

**COURSE STRUCTURE & SYLLABUS OF PH.D. ECONOMICS  
APPLICABLE FOR BATCH: 2022 ONWARDS**

**DIT UNIVERSITY  
DEHRADUN**



**DETAILED COURSE STRUCTURE & SYLLABUS  
OF  
PH.D. ECONOMICS**

# COURSE STRUCTURE & SYLLABUS OF PH.D. ECONOMICS APPLICABLE FOR BATCH: 2022 ONWARDS

## COURSE STRUCTURE

Year: 1<sup>st</sup>

Semester: I

Course Category	Course Code	Course Title	L	T	P	Credit
UC	ECO906	Advancement in Development Economics	4	0	0	4
UC	ECO907	Research Methodology	4	0	0	4
GE	ECO946/947/948/949	General Electives	4	0	0	4
UC	CPE-PPE	Research and Publication Ethics	1	0	2	2
Project	ECO909	Seminar Course	0	0	4	2
		<b>Total</b>				<b>16</b>

### General Electives

ECO946	Advanced Econometrics
ECO947	Advanced Quantitative Methods
ECO948	Social and Economic Development in India
ECO949	Experimental Design and Data Analysis

# COURSE STRUCTURE & SYLLABUS OF PH.D. ECONOMICS APPLICABLE FOR BATCH: 2022 ONWARDS

## DETAILED SYLLABUS PROGRAM/BRANCH: PH.D. ECONOMICS

Subject Code	ECO906	Subject Title	ADVANCEMENT IN DEVELOPMENT ECONOMICS						
LTP	4-0-0	Credit	4	Subject Category	UC	Year	1 <sup>st</sup>	Semester	I

### Course Objectives:

- To familiarize the scholar with different development aspects, theories and issues.
- To increase the understanding of PhD students on various facets of economic development.
- To provide the exposure to the students towards development economics which a core area will help the students to enhance.

### Unit 1: Trends in Development Theories (8 Lectures)

Development contexts: Conceptions from and about people at the grassroots, the cultural and political contexts, development in question the status of development theory, meanings of development over time, the development field, trends development theory.

### Unit 3: Population, Development and Resource Allocation (9 Lectures)

Population growth and development, process determinants of fertility, optimum population and other facets of demographic transitions, market mechanism and role of the state in resource allocation, equity and growth approach to social development.

### Unit 4: Development and Environment (8 Lectures)

Market based approach to environmental analyses, common property rights, measuring environmental values.

### Unit 5: Development and Trade (10 Lectures)

Gain from trade, trade and employment, interface between trade, technology and development, trade policies, foreign capital and development, WTO, international trade and development.

### Unit 6: Urbanization and Rural Development (8 Lectures)

Urban migration: Migration and urbanization, dilemma, migration and development, international migration in developing countries.

### Unit 7: Rural Development (7 Lectures)

Concept, determinants and policies, decentralized planning and Panchayati Raj Institutions.

### Learning Outcomes:

- PhD students would be able to undertake their research on developmental issue.
- PhD students would be familiar with crucial theories in development economics.
- PhD students would be able to use existing economic theories in their research.

### TEXT BOOK [TB]:

1. H.R. Varian, Microeconomic Analysis (3<sup>rd</sup> 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.

# **COURSE STRUCTURE & SYLLABUS OF PH.D. ECONOMICS APPLICABLE FOR BATCH: 2022 ONWARDS**

## **REFERENCE BOOKS [RB]:**

1. Economic Development, P. Michael, Todaro, and Stephen C Smith, Pearson Education, (Singapore) Pvt. Ltd., Indian Branch, Delhi, 2004.
2. Development Economics, D. Ray, Seventh impression, Oxford University Press, New Delhi, 2009.
3. Development as Freedom, Amartya Sen, Oxford University Press, 2000.
4. Economics of Development and Planning (Theory and Practice), V.K. Puri and S.K. Misra, Himalaya Publishing House Pvt. Ltd., Mumbai, 2016.
5. Growth Economics, A K Sen, (ed.) Penguin Books, 1970
6. Understanding Poverty, Abhijit Banerjee, Roland Benabou and Dilip Mookerjee, Oxford Press, 2006.
7. International Economics, Kindleberger C.P. Krugman Paul R. and Obstfeld Maurice, 8<sup>th</sup> Edition, Pearson Education, 2007.
8. Paul Krugman, Maurice Obstfeld, and Marc Melitz, International Economics: Theory and Policy, Addison-Wesley (Pearson Education Indian Edition), 9th Edition, 2012.
9. Dominick Salvatore, International Economics: Trade and Finance, John Wiley International Student Edition, 10th edition, 2011.

# COURSE STRUCTURE & SYLLABUS OF PH.D. ECONOMICS

## APPLICABLE FOR BATCH: 2022 ONWARDS

Subject Code	ECO907	Subject Title	RESEARCH METHODOLOGY						
LTP	4-0-0	Credit	4	Subject Category	UC	Year	1 <sup>st</sup>	Semester	I

### Course Objective:

- To give an orientation of scientific research methods and techniques that are widely used in economic development and planning.
- Planners need to know, understand and be able to apply methods, techniques and terminology of scientific research in economics so that students can assess the value, quality and limitations of research inputs and outputs.
- The course also focuses on the application of advance research methods and techniques, analysis of the data collected and interpretation of the findings, presentations of findings and conclusions.

### Unit 1: Basic Research Concept

(10 Lectures)

Research Science; Social Research Concepts and Components; Theories and Concepts; Research Hypotheses; Variables and Causation; Deductive and Inductive Approaches; Grounded Theory.

### Unit 2: Research Process

(10 Lectures)

Selection and Focusing on a Topic; Conceptualization (Research Questions, Problem Statement, Objectives and Conceptual Framework); Operationalization; Construction of Indicators; Levels of Measurement; Reliability and Validity.

### Unit 3: Categories of Research and Research Design

(10 Lectures)

Exploratory; Descriptive; Explanatory; Survey (Including Sampling Design and Sample Size); Case Study; Experimental Design.

### Unit 4: Data Collection Techniques

(10 Lectures)

Secondary Data Collection- Literature Study, Analysis of Articles; Primary Data Collection- Observation, Interviews, Key Informants, Group Discussion, Rural Rapid Appraisal (RRA), Participatory Rural Appraisal (PRA), Questionnaire Survey and Pre-testing.

### Unit 5: Data Analysis and Interpretations, Report Writing

(12 Lectures)

Data Processing and Analysis; Qualitative Data Analysis; Quantitative Data Analysis; Hypothesis Testing, Research-Structure and Components; Report Writing-Content, Chaptalization.

### Learning Outcome

- PhD student would be talented to use various research methods to enhance the quality of their research.
- PhD student would get a conceptual idea to analysis primary and secondary data.
- PhD students would be empowering to provide rational and viable statistical inference on their findings.

### TEXT BOOK [TB]:

- Roger Gomm (ed.), Social Research Methodology: A Critical Introduction, 2<sup>nd</sup> edition, Palgrave Macmillan, N.Y., 2008.
- S. Rodney and L. Roberts: Contemporary Social Research Methods, 3<sup>rd</sup> Edition, Wadsworth/Thomson Learning, Belmont, 2002.

### REFERENCE BOOKS [RB]:

- W. Lawrence Neuman: Social Research Methods: Qualitative and Quantitative Approaches, 4<sup>th</sup> Edition, Allyn and Bacon, Boston, 2000.
- 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: 2022 ONWARDS

Subject Code	ECO946	Subject Title	ADVANCED ECONOMETRICS						
LTP	4-0-0	Credit	4	Subject Category	GE I	Year	1 <sup>st</sup>	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, problem of interference, matrix approach to linear regression model.

### Unit 2: Statistical Remedies in Time Series Data

**(10 Lectures)**

Problem of Heteroscedasticity, Autocorrelation and Multicollinearity, Multicollinearity and multicollinearity, Serial Correlation and their solution; Forecasting with ARIMA and VAR Models, alternative econometric methodologies, Application of Dummy variable in regression models, Logit, Probit and Tobit models, Autoregressive and distributed – lag models.

### Unit 3: Applied Econometric Models in Panel Data

**(10 Lectures)**

Panel data regression models and its applications, Random v/s fixed model, problem of Heteroscedasticity, Autocorrelation and Multicollinearity, serial correlation in panel data.

### 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 discrete 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.

# COURSE STRUCTURE & SYLLABUS OF PH.D. ECONOMICS

## APPLICABLE FOR BATCH: 2022 ONWARDS

Subject Code	ECO947	Subject Title	ADVANCED QUANTITATIVE METHODS						
LTP	4-0-0	Credit	4	Subject Category	GE I	Year	1 <sup>st</sup>	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

## APPLICABLE FOR BATCH: 2022 ONWARDS

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) (2<sup>nd</sup> 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, Environmental Economics in Theory and Practice (2<sup>nd</sup> edition), Palgrave Macmillan: UK, 2007.
2. Birnie, P., Boyle, A., and C. Redgwell, International Law and the Environment (3<sup>rd</sup> 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: 2022 ONWARDS

Subject Code	ECO949	Subject Title	EXPERIMENTAL DESIGN AND DATA ANALYSIS						
LTP	4-0-0	Credit	4	Subject Category	GE II	Year	1 <sup>st</sup>	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

## APPLICABLE FOR BATCH: 2022 ONWARDS

Subject Code	CPE-PPE	Subject Title	RESEARCH AND PUBLICATION ETHICS						
LTP	1-0-2	Credit	2	Subject Category	UC	Year	1 <sup>st</sup>	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 be 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

# **COURSE STRUCTURE & SYLLABUS OF PH.D. ECONOMICS**

## **APPLICABLE FOR BATCH: 2022 ONWARDS**

- 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: 2022 ONWARDS**

Subject Code	ECO909	Subject Title	SEMINAR COURSE						
LTP	0-0-2	Credit	2	Subject Category	UC	Year	1 <sup>st</sup>	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.

### **REFERENCES**

Books and research publications in various relevant journals.