

GURU GOBIND SINGH INDRAPRASTHA UNIVERSITY
UNIVERSITY SCHOOL OF HUMANITIES AND SOCIAL SCIENCES

Ph.D. COURSE WORK OUTLINE & SCHEME OF EXAMINATION FOR
ECONOMICS

SEMESTER –I

S No	Course Code	Paper ID	Title of the course	Teaching Hours Per Week			Credits	Mode of Examination
				L	T	P/S		
1			Research Methodology	3	1		4	University Exams
2			Economics of Gender, Education, Labour and Development	3	1	-	4	University Exams

SEMESTER – II

S No	Course Code	Paper ID	Title of the course	Teaching Hours Per Week			Credits	Mode of Examination
				L	T	P/S		
1			Applied Econometrics	3	1	-	4	University Exams
2			Seminar Course				3	NUES Seminar Based Evaluation

Total Credits: 15

SCHEME OF EXAMINATION

Ph.D. Course work (Economics)

- The student shall be evaluated for each paper on continuous basis through internal and external evaluation respectively.
- The internal evaluation for each paper shall be for 25 marks as detailed below:
 - Minor-I (Theory Exam): 20 Marks
 - Internal Assessment (Assignments/ Viva): 05 Marks

i. Total: 25 Marks
- The external evaluation for each paper, except NUES papers, shall be based on end-term theory exam each paper carrying 75 marks.
- Minimum credits required for successful completion of the Ph.D. course work would be 15 Credits.

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Syllabus: Ph.D. (Economics)

(Semester- I)

Paper Code:

Nomenclature of the Paper: Research Methodology

Internal Marks: 25

Lectures-3 Tutorial-1

Total Credit -4

External Marks: 75

Objectives: The course is designed to review the statistical concepts and theory. The course prepares students to frame research hypotheses, conduct theoretical and empirical research, application of economic theory, use the available economic literature and data sources. The students would also be provided training on requisite statistical concepts and software

Unit I: Descriptive Analysis and Applied Probability Theory

Graphical Analysis – Descriptive Statistics – Applied Probability Distributions: Discrete and Continuous – Binomial – Poisson – Negative Binomial – Normal – Exponential – Uniform – Gamma – Beta – Joint Probability Distribution – STATA/SPSS/R

Unit II: Sampling and Sampling Distribution: Methods and Applications

Review – Applications of Sampling Techniques: Probability and Non-Probability – Sampling Distribution – Point Estimation – Interval Estimation – STATA/SPSS/R

Unit III: Empirical Statistical Inference and Asymptotic Evaluation

Hypothesis testing – Parametric and Non-parametric Tests – ANOVA – MANOVA – Asymptotic Evaluation – Normal and Non-Normal Population – STATA/SPSS/R

Unit IV: Research Methodology, Ethics and Data Sources

Research design – Research problem formulation – Literature review – Research hypotheses – Research proposal – Research ethics – Primary data – Reliability and Validity – Secondary data – Data sources and processing: NSSO, Census, DLHS, NFHS, NSSO, IHDS, World Bank, IMF, RBI, BSE, NSE, CMIE – STATA/SPSS/R

Suggested Readings:

Kothari, C.R. (2015). *Research Methodology: Methods and Techniques*, 3rd Edition reprint, New Age International Publishers

Cooper D. and Schindler P. *Business Research Methods*, Tata McGraw Hill. Sultan Chand & Sons.

Rabe-Hesketh, S. and Everitt, B.S. (2007). *A Handbook of statistical analysis using Stata*, 4/e. Chapman & Hall.

The Belmont Report (1978) *Ethical principles and guidelines for the protection of human subjects of research*.

Knapp, H. (2014). *Introductory Statistics Using SPSS*, SAGE Publications India Private Ltd.

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16/4/21

Cunningham, J.B. and Aldrich, J.O. (2014). *Using SPSS- An Interactive Hands-On Approach*, SAGE Publications India Private Ltd.

Crawley, M. J. (2012). *The R Book*. 2nd Ed., John Wiley & Sons.

Dalgaard, P. (2008). *Introductory Statistics with R*. 2nd Ed., Springer.

Voss, J. (2014). *An introduction to statistical computing: a simulation-based approach*, Wiley series in computational statistics

Ramachandran, K. M. & Chris, P. T (2009), *Mathematical Statistics with Applications*, Elsevier Academic Press.

Casella, G. and Berger, R.L. (2002), *Statistical Inference*, Cengage Learning

Wooldridge, J. M. (2016), *Introductory Econometrics: A Modern Approach*, South-Western College Publishers.

Journal Articles:

Uprichard, E. (2013). Sampling: Bridging probability and non-probability designs. *International Journal of Social Research Methodology*, 16(1), 1-11.

Howell, C. R., Su, W., Nassel, A. F., Agne, A. A., & Cherrington, A. L. (2020). Area based stratified random sampling using geospatial technology in a community-based survey. *BMC public health*, 20(1), 1-9.

Valerio, M. A., Rodriguez, N., Winkler, P., Lopez, J., Dennison, M., Liang, Y., & Turner, B. J. (2016). Comparing two sampling methods to engage hard-to-reach communities in research priority setting. *BMC medical research methodology*, 16(1), 1-11.

Snyder, H. (2019). Literature review as a research methodology: An overview and guidelines. *Journal of Business Research*, 104, 333-339.

(Any other reading material provided by the instructor)

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(Semester- I)

Paper Code:

Lectures-3 Tutorial-1

Nomenclature of the Paper: Economics of Gender, Education, Labour and Development

Mode of Exam: UES

Total Credit – 4

Internal Marks: 25

External Marks: 75

Objective: The course would cover theoretical and empirical topics in economics of gender, education, labour and related development issues. The course would relate theory to applied issues. The course would introduce the students to some recent empirical approaches in gender, labor and education economics. The students would be exposed to important theoretical and applied topics in areas such as economics of gender, and household, labor supply theory, human capital investment, wage differentials, discrimination in labor markets, signaling approach to education and the education production function.

Unit I: Recent Empirical Approaches in Development Economics

Linear Regression – Fixed Effects – Instrumental Variable Estimation – Local Average Treatment Effects – Randomized Control Trials – Differences-in-Differences

Unit II: Gender Economics and Development

Source of Gender Differences– Household as Economic Unit – Allocation of time between Household and Labour Market – Gender Segregation at Workplace – Discrimination – Human Capital Model of Investment – Gender Budgeting

Unit III: Labour Economics and Development

Static Labour Supply – Intertemporal Labour Supply – Labour Market Discrimination – Labour Unions – Empirical Estimates of Labour Supply Relations

Unit IV: Returns to Education and Development

Returns to Education: Private and Social – Signaling Approach to Education – Education Production Function – School Quality and Peer Effects

Suggested Readings:

Angrist, J. D., & Pischke, J. S. (2009). *Mostly harmless econometrics* (Princeton, NJ).

Blau, F.D., Ferber, M.A., & Winkler, A.E. (2014). *The Economics of women, men and work* (7th Ed.). Englewood Cliffs, N.J. : Prentice-Hall

Jacobsen, Joyce, P. (2007). *The Economics of Gender* (3rd Ed.). Blackwell Publishing Ltd., Victoria, Australia

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16/4/21

Becker, Gary. (1971). *The Economics of Discrimination*. University of Chicago Press, Chicago.

Cahuc, P., Carcillo, S., & Zylberberg, A. (2014). *Labor economics*. MIT press.

Handbook of Labor Economics (relevant volumes)

Handbook of Economics of Education (relevant volumes)

Articles

Zhao, C., & Qu, X. (2021). Peer effects in pension decision-making: evidence from China's new rural pension scheme. *Labour Economics*, 69, 101978.

Li, Y., & Guo, G. (2021). Peer influence on obesity: Evidence from a natural experiment of a gene-environment interaction. *Social Science Research*, 93, 102483.

Pager, D. (2007). The use of field experiments for studies of employment discrimination: Contributions, critiques, and directions for the future. *The Annals of the American Academy of Political and Social Science*, 609(1), 104-133.

Angrist, J. D., & Krueger, A. B. (1999). Empirical strategies in labor economics. In *Handbook of labor economics* (Vol. 3, pp. 1277-1366). Elsevier.

Krueger, A. B., & Lindahl, M. (2001). Education for growth: Why and for whom?. *Journal of economic literature*, 39(4), 1101-1136.

Blundell, R., & MaCurdy, T. (1999). Labor supply: A review of alternative approaches. *Handbook of labor economics*, 3, 1559-1695., Chapter 27

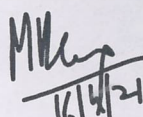
Angrist, J. D., & Keueger, A. B. (1991). Does compulsory school attendance affect schooling and earnings?. *The Quarterly Journal of Economics*, 106(4), 979-1014.

Duflo, E. (2001). Schooling and labor market consequences of school construction in Indonesia: Evidence from an unusual policy experiment. *American economic review*, 91(4), 795-813.

Hanushek, E. A. (1986). The economics of schooling: Production and efficiency in public schools. *Journal of economic literature*, 24(3), 1141-1177.

Sacerdote, B. (2001). Peer effects with random assignment: Results for Dartmouth roommates. *The Quarterly journal of economics*, 116(2), 681-704.

(Any other reading material provided by the instructor)


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(Semester- II)

Paper Code:

Nomenclature of the Paper: Applied Econometrics

Internal Marks: 25

Lectures-3 Tutorial-1

Total Credit -4

External Marks: 75

Objectives: The course is designed to provide insights and understanding for the analysis of different types of data structures. It would familiarize the students to apply various econometric techniques and concepts to conduct theoretical and empirical research.

Unit I: Economic Applications of Cross Section Data

Simple regression – Multiple Regression – CLRM Assumptions: Violation and Remedial – Estimation – Inference – Functional forms – Variable Scaling – Dummy Independent Variables – STATA/SPSS/R

Unit II: Economic Applications of Time Series

Stationarity – ARMA model – ACF and PACF– Unit Root – Box Jenkins Model Selection – Multiple Time Series Analysis – VAR –Impulse Response Functions – Cointegration – STATA/SPSS/R

Unit III: Economic Applications of Panel Data

Introduction – Fixed Effects – Random Effects – Assumptions – Estimation – Inference – Generalized Method of Moments – STATA/SPSS/R

Unit IV: Extension to Econometric Applications: Estimation and Identification

Limited Dependent Variable: LPM, Logit and Probit – Multinomial Logit and Tobit – Simultaneous Equation Models – Endogeneity – Identification strategies – Factor Analysis – Principal Component Analysis – Social Accounting Matrices – Input-Output Tables – STATA/SPSS/R

Suggested Readings:

Cameron, A.C. & Trivedi, P.K. (2009). *Microeconometrics: Methods and Applications*. Cambridge University Press

Kennedy, P. (2008). *A guide to econometrics*. John Wiley & Sons.

Nachane, D. M. *Econometrics: Theoretical Foundations and Empirical Perspectives*, Oxford University Press.

Brooks, C. (2019). *Introductory econometrics for finance*. Cambridge university press.

Angrist, J. D., & Pischke, J. S. (2009). *Mostly harmless econometrics* (Princeton, NJ).

Walter Enders, *Applied Econometric Time Series*, Wiley.

M. K. Singh
16/4/21

Wooldridge, J. M. (2002). *Econometric Analysis of Cross-section and Panel Data*, MIT Press, Cambridge, Mass.

Desai, Meghanand. *Applied Econometrics*, McGraw Hill.

Rabe-Hesketh, S. and Everitt, B.S. (2007). *A Handbook of statistical analysis using Stata*, 4/e. Chapman & Hall.

Knapp, H. (2014). *Introductory Statistics Using SPSS*, SAGE Publications India Private Ltd.

Cunningham, J.B. and Aldrich, J.O. (2014). *Using SPSS- An Interactive Hands-On Approach*, SAGE Publications India Private Ltd.

Crawley, M. J. (2012). *The R Book*. 2nd Ed., John Wiley & Sons.

Dalgaard, P. (2008). *Introductory Statistics with R*. 2nd Ed., Springer.

Gardener, M. (2012). *Beginning R: The Statistical Programming Language*, Wiley Publications.

Bun, M. J., & Harrison, T. D. (2019). OLS and IV estimation of regression models including endogenous interaction terms. *Econometric Reviews*, 38(7), 814-827.

Pomeranz, D. (2017). Impact evaluation methods in public economics: A brief introduction to randomized evaluations and comparison with other methods. *Public Finance Review*, 45(1), 10-43.

Voss, J. (2014). *An introduction to statistical computing: a simulation-based approach*, Wiley series in computational statistics

Clarke, P., Crawford, C., Steele, F., & Vignoles, A. F. (2010). The choice between fixed and random effects models: some considerations for educational research. *IZA, DP No. 5287*

Deaton, A. (2010). Instruments, randomization, and learning about development. *Journal of economic literature*, 48(2), 424-55.

Vyas, S., & Kumaranayake, L. (2006). Constructing socio-economic status indices: how to use principal components analysis. *Health policy and planning*, 21(6), 459-468.

Reinert, K., & Roland-Hoist, D. (1997). Social Accounting Matrices. In J. Francois & K. Reinert (Eds.), *Applied Methods for Trade Policy Analysis: A Handbook* (pp. 94-121). Cambridge: Cambridge University Press. doi:10.1017/CBO9781139174824.006

Subramanian, S., & Deaton, A. (1996). The demand for food and calories. *Journal of political economy*, 104(1), 133-162.

Anderson, P. M., Butcher, K. F., & Levine, P. B. (2003). Maternal employment and overweight children. *Journal of health economics*, 22(3), 477-504.

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(Semester- II)

Paper Code:

Nomenclature of the Paper: Seminar Course

Mode of Exam: NUES

Total Credit - 3

Objective:

This seminar course aims to introduce the students to build an understanding of economic literature review, research objectives, research hypothesis and research gap analysis. The course would also inculcate the basics of research ethics. The goal is to build economic understanding and empirical application of economic theories and concepts. This course would act as a foundation for Ph.D. synopsis.

Suggested Readings:

The course would focus on building the research objective and suggested methodology of the PhD candidate. The textbook and papers would thus be specific to the research domain of the student. However, listed below are some textbooks and research papers which would be helpful in general applications of different economic theories and empirical assessment.

Enders, W. (2008). *Applied econometric time series*. John Wiley & Sons.

Angrist, J. D., & Pischke, J. S. (2009). *Mostly harmless econometrics* (Princeton, NJ).

Ramachandran, K. M. & Chris, P. T (2009), *Mathematical Statistics with Applications*, Elsevier Academic Press.

Wooldridge, J. M. (2002). *Econometric Analysis of Cross-section and Panel Data*, MIT Press, Cambridge, Mass.

Chiang, A. C. (1984). *Fundamental methods of mathematical economics*.

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16/4/21