

Syllabus for Ph. D.



**DEPARTMENT OF ECONOMICS
RAJIV GANDHI UNIVERSITY
Rono Hills-791112
2015**

First Semester

Paper I:	Research Methodology
Paper II:	Computer Application

Objectives of the programme:

Acquisition of knowledge acts as the guiding principle up to MA level and M. Phil acts as the bridge between the acquisition of knowledge and its creation. The Ph.D work is concerned with the creation of new socially useful knowledge. The scholars are expected to show their originality and creativity in their research leading to the writing of a thesis containing original ideas.

Outcome of the programme:

The Ph. D. work has contributed to the enhancement of the research ability of the scholars, and the Ph.D. thesis are a good source of information especially of Arunachal economy and the Northeastern economy. The students who have got Ph.D from the Department of Economics have shown their brilliance in their services.

PAPER I: RESEARCH METHODOLOGY

Total Marks: 100

Objectives:

Compulsory for all the scholars admitted into Ph.D. in Economics, this paper deals with the basic rules and procedure followed in research in social science in general and in Economics in particular. Of the five units of the syllabus, the first two deal with sampling and the collection of data representative of the universe. The next two units are concerned with the estimation procedure of a structural model of the economy. The last unit is the time-series analysis dealing with the growth and cyclical behaviour of economic variables.

Outcome:

Invaluable to all the Ph.D scholars, this paper has proved to be a common guidebook of all researchers in the Department of Economics.

Unit I: Nature of Social Science Research

Meaning of Research – Social Science research and its Objectives – Types: Participant Observations, Action research, Participant Action Research, Community based research; quantitative and qualitative research, economic research and its problems Research Design – importance – Features of a good research design.

Unit II: Instruments of Social Science Research

Identification of the economic problem to be researched – literature review, construction of conceptual frame work, formulation of hypothesis, Data – Secondary and primary collection of primary data – preparation of questionnaire; sampling problems: heterogeneity of the universe, difference between theoretical variables and their observable counterparts, stratification of the universe and methods of Sampling Empirical testing of the hypothesis and report writing.

Unit III: Empirical Methods of Estimation

Estimation of general linear regression model, and testing the significance of the coefficients and construction of their confidence intervals: generalized least squares, Violation of the assumptions: heteroskedasticity and its solution: testing of autocorrelation and its removal.

Unit IV: Model of an Economy and its Estimation

Formulation of a simple model of an economy and its estimation; distributed lag model. Problems in simultaneous equations model: bias, multicollinearity, endogeneity, etc., and their solution, principal components analysis.

Unit V: Time Series Analysis

Time series – stationary and non-stationary; trend – deterministic and stochastic; Autoregression and Autocorrelation; Spectrum of a time series, Random walk, unit root tests, Co-integration: Vector Auto Regression and Granger Causality, Estimation using time series.

Note: Special emphasis should be given on interpretation of the results obtained.

Recommended Readings:

1. Outhwaite, William & Stephen P Turner (ed.). *The Sage Handbook of Social Science Methodology*, London: Sage, 2007.
2. Zina, O'Leary. *The Essential Guide to Doing Research*, New Delhi: Vostaar Publications, 2004.
3. Ghosh, B N. *Scientific Methods and Social Science Research*, New Delhi, 1987.
4. Johnston, J. *Econometric Methods*, New Delhi: McGraw – Hill (latest edition).
5. Box, George & P Jenkins, G M & Reinsel, G C, *Time Series Analysis*, Delhi: Pearson, 2007 (3rd edition)
6. Stock, J H and Watson, M W, *Introduction to Econometrics*, Delhi Pearson, 2003.

PAPER II: COMPUTER APPLICATIONS

Objectives:

The steady advancement of econometrics and other quantitative techniques has facilitated the empirical estimation of economic theories and models. Computers have made the estimation of large-scale economic models easy. Apart from this, the rapid growth of information technology has made the knowledge of computer essential. A rigorous training in computer would enable the students to enhance their ability to contribute more in their working life.

Outcome:

The scholars and students have taken computer application very seriously in view of its not only immediate academic use but also its rapidly increasing use in other areas. Many ex-students have found it very productive in multiple spheres of their action space.

Unit I: Computer Basic

1. Computer Fundamental

Hardware and Software. Functional units comprising a typical computer configuration: input/output, fixed and removable data storage, internal storage, control and arithmetic/logic unit. The concepts relating to execution speed, data access times, storage capacities and similar comparative aspects of hardware performance.

Operating Systems, Windows, Linux etc. Application software, role and functions of commonly available applications

Computer Network Concept- Data communication and network terminology, IP address and its significance, Internet, Multimedia, WWW, FTP, E-mail, Web pages. Concept of VPNs, Corporate Networks. Concept of Network security and management.

2. Computer Application

2.1 Microsoft word

Creating and editing documents, formatting text and paragraph, formatting documents, creating and formatting tables, illustration documents with graphics, creating a web page, mail merge and document merging, working with styles and templates, developing multi-page documents, integrating word with other applications, exploring advance graphics, building forms, working with charts and diagrams

2.2 Microsoft Excel

Building and editing worksheets, formatting a worksheet, working with charts, working with formulas and functions, managing workbooks and preparing them for the web, automating worksheet tasks with macros, using lists, analyzing list data, enhancing charts and worksheets Using analysis tools, analyzing data with pivot tables, exchanging data with other programs.

2.3 Microsoft PowerPoint

Creating a presentation with Microsoft PowerPoint, modifying a presentation, inserting objects into presentation, finishing a presentation, working with advanced tools and masters, enhancing charts, inserting illustration, objects and media clips, using advanced features.

Unit II: Statistical Analysis

The analysis will be done with the help of SPSS, ILIWS and other statistical packages. The syllabus includes the following topics:

Descriptive: Mean, median, mode, standard deviation using SPSS

Correlation, Regression

Test – T, Z, χ test

ANOVA

Unit III: RS/GIS

Application of Remote Sensing (RS) software and Geographical Information system (GIS) software

Recommended Readings:

1. Goel, Anita. *Computer Fundamentals Publisher*. Pearson. 2010
2. Rajaraman, V. and Niharika Adabala. *Fundamentals of Computers*. PHI. 2014
3. Johnson, Steve. *Microsoft Office 2010 on Demand*. Pearson. 2011
4. Field, Andy. *Discovering Statistics using IBM SPSS Statistics*. Sage Edge. 2017