- 2nd Administrative Reforms Commission Reports
- Excerpts from Weber's Theory of Bureaucracy
- The Indian Bureaucracy by T.N. Chaturvedi
- The Steel Frame: A History of the IAS by Deepak Gupta
- The Accidental Prime Minister by Sanjaya Baru
- Ethics, Integrity and Aptitude by G. Subba Rao & P.N. Roy Chowdhury
- Challenges to Indian Bureaucracy by Yogendra Narain
- Pratap Bhanu Mehta (Essays) – On bureaucracy, state capacity, and reform in India

Semester VII

Discipline Specific Elective: DSE-II 7.4

Title of the Paper: Quantitative Methods for Research
Offered by Economics Department, College of Vocational Studies

Semester	Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
			Lecture	Tutorial	Practical/ Practice		
VII	Quantitative Methods for Research	4	3	1	0	Class 12th Pass	Nil

Course Description

The course on Quantitative Research Methods aims to help students understand different research methods, especially qualitative ones. It will teach them how to use various quantitative techniques in different research situations. The focus will be understanding quantitative methods, the based on statistical tests, and practical experience with computer tools for data analysis. This will help students think carefully about how to design research, collect and analyse data, and understand the importance of basics for studying real data.

The course offers the conceptual and methodological issues in details that go into successful conduction of a scientific research. That includes the theoretical and methodological approaches in measurement, proposing and testing hypotheses, scientific communication and the ethical issues in the practice of science

Course Objectives:

1. Understand quantitative and qualitative research methods.
2. Recognize concepts of descriptive and inferential statistics.
3. Learn central tendency and dispersion methods.
4. Interpret elementary statistics results.
5. Introduce correlation and regression analysis to students.
6. Graphically represent empirical data.
7. Familiarize students with Excel for empirical analysis.

Course Outcomes

1. Students will learn to understand and explain graphs and summary statistics in papers and reports. 2. Students will know how to choose the right average (mean, median, mode) to solve problems. 3. Students will recognize different ways to show spread and when to use them. 4. Students will understand the difference between correlation and regression and how to use them. 5. Students will be able to use tools like Excel for data analysis. 6. Students will know how to use statistical tools for education research.

Unit 1: Quantitative research methods (9 hours)

The course will begin with a brief introduction to the main ideas of quantitative, qualitative, and mixed methods. It will explain why someone might pick a quantitative or qualitative approach and when these two methods are used together. This will help students fully understand research methods.

1. Comparative study of quantitative, qualitative and mixed methods approach
2. Sampling
3. Longitudinal, cross- sectional and trend studies
4. Experimental/quasi-experimental methods
5. Designing a survey questionnaire

Unit 2: Introduction to statistics (10 hours)

This unit covers descriptive statistics, including types of variables, frequency distribution, and ways to show data with graphs. It also explains measures of central tendency and measures of spread. Students will learn how to use Excel, with practice continuing throughout the course. The unit ends by introducing students to research data sets available in India.

1. Basic descriptive statistics
2. Charts and graphs
3. Measures of central tendency
4. Measures of dispersion

Unit 3: Probability Distributions (11 hours)

This unit covers normal probability distributions, which are a key concept in statistics and form the basis for inferential statistics, z-score problems, sampling distributions, and the central limit theorem.

1. Probability distribution for discrete and continuous variables
2. The normal probability distribution
3. Sampling distribution
4. Sampling distribution of sample means

Unit 3: Correlation and Regression (12 hours)

This unit will explain bivariate linear regression in detail. Understanding this is important for learning multivariate regression later. We will begin by using a straight line to show the relationship between two continuous variables, then look at scatter plots to check if the relationship is mostly linear. Next,

we will use the least squares method to find the best-fitting line, see how data points spread around this line, and use Pearson's correlation to measure how strong the linear connection is between the variables. Finally, we will cover the basic ideas of regression analysis.

1. Correlation and covariance
2. Pearson's and Spearman's correlation coefficient
3. Linear relationships
4. Least squares prediction equation and method of least squares

UNIT 4: Research Paper (12 hours)
Forming a Research hypothesis and using inferential statistics for testing,
Components of a Research Paper. Style of writing a Research Paper and Communicating the Results and its comparison.

Readings:

- Jacobson, M., Neugeboren, R. H. (2005). Writing Economics. United States: Harvard University.(link)
- Pinker, S. (2014). The Sense of Style: The Thinking Person's Guide to Writing in the 21st Century. United Kingdom: Penguin Publishing Group.

- Creswell, J. W. (2003). Research Design: Qualitative, Quantitative and Mixed Methods Approaches. Second Edition. University of Nebraska (Chapter 1, pp.3- 26).
- Kumar, R. (2015). Research Methodology. Fourth Edition. Sage India (Chapter 12, pp. 231-248)
- Cohen, L., L. Manion and K. Morrison.(2000). Fifth Edition.Research Methods in Education.Routledge Falmer (Chapter 12, pp. 211- 225)
- ASER Centre. (2014). Middle Schools in India: Access and Quality | MacArthur Foundation Grant No. 11-99655-00-INP. (A.2: Baseline survey questionnaires)
- Converse, J. and S. Presser. (1986). Survey Questions: Handcrafting the Standardized Questionnaire, Issue 63.

- National Sample Survey (2014): Social Consumption: Education, Schedule 25.2

- Healey, J. Ninth Edition. Statistics- A Tool for Social Research, WadsworthCengage Learning, Student Copy ISBN-978-1-111-18636-4.(Chapter 2, pp. 22- 62; Chapter 3, pp. 63- 87; Chapter 4, pp. 88- 117).

- Healey, J. Ninth Edition. Statistics- A Tool for Social Research, WadsworthCengage Learning, Student Copy ISBN-978-1-111-18636-4.(Chapter 5, pp. 118- 140).

- Healey, J. Ninth Edition. Statistics- A Tool for Social Research, WadsworthCengage Learning, Student Copy ISBN-978-1-111-18636-4. (Chapter 14 to Chapter 16, pp. 368-465)
- Gujarati, D. N. (2003).Basic Econometrics, Fourth edition. McGraw-Hill. New York.(Chapter 9, pp. 297-311)
- Das, N.G. (1997). Statistical Methods, Part I, M. das and Co. (Chapter 9, pp. 309-363)

- [Unit 4 and Unit 5 will focus not so much on formulae (though they will be discussed in class); instead emphasis will be placed on learning the significance of the statistic, its interpretation and appropriate use.]

Additional Readings:

- King, B. M., Rosopa, P. J., &Minium, E. W. (2010).Statistical reasoning in the behavioral sciences.Wiley Global Education.
- King, G. R. O. Keohane& S. Verba (1994) Designing Social Inquiry.Princeton University Press.(Chapter 1, pp. 3- 32).
- Muralidharan, K. and V. Sundaram (2013).The aggregate effect of school choice:Evidence from a two-stage experiment in India. NBER Working paper 19441. Available online at http://www.nber.org/papers/w19441
- Office of Quality Improvement. (2010). Survey fundamentals: A guide to designing and implementing surveys. Pew Research Centre.Questionnaire Design. Available online at
- http://www.pewresearch.org/methodology/u-s-survey-research/questionnaire-design/#measuring-change-over-time
- Tashakkori, A. and T. Charles (1998).Mixed Methodology: Combining Qualitative and Quantitative Approaches. Sage Publications. (Part three: applications, examples and future direction of mixed model research)

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.

Semester VII

Generic Elective-GE

Service marketing for Tourism and Hospitality

Offered by Tourism Management Department, College of Vocational Studies

Credit Distribution, Eligibility and Pre-Requisite of the Course

Course Title and Code	Course Code	No. of credits	Components of the course			Eligibility Criteria	Pre-requisites of the course
			Lecture	Tutorial	Practical		
Service marketing for Tourism and Hospitality GE -7.1	GE 7.1	4	3	1	0	Pass in Class XII	NIL