

SEMESTER – III
PIMAF20 - INDEPENDENT ELECTIVE 3 B: FUNDAMENTALS OF RESEARCH
METHODOLOGY AND STATISTICS - I

Year:II SEM:III	Course Code: PIMAF20	Title of the Course: Independent Elective 3 B: Fundamentals of Research Methodology and Statistics – I	Course Type: Theory	Course Category: Independent Elective	H/W -	CREDITS 2	MARKS 100
----------------------------------	--------------------------------	---	-------------------------------	---	-----------------	---------------------	---------------------

Course Objectives

1. To provide a clear understanding of basic concepts of the research methodology.
2. To motivate them in self- independent study of the Lecture notes and online materials and to analyse the real life problems using Statistics concepts.

Course Outcomes (CO)

The Learners will be able to

1. Utilize the basic concepts of Research.
2. Prepare the review of literature.
3. Plan the various types of survey studies and sampling design.
4. Study the case of Historical methods and Philosophical methods.
5. Classify the experimental procedure and case study of various groups.

CO	PSO					
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	H	H	M	H	L	H
CO2	H	H	M	H	L	H
CO3	H	H	M	H	L	H
CO4	H	H	M	H	L	H
CO5	H	H	M	H	L	H

(L-Low, M-Moderate, H-High)

Course Syllabus

Unit I: Perception of Research and Assortment of Problem

Meaning of Research – **General Characteristics of Research** – **Specific Characteristics of Research** – Objectives of Research – Classification of Research – Types of Research – Reflective Thinking – Scientific Thinking – **Characteristic of a Good Researcher** – Characteristic of a Problem.(K1,K2,K3,K4,K5,K6)
 (Chapter 1 and 2)

Unit II: Appraise of related literature and foundation of hypothesis

Meaning of review of Literature – Objective of review of literature – Sources of review of Literature – How to conduct of the review of the literature – Meaning of hypothesis – Observation versus specific and general hypothesis – Variables in a hypothesis – Formal conditions for testing hypothesis. (K1, K2, K3, K4, K5, K6)

(Chapter 3 and 4)

Unit III: Research Planning and Sampling, Survey Method

Meaning of Research plan/ Design – Meaning and definitions of Sampling – Functions of Population and sampling – Types of sampling design – Scientific Method – Types of Survey Studies. (K1, K2, K3, K4, K5, K6)

(Chapter 5, 6 and 7)

Unit IV: Historical Method and Philosophical Method

Approaches of Historical Research – Functional History of Education – Writing the Report – Meaning of Philosophy – Philosophy of education – Procedure of Philosophy research in social sciences. (K1, K2, K3, K4, K5, K6)

(Chapter 8 and 9)

Unit V: Experimental method and Case study

Meaning and definition of experiment – the basic assumptions behind the experiment – Types of variables – Classification of experiment or experimental procedures – definition of case study – Types of Case study – Case study of group. (K1, K2, K3, K4, K5, K6)

(Chapter 9 and 10)

Books for study and reference:

Text Book:

1. Yogesh Kumar Singh - Fundamental of Research of Methodology and Statistics - New Age International Publishers, 2007.

Books for Reference:

1. Bernard Beins and Maureen A. McCarthy - Research Methods and Statistics- Cambridge University Press Publications, 2017.
2. C. R. Kothari - Research Methodology: Methods and Techniques - New Delhi: New Age International (P) Ltd., ©2004, 1985.
3. Ian Walker - Research Methods and Statistics - Palgrave Macmillan Publisher, 2010.
4. Sherri L. Jackson - Research Methods and Statistics: A Critical Thinking Approach - Thomson Learning EMEA, Limited, 2008.

E-Resources:

1. https://r.search.yahoo.com/_ylt=AwrKAnTbybVkMwADhQLnHgx.;_ylu=Y29sbwMEcG9zAzIEdnRpZAMEc2VjA3Ny/RV=2/RE=1689664091/RO=10/RU=https%3a%2f%2fmfs.mkcl.org%2fimages%2febook%2fFundamental%2520of%2520Research%2520Methodology%2520and%2520Statistics%2520by%2520Yogesh%2520Kumar%2520Singh.pdf/RK=2/RS=34nLQrRAfg3K6OC0qscqOhl3HLM-
2. https://r.search.yahoo.com/_ylt=Awr1Td55z7VkJTLmCEAznHgX.;_ylu=Y29sbwMEcG9zAzEEdnRpZAMEc2VjA3Ny/RV=2/RE=1689665529/RO=10/RU=https%3a%2f%2fdrive.google.com%2ffile%2fd%2f1XBslFv864x-k2kG-gGxlc35IIDL8_3Z1%2fview%3fusp%3dsharing/RK=2/RS=NIJctXhwacALzFiAfbxuc2xubrA-
3. <https://nptel.ac.in/>
4. https://swayam.gov.in/nc_details/NPTEL
5. <https://www.coursera.org/>

SEMESTER – IV
PIMAH20 - INDEPENDENT ELECTIVE 4 B: FUNDAMENTALS OF RESEARCH
METHODOLOGY AND STATISTICS – II

Year: II SEM:IV	Course Code: PIMAH20	Title of the Course: Independent Elective 4 B: Fundamentals of Research Methodology and Statistics - II	Course Type: Theory	Course Category: Independent Elective	H/W -	CREDITS 2	MARKS 100
----------------------------------	--------------------------------	--	-------------------------------	---	-----------------	---------------------	---------------------

Course Objectives

1. To provide a clear understanding of basic concepts of the research methodology.
2. To plan the Questionnaire in research and survive works.

Course Outcomes (CO)

The Learners will be able to

1. Analyze the needs and purpose of Experimental design.
2. Prepare and Analyze the Questionnaire and compute the Statistical analysis of data.
3. Analyze the statistical data and research report.
4. Acquire the knowledge of Action research and Educational research.
5. Understand the basic measures of variability, dispersion and correlation.

CO	PSO					
	PSO1	PSO2	PSO3	PSO4	PSO5	PSO6
CO1	H	H	M	H	L	H
CO2	H	H	M	H	L	H
CO3	H	H	M	H	L	H
CO4	H	H	M	H	H	H
CO5	H	H	M	H	H	H

(L-Low, M-Moderate, H-High)

Course Syllabus

Unit I: Genetic method and Design of Experiments

Meaning of Genetic Research – Types of Genetic research – Problems of Genetic research– Diagnosis and Prognosis– Needs and Purpose of Experimental design– Types of basic experimental design. (K1,K2,K3,K4,K5,K6)
 (Chapter 11 and 12)

Unit II: Tools of Research and collection of Data

Questionnaire – Preparing and administering the questionnaire – Characteristics of a Good questionnaire – Characteristic of a Good schedule – Need for data collection – Difference between facts and data – Characteristics of quantitative data.(K1,K2,K3,K4,K5,K6)
(Chapter 13 and 14)

Unit III: Analysis of data and Research report

Need for analysis of data or Treatment of data – Statistical analysis of data – Planning for data analysis – Level of significance – The research report – General format of research report.(K1,K2,K3,K4,K5,K6)
(Chapter 15 and 16)

Unit IV: Action Research and Presentation of Statistical data

Meaning of Action Research – Objective of educational research – Types of education research – Steps of research – Method of organizing and presenting data - The graphical presenting of ungrouped data. (K1,K2,K3,K4,K5,K6)
(Chapter 17 and 18)

Unit V: Measurement of central Tendency and measures of variability

Arithmetic Mean – Median – Mode – Different measures of variability of dispersion – Standard deviation – Correlation. (K1,K2,K3,K4,K5,K6)
(Chapter 19 and 20)

Books for study and reference:

Text Book:

1. Yogesh Kumar Singh - Fundamental of Research of Methodology and Statistics - New Age International Publishers, 2007.

Books for Reference:

1. Bernard Beins and Maureen A. McCarthy - Research Methods and Statistics- Cambridge University Press Publications, 2017.
2. C. R. Kothari - Research Methodology: Methods and Techniques - New Delhi: New Age International (P) Ltd., ©2004, 1985.
3. Ian Walker - Research Methods and Statistics - Palgrave Macmillan Publisher, 2010.
4. Sherri L. Jackson - Research Methods and Statistics: A Critical Thinking Approach - Thomson Learning EMEA, Limited, 2008.

E- Resources:

1. https://r.search.yahoo.com/_ylt=AwrKAnTbybVkMwADhQLnHgx.;_ylu=Y29sbwMEcG9zAzIEdnRpZAMEc2VjA3Ny/RV=2/RE=1689664091/RO=10/RU=https%3a%2f%2fmfs.mkcl.org%2fimages%2febook%2fFundamental%2520of%2520Research%2520Methodology%2520and%2520Statistics%2520by%2520Yogesh%2520Kumar%2520Singh.pdf/RK=2/RS=34nLQrRAfg3K6OC0qscqOhl3HLM-
2. https://r.search.yahoo.com/_ylt=Awr1Td55z7VkTLMCEAznHgx.;_ylu=Y29sbwMEcG9zAzEEdnRpZAMEc2VjA3Ny/RV=2/RE=1689665529/RO=10/RU=https%3a%2f%2fdrive.google.com%2ffile%2fd%2f1XBsIFv864x-k2kG-gGxlc35IIDL8_3Z1%2fview%3fusp%3dsharing/RK=2/RS=NIJctXhwacALzFiAfbxuc2xubrA-
3. <https://nptel.ac.in>
4. www.coursera.org
5. <https://swayam.gov.in>