

# UNIVERSITY OF PUNE

## Syllabus for M.A. Part I

(Semester- System to be implemented from 2008-09 at College Centres)

### Semester I

<b>Paper No.</b>	<b>Paper title</b>
EP 101:	Cognitive Processes
EP 102	Psychology Practicals: Experiments
EP 103:	Psychological Testing
EP 104:	Statistical Methods

### Semester II

<b>Paper No.</b>	<b>Paper title</b>
EP 201:	Learning and Memory
EP 202	Psychology Practicals: Tests
EP 203:	Psychological Testing: Applications
EP 204:	Research Methodology

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## **SEMESTER I**

### **EP 101: COGNITIVE PROCESSES**

#### **OBJECTIVES:**

1. To develop insight into one's own and others' behaviour and underlying mental processes,
2. To enrich students' understanding of major concepts, theoretical perspectives, and empirical findings in cognitive psychology

#### **1: NATURE AND IMPORTANCE OF COGNITIVE PSYCHOLOGY**

1. Cognitive Psychology: Definition and domains
2. History and methods of cognitive psychology
3. Theories of cognitive development – Piaget, Vygotsky
4. Current paradigms of cognitive psychology – Information processing approach, ecological approach
5. Application: Cognitive style and cognitive map

#### **2: SENSATION, ATTENTION AND PERCEPTION**

1. Sensation - Introduction to psychophysics: Basic concepts and methods.
2. Attention: (a) Functions of attention: Divided attention, selective attention, vigilance, signal detection and search (b) Theories of attention process
3. Perception-approaches: Gestalt, Bottom-Up (feature analysis, template matching, prototypes), Top-Down and Pandemonium
4. Perception: Cross-cultural studies
5. Application: Subliminal perception, perceptual defence, and extra-sensory perception.

#### **3: LANGUAGE AND RELATED COGNITIVE PHENOMENA**

1. Understanding spoken language: Speech perception, constituent structure, transformational grammar and factors affecting comprehension
2. Reading: Perceptual process; theories of word recognition, reading and comprehension
3. Speaking: Selecting the content of speech, speech errors, gestures, social context of speech
4. Writing: Comparing speaking and writing, cognitive tasks involved in writing
5. Application: Development in reading ability, Multilingualism.

#### **4: PROBLEM SOLVING, CREATIVITY AND DECISION MAKING**

1. Problem: Definition, problem solving cycle, types, obstacles and aids
2. Problem solving approaches – Algorithm; heuristics: means-end & computer simulation, and analogy
3. Definition of creativity, measuring creativity
4. Reasoning and decision making: Types of reasoning – Syllogistic and Conditional; and factors influencing decision making
5. Application: Artificial intelligence

#### **Books for Reading-**

1. Matlin, M. (1994). *Cognition*. Prism Indian Books
2. Galloti, K. M. (2004). *Cognitive psychology in and out of the laboratory*. USA: Thomson Wadsworth.
3. Sternberg, R.J. (2007). *Cognitive Psychology*. Australia: Thomson Wadsworth.
4. Kellogg, R.T.(2007). *Fundamentals of Cognitive Psychology*. N.D. Sage Publications.
5. Solso, R. L. (2004). *Cognitive Psychology (6<sup>th</sup> ed)*. Delhi: Pearson Education.
6. Wade, C. and Tavris, C. (2007). *Psychology*. Pearson Education.

#### **Books for Reference-**

1. Best, J. B. (1999). *Cognitive Psychology*. USA: Wadsworth Publishing Co.
2. Guenther R. K. (1998). *Human Cognition*. New Jersey: Prentice-Hall.
3. Kaplan, S. & Kaplan, R. (1982). *Cognition and environment*. N.Y.: Praeger Publishers.
4. Flavell, J.H. (1985). *Cognitive development*. 2<sup>nd</sup> ed. N.J.: Prentice-Hall.
5. Reed S. K. (1998). *Cognition: Theory and application (3<sup>rd</sup> ed)*. California: Brooks/Cole Pub. Company
6. Borude, R.R. *Bodhanik manasashastra*. Chhaya Prakashan.
7. Cohen G. (1983). *Psychology of cognition (2<sup>nd</sup> ed)*. London: Academic Press
8. Desai, B. and Abhyankar, S. C. (2007). *Prayogik manasashastra and sanshodhan paddhati*. Pune: Narendra Prakashan.

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## **EP 102: PSYCHOLOGY PRACTICALS: EXPERIMENTS**

### **OBJECTIVES:**

1. To create interest in psychological phenomena
2. To develop awareness of psychological tools and techniques
3. To nurture the skill of observation.

### **1: COGNITIVE PROCESSES (ANY 3):**

1. Signal Detection - ROC
2. Perceptual Defence
3. Concept Formation
4. Problem Solving
5. Study of Mental Imagery
6. Peterson's Test of Rational Learning
7. Stroop Effect in Visual Perception

### **2: LEARNING (ANY 3):**

1. Learning by Insight (Bolt Head Maze)
2. Interference
3. Paired Associate Learning
4. Comparison of Serial Position Effect in Free Recall and Serial Learning
5. Verbal Conditioning
6. Transfer of Training (Stylus maze)

### **3: MEMORY (ANY 2):**

1. Short Term Memory
2. Effect of Mnemonic Strategy on Memory
3. Immediate Memory Span: Meaningful Vs. Meaningless Material
4. Organization in Memory
6. Memory for Unattended Material
7. Memory for Associated and Un-associated Pairs of Words

### **4: MOTIVATION AND EMOTION (ANY 2):**

1. Zeigarnik Effect
2. Effect of Anxiety on Performance
3. Feedback / KoR
4. Goal Setting
5. Level of Aspiration

### **Books for Reading:**

1. Rajamanickam, M. (2005). *Experimental Psychology: with Advanced Experiments*, Volume 1 & 2. New Delhi: Concept Publishing Company.
2. Mohsin, S. M. (1975). *Experiments in psychology*. Orient Longman.
3. Mohanthy. *Experiments in psychology*.
4. Parameshwaran, E. G. & Rao, B. T. (1968). *Manual of experimental psychology*. Bombay: Lalvani Publishing House.
5. Tinker, M.A. & Russell, W.A. *Introduction to methods in experimental psychology*. Appleton – Century Crofts.
6. Jalota, S. (1962). *Experiments in psychology*. Asia Publishing House.
7. Galloti, K. M. (2004). *Cognitive psychology in and out of the laboratory*. USA: Thomson Wadsworth.

### **Books for Reference:**

1. Baker, L.M., Weisiger, C. & Taylor, M.W. (1960). *Laboratory experiments in general psychology*. Oxford Univ. Press.
2. Berkowitz, L. (1974). *Advanced experimental social psychology*. Academic Press.
3. Debold, R.C. (1968). *Manual of contemporary experiments in psychology*. Prentice-Hall.
4. Fergusson, E. D. (1976). *Motivation: An experimental approach*. Holt Rinehart & Winston.
5. Collins, M. & Drever, J. (1930). *Experimental Psychology*. London: Methuen & Co. Ltd.
6. Snodgrass J. G., Levy-Berger, Hyden (1985). *Human Experimental Psychology*. New York: Oxford University Press.
7. Kuppuswamy, B. (1952). *Elementary Experiments in Psychology*. London: Oxford University Press.

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## **EP 103: PSYCHOLOGICAL TESTING**

### **OBJECTIVES:**

1. To acquaint the students with the characteristics of standardised tests,
2. To familiarise them with the principles of test construction.

### **1: NATURE AND SCOPE OF PSYCHOLOGICAL TESTING**

1. Definition and characteristics of psychological tests
2. Classification and uses of psychological tests
3. General steps in test construction
4. Item analysis
5. [A] Issues in test administration: Ethics, bias, cultural fairness  
[B] Factors influencing test performance- Examiner, situational variables and test-taker's perspective

### **2: NORMS AND THE MEANING OF TEST SCORES**

1. Basic statistical concepts in psychological testing
2. Developmental norms
3. Within-group norms- Percentiles, standard scores, the Deviation IQ
4. Relativity of norms
5. Computers and the interpretation of test scores

### **3: RELIABILITY**

1. Correlation coefficient: Meaning, statistical significance, reliability coefficient
2. Definition and types of reliability
3. Reliability of speeded tests
4. Dependence of reliability on the sample tested
5. Using reliability information

### **4: VALIDITY**

1. Validity: Definition and evolving concepts
2. Content-description validation procedures
3. Criterion-prediction procedures
4. Construct-identification procedures
5. Test validity and decision theory

### **Books for Reading-**

1. Anastasi, A. & Urbina, S. (1997). *Psychological testing*. N.D.: Pearson Education.
2. Kaplan, R.M. & Saccuzzo, D.P. (2007). *Psychological Testing: Principles, Applications, and Issues*. Australia: Thomson Wadsworth.
3. Gregory, R.J. (2005). *Psychological testing: History, principles and applications*. New Delhi: Pearson Education.
4. Singh, A.K. (2006). *Tests, Measurements and Research Methods in Behavioural Sciences*. Patna: Bharati Bhavan.

### **Books for Reference-**

1. Freeman, F.S. 3<sup>rd</sup> ed. (1965). *Psychological testing*. New Delhi: Oxford & IBH Publishing Co. Pvt. Ltd.
2. Cronbach, L. J. 5<sup>th</sup> ed. (1990). *Essentials of psychological testing*. New York: Harper Collins Publishers:
3. Anastasi A. (1988). *Psychological Testing*. New York: McMillan
4. Murphy, K. R., Davidshofer, R. K. (1988): *Psychological testing: Principles and applications*. New Jersey: Prentice Hall Inc.
5. Aiken L.R. (1996) *Rating Scales and Checklists: Evaluating Behavior, Personality and Attitudes*.
6. Ghiselli, E. E., Campbell, J. P. & Zedek, S. (1981). *Measurement theory for the behavioural sciences*. W.H. Freeman.
7. Desai, B. and Abhyankar, S. C. (2007). *Prayogik manasashastra and sanshodhan paddhati*. Pune: Narendra Prakashan.
8. Chadha, N. K. (1996). *Theory and practice of psychometry*. N. D.: New Age International Ltd.

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# EP 104: STATISTICAL METHODS

## OBJECTIVES:

1. To acquaint the students and make them understand the different statistical methods with their uses and interpretations,
2. To develop computational skills in students; and to enable them to analyze the data of practical, project work, and dissertation.

## 1: OVERVIEW OF DESCRIPTIVE STATISTICS AND PROBABILITY

1. Overview of measures of Central tendency, variability, curves and graphs
2. Percentiles, percentile ranks and standard scores
3. Probability: Concept, definition, and principles
4. Characteristics of normal distribution curve
5. Applications of normal distribution curve.

## 2: INFERENCE STATISTICS

1. Inferences: Standard error of mean and other statistics
2. Significance of difference between means (t test)
3. Assumptions of Analysis of Variance, and One-way ANOVA- Independent, Repeated: Concept
4. Two-way ANOVA - Independent, Repeated: Conceptual level
5. Analysis of Covariance (conceptual level).

## 3: CORRELATION & REGRESSION

1. Concept and meaning of correlation
2. Pearson's Product-Moment Correlation
3. Point – Biserial Correlation & Phi-coefficient
4. Partial and Multiple Correlation
5. [A] Simple Linear Regression: Concept & uses  
[B] Significance testing in correlation and regression.

## 4: NON-PARAMETRIC STATISTICS

1. Difference between Parametric & Non-parametric statistics
2. Chi Square tests
3. Non-parametric tests for correlated data- Rank Difference Correlation, Sign Test, Wilcoxon Signed Rank test
4. Non-parametric tests for uncorrelated data - Mann-Whitney U-test and Kruskal-Wallis Test
5. Statistical software: An introduction – SPSS, STATPAL, Excel

### **IMPORTANT NOTE-**

- 1) Students can use non-scientific calculator during examination.
- 2) Calculation exercises in the question paper shall be restricted to the following:
  1. Percentile, Percentile Ranks and Standard Scores
  2. Application of Normal Probability Curve
  3. Product Moment Correlation
  4. Scatter-Diagram
  5. t-test
  6. One-way and Two-way ANOVA
  7. Chi-square Tests

### **Books for Reading-**

1. Minium E.W., King B. M., Bear G. (1995). *Statistical Reasoning in Psychology and Education*
2. Guilford J. P. and Fruchter B. (1985). *Fundamental Statistics in Psychology and Education* (6<sup>th</sup> ed) McGraw - Hill
3. Howell D.C. (1997). *Statistical Methods for Psychology* (4<sup>th</sup> Ed)
4. Sarma K.V.S. (2001) *Statistic Made Simple : Do it Yourself on PC*
5. Welkowitz, J., Emen, R. B. and Cohen, J. (1982). *Introductory statistics for the behavioural sciences* (3<sup>rd</sup> ed.). N.Y.: Academic Press.

### **Books for Reference-**

1. Fergusson, G. A. (1976). *Statistical analysis in psychology and education*. McGraw-Hill.
2. Glass, G. V. & Stanley, J. C. (1970). *Statistical methods in education and psychology*. Prentice-Hall.
3. Kurtz, A.K. & Mayo, S.T. (1979). *Statistical methods in education and psychology*. Narosa.
4. Lomax, R. G. (1998). *Statistical concepts: A second course for education and behavioural sciences*. N.J.: Lawrence Erlbaum Asso. Inc.
5. Mangal, S. K. (2006). *Statistics in psychology and education*. N.D.: Prentice-Hall
6. Levin, J. & Fox, J. A. (2006). *Elementary statistics in social research*. Delhi: Pearson Education.

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## **SEMESTER II**

### **EP 201: LEARNING AND MEMORY**

#### **OBJECTIVES:**

1. To acquaint the students with major theories of learning and memory, and neurological basis of learning and memory,
2. To enhance students' knowledge about the various applications of learning and memory

#### **1: LEARNING: THEORIES AND APPLICATIONS**

1. Classical Conditioning: Concepts, types and applications
2. Operant Conditioning: Reinforcement, types, schedules of reinforcement, shaping and applications
3. Cognitive approaches to learning: Latent learning, observational learning, and applications
4. Cultural influences on learning
5. Application: Prevention of AIDS and HIV, and awareness of media and violence.

#### **2: TYPES OF MEMORY**

1. Sensory memory- Iconic and echoic
2. Short Term Memory
3. Long Term Memory: Types
4. Determinants of memory
5. Applications: Memory improvement techniques

#### **3: MODELS AND THEORIES OF MEMORY**

1. Unitary and dual process view: Waugh and Norman
2. Multi-process view: Atkinson & Shiffrin; Craik & Lockhart
3. Connectionist model: Rumelhart & McClelland
4. Theories of forgetting: Psychoanalytical, Trace, Trace Decay and Interference
5. Application: Distortion of memory

#### **4: NEUROLOGICAL BASIS OF LEARNING AND MEMORY**

1. Brain areas associated with learning and memory
2. Types of Amnesia- Amnesia after concussion (Anterograde, Retrograde), Korsakoff, Alzheimer's disease
3. Studies on role of brain in learning and conditioning
4. Synaptic mechanisms and synaptic plasticity of learning and memory

5. Application: Neuro-linguistic programming.

### **Books for Reading-**

1. Matlin, M. (1994). *Cognition*. Prism Indian Books
2. Sternberg, R. J. (2007). *Cognitive Psychology*. Australia: Thomson Wadsworth.
3. Galloti, K. M. (2004). *Cognitive psychology in and out of the laboratory*. USA: Thomson Wadsworth.
4. Kellogg, R. T. (2007). *Fundamentals of Cognitive Psychology*. N.D. Sage Publications.
5. Solso, R. L. (2004). *Cognitive Psychology (6<sup>th</sup> ed.)*. Delhi: Pearson Education.
6. Carlson, N. R. (2007). *Foundations of physiological psychology*. N.D.: Pearson Edu.
7. Pinel, J.P.J. (2007). *Biopsychology*. N.D.: Pearson Edu.
8. Wade, C. and Tavris, C. (2007). *Psychology*. Pearson Education.

### **Books for Reference-**

1. Best, J. B. (1999). *Cognitive Psychology*. USA: Wadsworth Publishing Co.
2. Kaplan, S. & Kaplan, R. (1982). *Cognition and environment*. N.Y.: Praeger Publishers.
3. Flavell, J.H. (1985). *Cognitive development*. 2<sup>nd</sup> ed. N.J.: Prentice-Hall.
4. Guenther R. K. (1998). *Human Cognition*. New Jersey: Prentice-Hall.
5. Reed S. K. (1998). *Cognition: Theory and application (3<sup>rd</sup> ed)*. California: Brooks/Cole Pub. Company
6. Borude, R.R. *Bodhanik manasashastra*. Chhaya Prakashan.
7. Cohen G. (1983). *Psychology of cognition (2<sup>nd</sup> ed.)*. London: Academic Press.
8. Desai, B. and Abhyankar, S. C. (2007). *Prayogik manasashastra and sanshodhan paddhati*. Pune: Narendra Prakashan.
9. Malim, T. (1994). *Cognitive processes*. London: MacMillan.

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## EP 202: PSYCHOLOGY PRACTICALS: TESTS

### OBJECTIVES:

To acquaint the students with:

1. The administration of psychological tests, interpretation of scores and report-writing,
2. The evaluation procedures and evaluation of psychological tests,
3. Certain skills of psychological counselling on the basis of psychological test results.

### 1: GENERAL ABILITY TESTS (any two):

1. Intelligence tests: Verbal Test
2. Intelligence tests: Performance Test
3. Creativity
4. Thinking
5. Judgment and Reasoning

### 2: SPECIAL ABILITY TESTS (any two):

1. Multiple Aptitude Test (any one)
2. Special Aptitude Test (any one)

### 3: PERSONALITY TESTS (any three):

1. Self-report inventory
2. Projective test: Verbal
3. Projective test: Pictorial
4. Interest inventory
5. Adjustment inventory
6. Attitude / Values

### 4: OTHER TESTS (any three):

1. Stress / Frustration
2. Environmental Assessment
3. Development Assessment
4. Achievement Test
5. Cognitive Style
6. Self Concept
7. Neuropsychological Assessment
8. Social Skill / Behavioural Skill

*\* Note: Only standardized tests should be used.*

### **Books for Reading-**

1. Anastasi, A. & Urbina, S. (1997). *Psychological testing*. N.D.: Pearson Education.
2. Kaplan, R.M. & Saccuzzo, D.P. (2007). *Psychological Testing: Principles, Applications, and Issues*. Australia: Thomson Wadsworth.
3. Gregory, R.J. (2005). *Psychological testing: History, principles and applications*. New Delhi: Pearson Education.
4. Singh, A.K. (2006). *Tests, Measurements and Research Methods in Behavioural Sciences*. Patna: Bharati Bhavan.
5. Test manuals of respective tests.

### **Books for Reference-**

1. Freeman, F.S. 3<sup>rd</sup> ed. (1965). *Psychological testing*. New Delhi: Oxford & IBH Publishing Co. Pvt. Ltd.
2. Cronbach L. J. (1984). *Essentials of Psychological Testing* (4<sup>th</sup> Ed)
3. Anastasi A. (1988). *Psychological Testing*. New York: McMillan
4. Murphy, K. R., Davidshofer, R. K. (1988): *Psychological testing: Principles and applications*. New Jersey: Prentice Hall Inc.
5. Aiken L.R. (1996) *Rating Scales and Checklists: Evaluating Behavior, Personality and Attitudes*
6. Ghiselli, E. E., Campbell, J. P. & Zedek, S. (1981). *Measurement theory for the behavioural sciences*. W.H. Freeman.
7. Chadha, N. K. (1996). *Theory and practice of psychometry*. N. D.: New Age International Ltd.

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## **EP 203: PSYCHOLOGICAL TESTING: APPLICATIONS**

### **OBJECTIVES:**

1. To train students in various psychological assessment techniques
2. To impart skills for applying different tests in practical situations

### **Important Note:-**

- *Some of the tests in this paper are common to two or more specialization areas (e.g. 16 PF). While teaching these tests in the context of the specified area, teachers are supposed to acquaint the students with their applications in other areas, too.*
- *Teachers are supposed to familiarize the students with Indian adaptation of tests and indigenous tests.*

### **1: TESTING IN EDUCATIONAL SETTING**

1. General mental ability tests: Group tests – SPM, Cattell’s Culture-fair Test of Intelligence
2. General mental ability tests: Individual tests- Binet - Kamath test, WISC, Malin’s Intelligence Scale for Indian Children (MISIC), Bhatia’s Battery of Intelligence Tests
3. Differential Aptitude Test (DAT)
4. Personality and interest inventories- CPQ, CAT, HSPQ, SVIB
5. School and college entrance tests- SAT, GRE

### **2: TESTING IN CLINICAL SETTING**

1. Testing based on the logical-content strategy- Woodworth Personal Data Sheet, Mooney Problem Checklist
2. Tests based on the Criterion-Group Strategy- MMPI, California Psychological Inventory
3. Tests based on the Factor-Analytic Strategy- 16 PF, NEO-PI R, EPQ-R
4. Tests based on the Theoretical Strategy- EPPS, self concept inventories, Jackson Personality Inventory
5. Projective and neuropsychological testing

### **3: TESTING IN INDUSTRIAL AND BUSINESS SETTING**

1. The selection of employees- Concepts of base rates and hit rates; Taylor Russell tables; Utility theory and decision analysis; incremental validity.
2. Personality tests used for personnel selection- MBTI, 16 PF
3. Dexterity tests - O’Conner Finger Dexterity Test, Bennett Hand-Tool Dexterity Test, Minnesota Manual Dexterity Test, Mechanical Reasoning Test
4. Situational testing (games, role play) and in-basket exercises
5. Measuring interpersonal relationship – FIRO-B and leadership assessment.

#### 4: TESTING IN COUNSELING SETTING

1. General ability testing: Individual tests (Bhatia's Battery of Performance Tests of Intelligence), and group tests (SPM, NVIT, Passi Creativity Tests)
2. Multiple aptitude tests - DAT, GATB
3. Strong Vocational Interest Blank (SVIB)
4. Anxiety and adjustment test- STAI, STAXI, Bell's Adjustment Inventory, Moos' Family Environment Scale (FES)
5. Sack's Sentence Completion Test

#### Books for Reading-

1. Kaplan, R.M. & Saccuzzo, D.P. (2007). *Psychological Testing: Principles, Applications, and Issues*. Australia: Thomson Wadsworth.
2. Anastasi, A. & Urbina, S. (1997). *Psychological testing*. N.D.: Pearson Education.
3. Gregory, R.J. (2005). *Psychological testing: History, principles and applications*. New Delhi: Pearson Education.

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1. Freeman, F.S. 3<sup>rd</sup> ed. (1965). *Psychological testing*. New Delhi: Oxford & IBH Publishing Co. Pvt. Ltd.
2. Cronbach, L. J. 5<sup>th</sup> ed. (1990). *Essentials of psychological testing*. New York: Harper Collins Publishers:
3. Anastasi A. (1988). *Psychological Testing*. New York: McMillan
4. Murphy, K. R., Davidshofer, R. K. (1988): *Psychological testing: Principles and applications*. New Jersey: Prentice Hall Inc.
5. Aiken L.R. (1996) *Rating Scales and Checklists: Evaluating Behavior, Personality and Attitudes*
6. Ghiselli, E. E., Campbell, J. P. & Zedek, S. (1981). *Measurement theory for the behavioural sciences*. W.H. Freeman.
7. Chadha, N. K. (1996). *Theory and practice of psychometry*. N. D.: New Age International Ltd.

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# **EP 204: RESEARCH METHODOLOGY**

## **OBJECTIVES:**

To acquaint the students with:

1. The basic research concepts,
2. Some commonly used research designs and the APA style of preparing research proposal and writing research report.

## **1: OVERVIEW OF RESEARCH PROCESS AND SURVEY RESEARCH**

1. Overview of basic research concepts, and characteristics and uses of surveys
2. Sampling techniques
3. Survey methods- Observation, mail surveys (questionnaires), personal interviews, telephone interviews, internet surveys
4. Survey research designs- Cross-sectional, successive independent samples, longitudinal
5. Problems, issues, and applications of survey research

## **2: EXPERIMENTAL DESIGNS**

1. Research designs: Definition, principles and functions
2. Between-group designs: Randomised group designs, Matched group designs / randomised block design – a) Two group designs, b) Multiple group designs,
3. Types of factorial designs: Simple design
4. Within-group designs
5. Mixed designs (Applications only)

## **3: QUASI-EXPERIMENTAL DESIGNS AND SCALING**

1. Characteristics and types of quasi-experimental designs: Single-group designs, pre test-post test designs
2. Non-equivalent control group designs, regression discontinuity design, cohort designs, time series designs
3. Application of quasi-experimental designs in program evaluation research.
4. Scaling: Purpose, psychophysical and psychological scaling, and Thurstone-type scales
5. Likert-type scales and Semantic Differential scales

## **4: MULTIVARIATE ANALYSIS AND REPORT WRITING**

1. Factor analysis: Basic terms, overview of extraction methods
2. Overview of rotation methods, higher order factor analysis
3. Confirmatory factor analysis
4. Multiple regression, canonical correlations multivariate analysis of variance, discriminant functions analysis, and path analysis
5. APA style of preparing research proposal and writing research report.

### **Books for Reading-**

1. Shaughnessy J.J. and Zechmeister E.B. (1997). *Research Methods in Psychology* (4<sup>th</sup> ed)
2. Kerlinger F.N. (1994). *Foundations of behavioral research* (3<sup>rd</sup> ed)
3. Zechmeister J.S., Zechmeister E.B. & Shaughnessy J.J. (2001). *Essentials of research methods in psychology*.
4. Robinson, P.W. (1976). *Fundamentals of experimental psychology*. Prentice-Hall.
5. Edwards, A.L. (1969). *Techniques of attitude scale construction*. Vakil, Feffer & Simons.
6. Edwards, A.L. (1985). *Experimental designs in psychological research*. Harper & Row.
7. Singh A.K. (2006). 5<sup>th</sup> ed. *Tests, Measurement and Research Methods in Behavioural Sciences*. Patna: Bharati Bhavan.
8. Christensen. *Experimental methodology*.

### **Books for Reference-**

1. Bhattacharya, D. K. (2003). *Research Methodology*. New Delhi: Excel Books.
2. Mason E.J. and Bramble W.J. (1989). *Understanding and conducting research: Applications in education and behavioral sciences* (2<sup>nd</sup> ed)
3. Borude, R.R. (2005). *Sanshodhan Paddhatishastra*. Pune: Pune Vidyarthi Gruha
4. Broota, K.D. (1989). *Experimental design in behavioural research*. Wiley Eastern.
5. Goode, W.J. & Hatt, P.K. (1952). *Methods in social research*.
6. Tabachnick B.G. and Fidell L.J. (2001). *Using Multivariable statistics* (4<sup>th</sup> ed)
7. Gursuch R.L. (1983). *Factor analysis* (2<sup>nd</sup> ed)
8. Nunnally J.C. (1981). *Psychometric Theory*
9. Kothari, C. R. (1985). *Research methodology: Methods and techniques*. New Delhi: Wiley Eastern Ltd.
10. Howitt, D. and Crammer, D. (2005). *Introduction to Research Methods in Psychology*. Pearson Education.
11. Ranjit Kumar (2006). *Research methodology: A step-by-step guide for beginners*. N.D.: Pearson Education.
12. Desai, B. and Abhyankar, S. C. (2007). *Prayogik manasashastra and sanshodhan paddhati*. Pune: Narendra Prakashan.

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