

ZOOL-308

RESEARCH METHODOLOGY Cr. (2+0)

Course Objectives:

The course is aims at how to approach the solution of a problem.

1. To develop research skills Provide understanding how to design scientific research,

- to collect data and its interpretation
2. To emphasize the importance of ethics in scientific research
 3. To enable students to write a research proposal

Course Learning Outcomes:

On completion of this course, the students should be able to:

1. **UNDERSTAND** a general definition of research design.
2. **IDENTIFY** the overall process of designing a research study from its inception to its report.
3. **FAMILIARIZE** with ethical issues in educational research, including those issues that arise in using quantitative and qualitative research.
4. **KNOW** the primary characteristics of quantitative research and qualitative research.
5. **IDENTIFY** a research problem stated in a study.
6. **FAMILIARIZE** with how to write a good introduction to an educational research study.
7. To **DISTINGUISH** a purpose statement, a research question or hypothesis, and a research objective.

Course Contents:

1. Introduction:

- Objectives of Research, Motivations

2. Research Process:

- Research methods vs. research methodology, scientific method
- Types of research, general steps involved in research
- Problems of research in Pakistan

3. Topic Selection:

- Problem identification for research, criteria and evaluation

4. Literature review:

- Importance and sources
- Referencing and citation and Bibliography
- plagiarism

5. Research Design:

- Parts, important features, important concepts in research design

6. Aims and objectives:

- Research objectives, qualities of research objectives

7. Material and methods:

- Bioethics, sampling, data collection and data analysis, sampling requirements, scales of measurement, error of measurement and its sources

8. Data Analysis:

- Processing, statistics in research, hypothesis testing, t-tests and ANOVA

9. Scientific Writing:

- Difference between thesis/report/synopsis/research proposal
- Parts of synopsis/project proposal, parts of thesis/report

10. Budgeting: Cost estimates for a research project, funding sources e.g. USAID, HEC, DoST, HED, PMRC, WWF, PSF etc.

Teaching-Learning Strategies

Teaching will be a combination of class lectures, class discussions, and group work. Short videos/films will be shown on occasion.

Assignments

The sessional work will be a combination of written assignments, class quizzes, presentation, and class participation/attendance.

Assessments and Examination

Sessional Work: 25 marks

Midterm Exam: 35 marks

Final Exam: 40 marks

Text and Reference Books:

1. Paul Leedy, 2004, Practical Research: Planning and Design (8th Edition), Jeanne Ellis Ormrod
2. Creswell, J. W. (2013). Research Design Quantitative Qualitative and Mixed Methods Approaches. Sage.
3. Hess-Biber, S. N. and P. Leavy. (2004). Approaches to Qualitative Research, A Reader on Theory and Practice. New York, Oxford University Press.
4. Khan, J.A. (2008). Research Methodology. New Delhi: APH Publishing.
5. Kothari, C.R., & Gaurav, G. (2014). Research Methodology: Methods and Techniques. New Delhi: New Age International.
6. Kumar, R. (2011). Research Methodology: A Step By Step Guide for Beginners. Cornwall: SAGE Publications, Inc.
7. Laurel, B. (2003). Design Research, Methods and Perspectives. London England, The MIT Press.
8. Walliman, N. (2005). Your Research Project, 2nd Edition, A step by step guide for the first-time researcher. New Delhi, Vistaar Publications.