

**Department of Science Education
Institute of Education & Research
University of the Punjab, Lahore
Course Outline**



Programme	BS Science Education	Course Code	SE-401	Credit Hours	03
Course Title	Research Methods in Education				
Course Introduction					
This course is an introduction to educational research and methods used in the study of educational settings and institutions. One of the major purposes of this course is to familiarize students with basic methods and techniques for designing, conducting, and analysing research in education. Emphasis is on developing appropriate and researchable questions, reviewing the literature critically, and planning cogent research. Equal attention will be paid to the process of instrument development (e.g. attitude scale, questionnaire) so that valid and reliable data can be produced and subsequently analysed. The second major purpose of this course is to build up a solid knowledge base on which selection of an appropriate statistical tool from a variety of parametric and non- parametric procedures can be made.Extensive emphasis will be placed on using the most modern Information and Communication Technology (ICT) tools for locating information resources and for communicating and sharing research knowledge with fellow student's and other professionals. Thus tools such as The World Wide Web, Electronic Data Bases, and Electronic Search Engines are integral part of this course.					
Learning Outcomes					
On the completion of the course, the students will: 1. Understand and describe the importance and use of educational research. 2. Identify and discuss the major types of research methodologies. 3. Identify and conceptualize research question and problem statements. 4. Review and evaluate relevant literature. 5. Formulate and state the hypotheses. 6. Describe techniques related to sampling, statistical analysis, and research design. 7. Develop data collection instruments commonly used in research in education. 8. Define and discuss the concept of validity and reliability. 9. Analyse and interpret statistical data. 10. Use the ICT tools to communicate and access informational resources. 11. Develop a research proposal. 12. Write and evaluate a research report/article.					
Course Content					
Week 1	Unit -1: Introduction to Educational Research				
	1.1	Meaning and definition of Educational Research			
	1.2	The Scientific Method			
	1.3	Purposes and features of research			
	1.4	Application of the Scientific Method in Education			
	Unit -2: Approaches and Classification of Research				
	2.1	Different Approaches to Educational Research			
	2.2	Classification of Research by Method			
	2.3	Classification of Research by Purpose			
Week 2	2.4	The Ethics for Educational Research			
	Unit-3: Research Problem				
	3.1	Identification and Selection			
	3.2	Sources			

	3.3	Characteristics/ Criteria
	3.4	Statement
	Unit-4: Research Hypotheses or Questions	
	4.1	Definition and Purpose
	4.2	Characteristics
	4.3	Types of Hypotheses
	4.4	Stating a Research Hypothesis/Question
Week 3	Unit-5: Review of Related Literature	
	5.1	Definition, purpose, and scope
	5.2	Preparation
	5.3	Sources
	5.4	Abstracting
	5.5	Reporting
Week 4	Unit-6: Sampling	
	6.1	Definition and purpose
	6.2	Techniques of Sampling
	6.3	Probability Sampling Techniques
	6.4	Random Sampling
	6.5	Stratified Sampling
Week 5	6.6	Cluster Sampling
	6.7	Systematic Sampling
	6.8	Non-Probability Sampling Techniques
	6.9	Convenience Sampling
	6.10	Purposive / Judgmental Sampling
	6.11	Snowball Sampling
	6.12	Quota Sampling
Week 6	Unit-7: Research Instruments	
	7.1	Purpose of research instruments
	7.2	Characteristics of research instruments
	7.3	Validity
	7.4	Reliability
	7.5	Usability
Week 7	7.6	Construction of instrument
	7.7	Questionnaire
	7.8	Observation Scale
	7.9	Rating Scale
	7.10	Tests (and their types)
Week 8	Presentation and Quiz	
	Mid Term Exam	
Week 9	Unit-8: Research types (Detail description)	
	8.1	Survey Research
	8.2	Correlational Research
	8.3	Causal Comparative Research
	8.4	Experimental Research
Week 10	8.5	Narrative Research
	8.6	Ethnographic Research
	8.7	Case Study
	8.8	Mixed Method Research
Week 11	Unit-9: Collection and analysis of data	
	9.1	Data Collection
	9.2	Scoring, coding, tabulation of data
	9.3	Data Analysis

	9.4 Data Interpretation
Week 12	Unit-10: Statistics in Educational Research
	10.1 Need of statistical analysis
	10.2 Levels of measurement
	10.3 Descriptive statistics
	10.4 Inferential statistics
	10.5 Parametric tests
	10.6 Non-parametric tests
Week 13	Unit-11: Writing Research Proposal and Report
	11.1 General Rules for Writing and Typing
	11.2 Format and Style
	11.3 Types of Research Reports
	11.4 Theses and dissertations
	11.5 Journals article
Week 14	Unit-12: APA Style (Citations and References list)
Week 15	Presentation and Quiz
Week 16	Revision and Final Term Exam
Textbooks and Reading Material	
1. Creswell, J. W. (2014). <i>Research design: Quantitative, qualitative and mixed methods approaches</i>. Sage Publications. 2. Creswell, J. W. (2012). <i>Research design: Planning, conducting, and evaluating Quantitative, qualitative research</i>. Pearson. 3. Fraenkel, J. R., Wallen, E. N., & Hyun, H. H. (2012). <i>How to design and evaluate research in education</i>. McGraw-Hill. 4. Gall, M. D., Gall, J. P., & Borg, W. R. (2003). <i>Educational research: An introduction</i>. Pearson 5. Gay, L.R. (2012). <i>Educational research: competencies for analysis and application</i>. Macmillan Publishing Co. 6. Johnson, B., & Christensen, L. (2012). <i>Educational research: Quantitative, qualitative and mixed approaches</i>. Sage Publications. 7. Anderson, G., & Arsenault, N. (1998). <i>Fundamental of educational research</i> (2nd ed.). The Falmer Press. 8. Abell, N., Springer, D. W., & Kamata, A. (2009). <i>Developing and validating rapid assessment instrument</i>. Oxford University Press. 9. Babbie, E. (2010, 2007). <i>The practice of social research</i>. Wadsworth Cengage 10. Cohen, L., Manion, L., & Morrison, K. (2007). <i>Research methods in education</i> (5th ed.). Routledge. 11. Ridley, D. (2012). <i>The literature review: A step-by-step guide for students</i>. Sage Publications	
Teaching Learning Strategies	
The teaching and learning strategies will focus on constructivist learning approach. These strategies will be diverse in line with the course contents. Therefore, these strategies will include but not limited to cooperative learning, collaborative learning, teacher and students led discussions, individual and group presentations, reflective practices and classroom activities.	
Assignments: Types and Number with Calendar	
• Class presentations, Quizzes. • Two assignments before mid-term exam. • Two assignments after mid-term exam.	