and Development; Financial Stability; Inequality and Financial Illiteracy; Digital Finance; Micro Finance.

Learning Outcomes:
- PhD students would be able to undertake their research.
- PhD students would be familiar with crucial theories in Economics.
- PhD Students can be used existing economic theories in their research.

Text book [TB]:
1. H.R. Varian, Microeconomic Analysis (3rd edition), W.W. Norton and Company. 1992.
2. Mas-Colell, M.D. Whinston, and J.R. Green, Microeconomic Theory, 2006.
3. Reading Material in form of research articles in soft copy also would be provided to the students by the respective faculty.

Reference books [RB]:
1. Microeconomics: Theory and Applications, A. Sen, Oxford University Press, New Delhi, (1999).
2. *Principles of Economics*, Karl E. Case and Ray C. Fair, 8th edition, Pearson Education, Inc., 2007.
3. *Fundamentals of Microeconomics*, Snyder and W. Nicholson, *Cengage* (India), 2010.
4. Microeconomics, Robert Pindyck, Daniel Rubinfeld , 8th edition, Pearson, 2017.

Course Structure & Syllabus of Ph.D. Economics Applicable for Batch: 2021 Onwards

Subject Code	ENG906	Subject Title	Research Methodology						
LTP	4-0-0	Credit	4	Subject Category	Core	Year	I	Semester	I

Course Objective:

1. To make the scholars understand the various techniques of research and their application.

2. To enable the students select the appropriate methodologies as per the type of research.

UNIT – I RESEARCH: MEANING AND SCOPE (5 Hrs)

Philosophy and Meaning of Research, Nature and Scope of Research, Nature of inquiry in Physical Science and Social Sciences, Difference between writing a popular article and research paper, Difference between writing a book and a dissertation

UNIT – II RESEARCH-METHODOLOGY AND APPROACHES (10 Hrs)

Selection of Research Topic, Plan of Work, Thesis Statement and its Feasibility, Survey of different critical approaches, Selection of a particular approach, Micro and Macro analysis, The identification of the Research Problem, Problem of plagiarism, Material Collection: Primary and Secondary Sources, Reliability of Sources

UNIT – III PREPARATORY STEPS (7 Hrs)

Writing the Synopsis, Literature Survey, The search for facts; the verification of facts, the analysis of evidence, trusty and causation, sources if prejudice and bias, Collection, Listing and Organization of Material, Library references; note- making, Use of Note-Cards and Reference Cards.

UNIT – IV ESSENTIALS OF THESIS-WRITING (13 Hrs)

Format and the Structure of a thesis, Single and Multi-Tier Division of Chapters, Writing of the Main Chapters, Preparation and Presentation of Conclusions, Foot Notes, Bibliography, Index, Quotation & Translation, Style: Paragraphing: Mechanics of Writing, The stylistics of thesis writing, Preparation of Manuscript and References, Proof reading, Documentation, Use of MLA Style Sheet

Learning Outcome

1. The scholars will be able to explore and understand the various Research methods.
2. They will be able to strengthen their research work by selecting the most appropriate research tool for their study.

TEXT BOOK :

1. The Art of Literary Research, R.D. Altick and J.J. Fenstermaker. The University of Michigan, 1963.

2. The MLA Style Sheet- recent edition.
3. The Craft of Research, Booth and Colomb. Chicago Guides to Writing, Editing, and Publishing

REFERENCE BOOKS:

1. Methodology and Methods of Linguistic Research, I.P. Ranspopov.
2. Literary Research Guide, J.L.Harner.2nd edn. New York Press, 1993.
3. Handbook of Literary Research, R.H. Miller. The Scarecrow Press, 1995.
4. G. Watson- The Literary Thesis
5. Jaeques Barzun and Henry F. Graft. The Modern Researcher, New York, Harcorurt, Brace & World, 1962.

Course Structure & Syllabus of Ph.D. Economics
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Subject Code	ECO946	Subject Title	Advanced Econometrics						
LTP	4-0-0	Credit	4	Subject Category	GE I	Year	1st	Semester	I

Course Objectives:
- To provide the knowledge of econometrics in economic theories.
- To cover basic econometrics with focus on regression modelling and the problems encountered in dealing with cross-section and time series data.
- To increase the understanding of PhD students towards advance econometric models in emerging social and economic issues in India.

UNIT 1: Basic Introduction of Econometric   **(10 Lectures)**
Regression analysis; Assumptions of the classical linear regression Model; Two variable regression analyses; multiple regression analyses.

UNIT 2: Statistical Remedies in Time Series Data   **(10 Lectures)**
Problem of Heteroscedasticity, Autocorrelation and Multicollinearity, Serial Correlation and their solution; Application of Dummy variable in regression models.

UNIT 3: Applied Econometric Models in Time Series and Panel Data   **(10 Lectures)**
Time Series Econometrics and its Application; Time-series models; Panel data regression models and its application.

UNIT 4: Application of Various Models in Quantities and Qualitative Data   **(10 Lectures)**
Validity of Primary Data; Classical linear regression model; Specification Analysis and Model Validity.

UNIT 5: Auxiliary Econometric Models   **(12 Lectures)**
Systems of Regression Equations; Simultaneous-equation models; Models with lagged variables; Models for discreet choice.

Learning Outcomes:
- PhD students would get idea to create their own empirical models.
- PhD students would be able to identify various issues in time series, panel data and cross-sectional data.
- PhD students would enable to resolve statistical remedies in econometric model.

Text book [TB]:
1. D.N. Gujarati, Basic Econometrics, The McGraw-Hill Companies. 2005.
2. G.S. Maddala, Introduction to Econometrics, (3rd Edition) Wiley, 2001.

Reference books [RB]:
1. J.M. Wooldridge, Introductory Econometrics: A Modern Approach, South Western, 2009.
2. Reading Material in form of research articles in soft copy also would be provided to the students by the respective faculty.

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Subject Code	ECO947	Subject Title	Advanced Quantitative Methods						
LTP	4-0-0	Credit	4	Subject Category	GE I	Year	1st	Semester	I

Course Objectives:
- To introduce the basic concepts and terminology that are fundamental to Quantitative Methods.
- To increasing the understanding of students on application of Quantitative Methods.
- To provide the concept of correlation and regression analysis under multivariate analysis in Quantitative Methods.

UNIT 1: Introduction of Statistics and Sampling (10 Lectures)
Statistics and Statistical Methods; Characteristics of Statistics; Functions of Statistics; Limitations of Statistics; Statistics in economics; Distrust of Statistics, Sampling Techniques; Need for Sampling

UNIT 2: Collection, Classification, and Presentation of Data (10 Lectures)
Data Collection; Data Classification and Data Gathering; Drafting Questionnaire; Sample Selection; Data Presentation.

UNIT 3: Measures of Central Tendency and Dispersion (10 Lectures)
Central tendency, Measures of dispersion; Objectives of measuring dispersion; Characteristics of a measure of dispersion; Range, Quartile deviation, Average deviation, Standard deviation, Relation between standard deviation and other measures, Relative measures of dispersion, Lorenz Curve.

UNIT 4: Simple Correlation and Regression (10 Lectures)
Correlation Analysis; Regression Analysis.

UNIT 5: Time Series Analysis (12 Lectures)
Meaning of Time Series; Applications of Time Series; Variations in Time Series; Measurement of trend or secular trend; Measurement of seasonal variations.

Learning Outcomes:
- The students would able to use statistical tool to estimate central measures of a central tendency.
- The students would able to apply descriptive analysis under univariate data series.
- Students would able to examine cause and effect relationship between the variables.

Text book [TB]:
1. Fundamentals of Statistics, S.C. Gupta, S. Chand & Sons New Delhi, 2013.
2. Theory and Problems of Statistics, Murry R Spiegel, Schaum's outline series, McGraw Hill, 1992.
3. Applied Statistics for Economists, P.H. Karmal and M. Polasek, 4th edition, Pitman, Australia.

Reference books [RB]:
1. Ray C. Fair. 2012. Predicting Presidential Elections and Other Things. 2nd. edition. Stanford University Press.
2. Mathematical Statistics, John E. Freund, Prentice Hall, 1992.
3. An Introduction to Mathematical Statistics and its Applications, Richard J. Larsen and Morris L. Marx, Prentice Hall, 2011.
4. Basic Statistics, A.M. Gun, M.K. Gupta, B. Dasgupta, World Press Private Limited Nagar.

Course Structure & Syllabus of Ph.D. Economics
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Subject Code	ECO948	Subject Title		Social and Economic Development in India					
LTP	4-0-0	Credit	4	Subject Category	GE II	Year	2021-22	Semester	I

Course Objectives:
- To provide a broader understanding of economic transformation of India.
- To enhance the understanding towards political economy of international trade, ecological services, and various forms of development.
- To provide the in-depth idea of current issues on social and economic development in India.

UNIT 1: Emerging Social Issues in India   (10 Lectures)
Poverty; Food Insecurity; Hunger; Unemployment; Income Inequality; Financial Literacy, Financial Crisis

UNIT 2: Emerging Economic Issues in India   (10 Lectures)
Inflation and price instability; Burden of Public Debt; Burden of Non-Performing Assets (NPA) in Banking Sector; Volatility of Crude Oil Prices in International Market; Devaluation of INR in International market

UNIT 3: Environmental and Ecological Imbalance in India   (10 Lectures)
Allocation of natural resources; Renewable- energy, minerals, water, land; Environmental pollution- air, water; Measurement of Nature and Ecosystem Services; Regional Diversity in Ecosystem Services, Economic Valuation of Ecosystem Services (i.e. Rivers, Forestry, Soil, Air).

UNIT 4: Agricultural and Industrial Development in India   (10 Lectures)
Agricultural marketing and MSP; Farmer's Suicides; Subsidy in Indian Agricultural; Current Issues in Indian Agriculture and Agro-based Industries; Growth of MSMEs in India; Basic Problems in Indian MSMEs; Role of MSMEs in Social and Economic Development in India.

UNIT 5: Various Aspect and Measurement of Development   (12 Lectures)
Economic Development; Social Development; Human Development; Environmental Development.

Learning Outcomes:
- PhD Students would be able to understand the emerging issues in various areas which would also provide them a viable research gap.
- PhD students would also get a comprehensive knowledge on developmental issues.
- The outcome also can be seen to solve the environmental concern in India.

Text book [TB]:
1. Amartya Sen (2001) (2nd edition). Development as Freedom. Oxford Network: Oxford University Press, USA.
2. T. Tietenberg, and L. Lewis, Environmental and Natural Resource Economics (International Edition) Pearson Education, 2008.

Reference books [RB]:
1. Hanley, N., Shogren, J., and B.White, Environemntal Economics in Theory and Practice (2nd edition), Palgrave MacmIllan: UK, 2007.
2. Birnie, P., Boyle, A., and C. Redgwell, International Law and the Environment (3rd edition), Oxford University Press: Oxford, New York, 2009.
3. Reading Material in form of research articles in soft copy also would be provided to the students by the respective faculty.

Course Structure & Syllabus of Ph.D. Economics
Applicable for Batch: 2021 Onwards

Subject Code	ECO949	Subject Title	Experimental Design and Data Analysis						
LTP	4-0-0	Credit	4	Subject Category	GE II	Year	1st	Semester	I

Course Objectives:
- To provide the basic idea to the students to use statistical tools in experimental work in various branches of engineering, social sciences and medical sciences.
- To provide statistical tools and techniques to analysing the data collecting through primary field survey.

UNIT 1: Simple Statistical Measure (10 Lectures)
Review of standard discrete and continuous statistical distributions. Sampling distributions such as chi-square, Student's t and, F- distribution, Normal Distribution, Binomial Distribution, Poison Distribution, Sampling Distributions.

UNIT 2: Regression and Correlation (10 Lectures)
Estimation and Tests of Hypotheses. Regression and Correlation Analysis. Test for independence and goodness of fit.

UNIT 3: Non-parametric Statistical Measurement (10 Lectures)
Non-parametric tests. Analysis of Variance (ANOVA): One way and two way classification. Analysis of Covariance (ANCOVA).

UNIT 4: Experimental Designs (10 Lectures)
CRD, RBD, LSD, BIBD; Split plot and missing plot technique.

UNIT 5: Index Based Estimation (12 Lectures)
Principal Components Analysis; Factors Analysis; Composite Z-score, Simulation Techniques, Single-value decomposition technique.

Learning Outcomes
- The subject will include different statistical tools to analysis the experimental and collected data through primary field survey and secondary sources.
- Student will be able to get experimental technique and applications of statistical tools in economic theories.

Text book [TB]:
1. R.E. Walpole, Probability and Statistics for Engineers and Scientists, Prentice-Hall-Gale, 1998.
2. D.C. Montgomery, Design and Analysis of Experiments (5th edition), John Wiley & Sons (Asia) Pte. Ltd. Singapore, 2004. (ISBN: 0471316490).

Reference books [RB]:
1. R. Y. Myers, et al., Response Surface Methodology: Process and Product Optimization using Designed Experiments (3rd edition), Wiley, 2009.
2. M.S. Phadke, Quality Engineering Using Robust Design, Prentice Hall, Englewood Cliff, New Jersey, 1989.

Course Structure & Syllabus of Ph.D. Economics
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Subject Code	CPE-PPE	Subject Title	Research and Publication Ethics						
LTP	1-0-2	**Credit**	2	**Subject Category**	UC	**Year**	1st	**Semester**	I

Course Objective:
- To provide the basic philosophy of science and ethics, research integrity, publication ethics.
- To identify the research misconduct and predatory publications.
- To increase the awareness of students towards indexing and citation databases, open access publication and research matrix.

Theory
UNIT 1: Philosophy and Ethics   (2 Lectures)
Introduction to philosophy: definition, nature and scope, concept, branches, Ethics: definition, moral philosophy, nature of moral judgements, and reactions.

UNIT 2: Scientific Conduct   (4 Lectures)
Ethics with respect to science and research, Intellectual honesty and research integrity, scientific misconducts: Falsification, Fabrication, and Plagiarism, Redundant publications: duplicate and overlapping publications, salami slicing, Selective reporting and misrepresentation of data.

UNIT 3: Publication Ethics   (5 Lectures)
Publication ethics: definition, introduction and importance, Best practices/standards setting initiatives and guidelines: COPE, WAME, etc., Conflict of interest, Violation of publication ethics, authorship and contributor-ship, Identification of publication misconduct, complaints and appeals, Predatory publishers and journals.

Practice
Unit 1: Open Access Publishing   (5 Lectures)
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 tool viz. JANE, Elsevier Journal Finder, Springer, Journal Suggester, etc.

Unit II: Publication Misconduct   (5 Lectures)
Subject specific ethical issues, FFP, authorship, Conflict of interest, Complaints and appeals: Examples and fraud from India and abroad, Use of plagiarism software like Turnitin, Urkund and other open source software tools

Unit III: Databases and Research Metrics   (5 Lectures)
Indexing databases, Citation data base, web of science, Scopus, etc., Impact factor of journal as per journal citation report, SNIP, SJR, IPP, Cite Score, Metrics: h-index, g index, i10 index, alt-metrics

Learning Outcomes
- Students will able to publish their research output in high impact factors.
- Student will be understood about the online data base, research matrix and plagiarism.

Text book [TB]:
- Bryman A (2008) Social research methods. Oxford University Press, Oxford
- Hoffman, A. (2003). Research for Writers , London : A&C Black Publishers Limited
- Creswell, John W. (2012). Educational Research Planning, Conducting, and Evaluating Quantitative and Qualitative Research, ISBN 0-13-136739.

Reference books [RB]:

- Hammersley M (2011) Methodology—who needs it? Sage, Los Angeles, CA
- Hesse-Biber SN, Leavy P (2011) the practice of qualitative research. Sage, Los Angeles, CA
- Horrigan PG (2007) Epistemology: an introduction to the philosophy of knowledge. iUniverse, Lincoln, NE

Course Structure & Syllabus of Ph.D. Economics
Applicable for Batch: 2021 Onwards

Subject Code	ECO909	Subject Title	Seminar Course						
LTP	0-0-2	**Credit**	**1**	**Subject Category**	UC	**Year**	**1ˢᵗ**	**Semester**	I

Course Objective:
- To increase the understanding of students towards emerging issues in India and other economies.
- To increase the presentation skills of students.
- To provide the incentive to students to choose a significant topic for their PhD research.

Course Outcome:
- Students will be able to select appropriate and viable topic for PhD research.
- Students will be able to increase write a scientific research article for publication.
- Students will be able to present their research output at greater platform.

In this course a PhD student has to present seminar/presentation or a series of presentations on a topic(s) chosen by him/her in consultation with his/her PhD Thesis Supervisor/ Faculty Advisor. The frequency of seminar/presentation will be decided by the Course Coordinator.

[**Note:** Adopted from IIT Indore, IIT Bombay and IIT Kanpur].

References
Books and research publications in various relevant journals.