



# **VIVEK UNIVERSITY**

[Estd. by Govt. of Uttar Pradesh, as per Uttar Pradesh Private Universities Act, 2019, no.21 of 2024.]  
MORADABAD ROAD, POST AGRI, BIJNOR, UTTAR PRADESH-246701, INDIA

## **Syllabus**

### **Pre-Ph.D. Course Work Education**

**Effective from Academic Session (2024-2025)**

**Course Structure and the Assessment Scheme of**  
**Pre Ph.D. Course Work Syllabus**

SN	Paper Code	Subject	Credits L:T:P	Total credit	Total marks (External + Internal)	Minimum marks to be scored for successful completion
1		Research Methodology (Common for All)	3:1:0	4	60+40	50
2		Research & Publication Ethics (Common for All)	1:1:0	2	30+20	25
3		Quantitative Methods and Computer Applications (Common for All)	3:1:0	4	60+40	50
4		Emerging Trends and Issues in Education	3:1:0	4	60+40	50
5		Field work (Seminar/ workshop/ conferences/ literature review)	0:0:4	4	(0+100)	50
Total				18	450	225

**Note: 1. A Ph.D. scholar must attain a minimum of 55% marks in aggregate.**

**2. Internal marks shall be based on assignments/class activity/case study and other academic activities provided by course instructor.**

**Programme objectives:**

1. Equip themselves with ethical issues related to Research and Publication.
2. Offer expertise, resources, and services to the community in the field of Education.
3. To contribute the advancement of knowledge and technology to enhance activities in Education.
4. Organize and conduct research (advanced project) in a more appropriate manner.

**Programme Outcomes:**

1. To provide a broad-based intellectual exploration on research, from an interdisciplinary perspective.
2. To develop knowledge in substantive areas of education and educational research.
3. To become skilled and critical readers of educational research.
4. To develop confidence in using a range of both qualitative and quantitative approaches to gather, analyse and interpret evidences.
5. To develop skills in presenting research-based evidence and argument; and gain practical experience of educational research.
6. To develop positive attitude towards field-based researches.

7. To develop willingness and readiness to do innovative researches on Indian problems, for Indian people with Indian resources.

**Programme Specific Outcomes:**

1. To develop rigorous understanding of fundamental and advanced topics in Education and related interdisciplinary fields.
2. Apply appropriate research methodology, tools & techniques for systematic investigation, data analysis and solving the problems.
3. Gain ability to apply knowledge of Education to research in real-world issues.
4. Get familiar with current research trends in various core areas of Education.
5. Leadership and self-reliance Impact leadership abilities to the students to lead and excel in their respective fields. Also, the training will make students self-reliant.

## **Paper-I: Research Methodology (Common)**

### **Course objectives:**

1. To understand some basic concepts of research and its methodologies & identify appropriate research topics.
2. Select and define appropriate research problem and parameters.

### **Course outcomes:**

1. To familiarize the research scholar with the fundamentals of scientific research.
2. To develop understanding of the basic framework of research process.
3. To develop an understanding of various research designs and techniques.
4. To identify various sources of information for existing research and data collection.
5. To develop an understanding of the ethical dimensions of conducting applied research.
6. Apply the theoretical and experimental knowledge into research work.

### **Unit-I**

- **Scientific Research:** Meaning, importance and characteristics of scientific research, validity in research, Selection and formulation of Research Problem, Research Design, Phases/stages in research; types of research- qualitative, quantitative, exponential, exploratory, empirical, descriptive, ex-post facto, case studies, historical studies, philosophical studies, quasi-experimental; ethical problems in research; constructs and variables- nature of construct and variables, concept of constructs, type of variables, continuous and categorical, constructs, observables and intervening variables; Review of literature- purpose of the review, sources of the review, preparation of index card for reviewing and abstracting.

### **Unit-II**

- **Methods of Research:** General Survey of various methods including Survey Method, Interdisciplinary Method, Case Study Method, Sampling Method, Observation Method, Interview Method, Schedule Method, Questionnaire Method, Documentary Method, Library Method, Historical Method and Scientific Method. Characteristic Features of Scientific Method; Empirical Verifiable, Cumulative, Self - Correcting, Deterministic, Ethical & Ideological neutrality (Value Free).

### **Unit-III**

- **Problem Identification and Hypothesis Formation:** Problem- meaning and characteristics of a problem, types of problem, generality and specific of problem; hypothesis- meaning and characteristics of a good hypothesis, types of hypotheses, formulating a hypothesis, ways of stating a hypothesis; testing experimental hypothesis- standard error, test of significance, level of significance, degrees of freedom, errors in hypothesis- type I, type II errors.

### **Unit-IV**

- **Sampling and Research Design:** Meaning and types of sampling; probability and non-probability sampling. Methods of drawing samples, requisites of a good sampling method, sample size, sampling error; meaning and purpose of research design, types of research design, criteria of a good research design, basic principles of experimental design.

## **Unit-V**

- **Report Writing:** Meaning and significance of report writing, types of report, steps in writing report, layout of the research report, precaution in writing research report, developing thesis report, formatting, inside citations, references and bibliography. Locating Information on a Topic of Interest, Acquiring Copies of Articles of Interest, The Nature of Scientific Variables, Conceptual Versus Operational Definitions of Variables, Levels of Measurement, Various Paradigms, The Basic Format for a Research Report, Identification of the Parts of a Research Report, Citation and Referencing Styles, Essentials of Report Writing, Aids for Writing Good Research Report

### **Suggested Reading:**

- Bagchi, Kanak Kanti (2007) Research Methodology in Social Sciences: A Practical Guide, Delhi, Abijeet Publications.
- Kothari, C.R (2004) Research Methodology: An Introduction, Delhi, New Age.
- Flyvbjerg, Bent (2001) Making Social Science Matter: Why Social Inquiry Fails and How it can Succeed Again, United Kingdom, Cambridge University Press.
- Goodde and Hatte (1952) Methods in Social Research, New York, McGraw – Hill.
- Cooper & Schindler, Business Research Methods, Tata McGraw Hill.
- Broota, K.D., Experimental Designs in Behavioural Research, New Age International.
- Singh A. K., Test Measurement and Research Methods in Behaviours Sciences, Bharti Bhawan.

## **Paper-II: Research & Publication Ethics (Common)**

### **Course objectives:**

1. To understand the philosophy of science and ethics, research integrity and publication ethics research misconduct.
2. To understand indexing and citation databases, open access publications, research metrics (citations, h-index, impact Factor, etc.), predatory and clone Journals.

### **Course outcomes:**

1. To develop an understanding of research ethics, publications misconduct and plagiarism.
2. To develop Intellectual honesty and research integrity as per committee of publication ethics.
3. To identify various sources of information for data bases and research matrices.
4. To develop an understanding of Open access publications and initiatives.
5. To understand the usage of similarity index tools.
6. Appreciate the components of scholarly writing and evaluate its quality

**I. Philosophy and Ethics:** Introduction to philosophy: definition, nature and scope, concept, branches. Ethics: definition moral philosophy, nature of moral judgements and reactions.

**II. Scientific Conduct:** Ethics with respect to science and research, Intellectual honesty and research integrity, Scientific misconducts: Falsification and Plagiarism (FFP), Redundant publication: duplicate and overlapping publication, salami slicing, Selective reporting and misrepresentation of data.

**III. Publication Ethics:** Publication ethics: definition, introduction and importance, Best practices / standards setting initiatives and guidelines: COPE, WAME, etc. Conflicts of interest, Publication misconduct: definition, concept, problems that lead to unethical behavior and vice versa, types, violation of publication ethics, authorship and contributor ship, Identification of publication misconduct, complaints and appeals, Predatory publishers and journals Practice.

**IV. Open Access Publishing:** Open access publications and initiatives, SHERPA / RoMEO online resource to check publisher copyright and self-archiving policies, Software tools to identify predatory publications developed by SPPU, Journal finder / journal suggestion tools viz. JANE, Elsevier journal Finder, Springer, Journal Suggester, etc.

**V. Publication Misconduct:** Group Discussion, Subject specific ethical issues, FFP, authorship, Conflicts of interest, Complaints and appeals: examples and fraud from India and abroad. Software tools, Use of plagiarism software like Turnitin, Drillbit, iThenticate and other open-source software tools.

**VI. Databases and Research Metrics:** Databases, Indexing databases, Citation databases: Web of Science, scopus, etc., Research Metrics, Impact factor of journal as per journal Citation report, SNP, SJR, IPP, Cite score, Metrics: h-index, g index, i10 index, altmetrics.

### **Paper-III: Quantitative Methods and Computer Applications (Common)**

#### **Course objectives:**

1. To gain familiarity about various data collection tools and techniques, data analysis and interpretation along with the application of computer and statistical software in research.
2. Application of various statistical and computer software's in research and development.

#### **Course outcomes:**

1. Analyse qualitative and quantitative data, and explain how evidence gathered supports or refutes an initial hypothesis.
2. Describe descriptive and inferential statistics techniques.
3. To apply the statistical techniques and computer software's for data analysing.
4. Develop research skills of administering research tools and data collection.
5. Able to locate the research studies available in the Internet and use of online journals and books,
6. Use computer techniques and software's for research & data analysing.

#### **Unit-I**

- **Measurement and Scaling Techniques:** Measurement in research, measurement scales sources of errors in measurement, tests of second measurement, techniques of developing measurement tools, meaning of scaling, scale classification bases, important scaling techniques, and scale construction techniques.

#### **Unit-II**

- **Data Collection, Processing and Analysis:** Methods of data collection – primary data, secondary data; primary data collection – observation method, interview method, questionnaires, schedules, guideline for constructing questionnaires/schedules, secondary data collection of, selection of appropriate method of data collection; coding, editing and tabulation of data, charts and diagrams used in data analysis, bar and pie diagrams and their significance; measures of central tendency, measures of dispersion; correlation and regression analysis - meaning and uses, methods of calculation of coefficients and their analysis and implication. sampling distribution, sampling schemes and sample sizes, confidence interval for the mean, t-statistic, z-statistic, confidence interval for the population variances, hypothesis testing, test of hypothesis for the population mean, population variance and ratio of two population variances; applications of z-test, t-test, f-test and chi-square test, association of attributes and techniques of testing, ANOVA.

#### **Unit-III**

- Fundamental knowledge of computer, statistical software and their application, application of statistical tests/techniques through the use of statistical software like SPSS, scientific packages like LISREL, AMOS, and SYSTAT for documentation and report generation.

#### **Unit-IV**

- **Introduction to MS-Office:** MS-WORD, MS-EXCEL, MATLAB, LATEX, MINITAB, R-programming. Applications of AI & ML in research.

**Suggested Reading:**

- Power Analysis for Experimental Research: A Practical Guide for the Biological, Medical and Social Sciences by R. Barker Baushell, Yu-Fang Li, Cambridge University Press.
- Chandan J. S., Statistics for Business and Economics, Vikas Publications.
- Broota, K.D., Experimental Designs in Behavioral Research, New Age International.
- Singh A. K., Test Measurement and Research Methods in Behavioral Sciences, Bharti Bhawan.
- Joyce Cox & Polly Urban, Microsoft Office, Galgotia Publishing.
- Sinha P.K., Computer Fundamentals, BPB Publishing.
- LaTeX: A Document Preparation System, 2/E Pearson Low Price Edition by Lamport.
- MATLAB: An Introduction with Applications by Gilat, Wiley India Pvt. Ltd.
- Getting Started with MATLAB by Rudra Pratap, Oxford University Press.



## **Paper- IV Emerging Trends and Issues in Education**

### **Course objectives:**

The main objectives of this paper are:

1. To acquire knowledge of new emerging research areas or dimensions in Education.
2. To develop power of critical thinking in particular area or issue.
3. To demonstrate the skill of tool construction.
4. To demonstrate their abilities to discuss on original academic research topics.
5. To show sufficient confidence in term of his/ her knowledge, ideas and skills during presentation of research works.

### **Course outcomes:**

1. Inculcating information about the regulations, policies, status and guidelines that govern the conduct of research.
2. Understanding the issues and trends in Teacher Education.
3. Understanding statistical techniques.
4. Understanding interdisciplinary approach in teaching and learning.

### **Unit-I**

- Interdisciplinary approaches - concept, need and scope
- Interdisciplinary Approach in Education
- Interdisciplinary approach in Teaching
- Interdisciplinary approach in Learning
- Interdisciplinary approach in Research

### **Unit- II**

- Approaches of Learning
- Lifelong Learning
- Open and Distance Learning
- Co-operative Learning
- Blended Learning
- Flexi Space Learning
- Reflective Learning

### **Unit- III**

- Processes of Learning
- Inquiry Based Learning
- Brain Based Learning
- Media literary and Learning

### **Unit -IV**

- Trends in Education
- Inclusive Education
- ICT in Education
- Life Skill Education
- Multicultural Education
- Alternative Assessment
- Social Constructivism

## **Unit -V**

- Issues in Education
- Educational Policies
- Wellbeing Education
- Comparative Education
- Development Education
- Citizenship Education
- Economics of Education

## **Unit- VI**

- Globalization and Education
- Differences between globalization, internationalization, and internationalism ,Paradoxes of globalization
- Global Policies in Education. EFA. MDGs.
- Globalization and educational reform

## **Suggested Readings:**

- Shavelson, R. J., & Towne, L. (Eds.) (2002). Scientific research in education. Washington, DC: National Research Council, National Academy Press.
- Israel, M. (2014). Research Ethics and Integrity for Social Scientists. Beyond Regulatory Compliance, Sage publ., pp.18-19.
- Best, J. &. (2011). Research in Education. New Delhi: PHI Learning Pvt. Ltd.
- Blass C, & Higson, C (2004). Fundamentals of Social Research Methods (3rd ed),. Lusaka: Juta
- Flick, U. (2009). An Introduction Qualitative Research, London: Sage, pp39-45
- Hilliday, A. (2002). Doing and Writing Qualitative Research. New Delhi: Sage Publications.
- James Arthur, M. W. (2013). Research Methods and Methodologies in Education. London: Sage Publications.
- Kelinger, F. N. (1979). Foundations of Behavioural Research. New York: Wadsworth Publishing Co Inc
- Mark, R. (1996). Research Made Simple: A Handbook for Social Workers, Thousand Oaks, C.A.: Sage Publication
- George, Darren and Mallery, Paul (2013). SPSS for Windows-Step by Step: A Simple Guide and Reference 17.0 Update, 10th Edition, Pearson