Central University of South Bihar

School of Social Sciences and Policy

Centre for Economic Studies and Policies (CESP)

Syllabus for Ph.D. Programme in Economics

Syllabus for Ph.D. Course Work in Economics

Duration: Two Semesters

Course Structure

Course Code	Course Title	Credits
ECO 901	*Research Methodology*	*4*
ECO 902	*Tools and Techniques of Research*	*4*
ECO 903	*Preparation & Presentation of Research Proposal*	*4*
Total Credits		*12*

ECO 901: Research Methodology

Part-A (2 Credits)

Unit I: Research: A Conceptual Framework

- Research: Its Meaning and Concept
- Knowledge, Facts, Principles, Theories and Research as source of knowledge
- Scientific method of inquiry and basic steps of research
- Types of research: Basic, Applied and Action Research
- Ethics in Research
- Methods and Methodology
- Intellectual Property Rights

Unit II: Computer Applications

- Word Processing, Data Processing, Graphical Processing, Use of Web tools for Research, Use of Multimedia Tools.

Part B (2 Credits)

Unit III: Data Collection & Designing a Survey:

Nature of Data – Primary and Secondary; Quantitative and Qualitative; Features of Cross Section, Time Series and Panel Data; Measurement Scales; Objectives of the socio economic field surveys; Sampling strategy; Implementing the surveys – questionnaire design; Data preparation using software for analysis.

Unit IV: Database Issues Relating to Indian Economy:

Different data sources and their characteristics - C.S.O., National Sample Surveys, National Accounts Statistics, National Family Health Surveys, Indian Public Finance Statistics, R.B.I. publications, World Bank and IMF databases, UNCTAD*STAT*., CMIE databases, Annual Survey of Industries, Census and other government publications. Limitations of existing databases of India – Reliability and inter-temporal comparability of data.

Readings:

- Chandrasekhar, C P & Jandhyala B G Tilak (eds.) (2001), *India's Socio-Economic Database: Survey of Selected Areas*, Tulika, New Delhi.
- de Vaus, D. (2001). Research Design in Social Research. Thousand Oaks, CA: Sage Publications.
- Desai, Vandana & Robert B Potter (eds.) (2006), *Doing Development Research*, Sage Publications, New Delhi.
- Devereux, Stephen & John Hoddinott (eds.) (1993), *Fieldwork in Developing Countries*, Lynne Rienner Publishers, Boulder, Colorado.
- Fink, Arlene & J Kosecoff (1998), *How to Conduct Surveys: A Step by Step Guide*, Sage, UK.
- Groves, R. M., Fowler, F. J., Couper, M. P., Lepkowski, J. M., Singer, E. and Tourangeau, R. (2009). *Survey Methodology*. Hoboken, New Jersey: Wiley.
- *Journal of Development Economics*, Vol. 44, No. 1, 1994 (Special Issue on Database for Development Analysis, edited by T N Srinivasan).
- Kothari, C. R. (2004). *Research Methodology: Methods and Techniques.* (2nd ed.) New Delhi: New Age International (P) Ltd.
- Mitchell, M. L. & Jolley, J. M. (2010). *Research Design Explained* (7th ed.) US: Wadsworth, Cengage Learning.
- Somekh, B and C Lewin (2005), *Research Methods in Social Sciences*, Vistaar Publications, New Delhi.
- Vander Stoep, S. W & Deirdre D. J. (2009). *Research methods for everyday life: blending qualitative and quantitative approaches* San Francisco: John Wiley & Sons ISBN 978-0-470-34353-1

ECO 902: Tools and Techniques of Research

About the Course: This course will familiarize the students with various tools and techniques of research in economics. It will discuss the issues relating hypothesis formation and testing of hypotheses. The course will also help to develop skills for econometric analysis of various types of data. The students will be provided hands-on-training towards applications of some econometric software packages for analysis of data.

Unit I: Inferential Statistics: Review of Probability Theory and Distribution; Tests of Hypotheses- Basic definitions, Tests based on z, t, F and Chi-square statistic.

(5 hours)

Unit II: Classical Linear Regression Model - Stages in Empirical Research, Assumptions of CLRM and Estimation (OLS and GLS); Regression Diagnostics and Specification: Misspecification; functional forms; model selection; Applications using a software package.

(10 hours)

Unit III: Time Series Regression - Stationarity, Random Walk/Unit Root test, Estimating ARIMA Models; ARMA Equation Diagnostics; Multivariate Time Series: VAR, Cointegration; Volatility Models: Univariate and Multivariate GARCH Models; Applications using a software package.

(10 hours)

Unit IV: Panel Data Models - Pooled Cross Section models, Panel Data Models: Fixed Effects (FE) and Random Effects (RE) Estimators; Introduction to Dynamic Panel Data Model. Applications using a software package.

(6 hours)

Unit V: Models of Limited Dependent and Qualitative Variables - Logit, Probit, Tobit, and Truncated Models; Applications using a software package.

(5 hours)

Unit VI: Multivariate Analysis and Indexing: Factor analysis; Principal component analysis.

(4 hours)

Readings:

- Badi H Baltagi, *Econometric Analysis of Panel Data*, John Wiley & Sons, United Kingdom, 2008.
- Bhaumik, S. K. (2015), *Principles of Econometrics: A Modern Approach Using EViews*, Oxford University Press, New Delhi.
- Brooks, Chris, *Introductory Econometrics for Finance*, 3rd edition, Cambridge University Press, 2015.
- Enders, Walter (2012), *Applied Econometric Times Series.* (3rd edition). Wiley
- Field, Andy., Jeremy Miles and Zoë Field (2012), *Discovering Statistics* with *R.* Sage
- Gujarati, D. (2011). *Econometrics by Example.* Palgrave-Macmillan
- M. Verbeek, (2004). A Guide to Modern Econometrics, 2nd ed.
- Maddala and Lahiri, Introduction to Econometrics (2009). John Wiley & Sons
- Mukherjee, Chandan, Howard White and Marc Wuyts, (1998), Econometrics and Data Analysis for Developing Countries. Taylor & Francis.
- Newbold, Paul et al., *Statistics for Business and Economics*, 8th edition, Pearson, England, 2013.
- Spencer, N H, *Essentials of Multivariate Data Analysis*, CRC Press, New York, 2014.
- Tsay, Ruey S., *An Introduction to Analysis of Financial Data with R*, Wiley, 2013

- Tsay, Ruey S., *Multivariate Time Series Analysis: with R and Financial Applications*, Wiley, 2014
- Wooldridge, J.M. (2010). *Econometric Analysis of Cross Section and Panel Data*. MIT Press.

ECO 903: Preparation and Presentation of Research Proposal

The course intends to develop writing and oral presentation skills of PhD scholars during the course of preparation of their respective research proposal. This paper would consist of two parts:

Part I - Preparation of Research Proposal:

Literature Survey, Identification of the topic for Ph.D. research and preparation of research proposal in the standard format as per university guidelines.

Part II - Oral Presentation of Research Proposal

The research proposal on the topic chosen by the candidate for her/his Ph.D. shall be submitted as per the writing discipline followed by seminar presentation. Each student shall be required to articulate in about 5000 words her/his individual subject of study in the intended area of research by selected bibliography. The written submission on the chosen topic shall be evaluated for 75 percent weightage and the seminar presentation for 25 percent weightage. The research proposal is supposed to give evidence of two things: a comprehensive review of existing literature of the past studies in the subject-area and the student's awareness of and adherence to the discipline of writing research proposal/paper/dissertation and documentation.