

CRSU, Jind 2016-18

B.Ed. - I

COURSE- IV &V (GROUP B) Opt. (i)

PEDAGOGY OF MATHEMATICS

By: Dr. Ritu Bala

Time: 3 Hours

Max. Marks- 100 (Theory: 80, Internal: 20)

Credits: 4

Course Objectives:

After completion of the course, students are expected to:

- explain the meaning, nature, aims and objectives of mathematics
- perform pedagogical analysis of various concepts in mathematics
- describe instructional planning and development of relevant material for the teaching of mathematics
- use ICT in teaching of mathematics
- describe continuous and comprehensive evaluation, diagnostic testing and remedial teaching in mathematics
- explain importance and uses of learning resources in mathematics
- improve competences in secondary level mathematics

Course Content Analysis:

Chapter/ Topic	Lectures		Academic Activity to be Organized	Evaluation
Week 1				
Orientation		18.09.2017 to 20.09.2017		
Unit 1: Concept and Aims of Teaching of Mathematics	1-11	22.09.17-9.10.17	Story Telling, Presentations, Inductions-Deductions, Lectures, Interactions, Guided Discussions	Oral & Written
Meaning, Scope and Nature of Mathematics	1,2	22.09.17-25.09.17	Lecture cum Discussions & Interactions	
Week 2				
Aims and Objectives of Teaching Mathematics at Secondary Stage	3	26.09.17	Story Telling, Inductive-Deductive Approach	
	4	27.09.17	Guided Discussion	
Framing objectives according to Blooms taxonomy	5	28.09.17	Inductive-Deductive Approach, Lecture	
	6	29.09.17	Guided Discussion	
Week 3				
The Nature of Mathematical Propositions, use of Quantifiers and Venn Diagram	7 8	03.10.17 04.10.17	Inductive-Deductive Approach Presentations & Discussions	
A Mathematical Theorem and its Variants- Converse, Inverse and Contra Positive, Proofs and Types of Proof.	9 10	06.10.17 07.10.17	Inductive-Deductive Approach Presentations, Discussions & Drill Work	

Revision and Solutions to Queries – Unit1	11	9.10.17	Interaction & Discussion	
Week 4				
Unit 3: Learning Resources	12-13	10.10.17-11.10.17	Lecture, Elections, Meetings, Discussions	Performance
Establishment of Mathematics Club	12 13	10.10.17 11.10.17	Introduction, Selection of Different Office Bearers and their Roles Selection of Activities to be conducted	
Unit 2: Methods of Teaching Mathematics	14-24	12.10.17-28.10.17	Demonstrations, Problem-Solving, Discussions, Interactions, Drills	Oral & Written
Inductive – deductive	14 15	12.10.17 13.10.17	Demonstration with active participation of students Guided Discussion	
Analytic – synthetic	16 17	14.10.17 16.10.17	Demonstration with active participation of students Guided Discussion	
Week 5				
Problem solving	18 19	17.10.17 23.10.17	Demonstration with active participation of students Guided Discussion	
Week 6				
Heuristic method	20 21	24.10.17 25.10.17	Demonstration with active participation of students Guided Discussion	
How to Select the Best Method	22	26.10.17	Inductive-Deductive Approach Guided Discussion, Drill	

Revision and Solutions to Queries – Unit 2	23 24	27.10.17 28.10.17	Interaction & Discussion	
Week 7				
Unit 3: Learning Resources	25-28	02.11.17-07.11.17	Play Way Method, Activities, Interactions, Discussions	Performance
Importance of Re-creational Activities – Games, Puzzles and Riddles in Mathematics	25,26 27,28	02.11.17-07.11.17	Play Way Method, Activities Interactions, Discussions	
Unit 2: Development of Curriculum in Mathematics	29-41	08.11.17-22.11.17	Inductions-Deductions, Problem-Solving, Discussions, Interactions, Drills	Oral & Written
Week 8				
Meaning and Objectives of Curriculum	29	08.11.17	Lecture, Interaction & Discussion	
Principles for Designing Curriculum of Mathematics at Different Stages of Schooling	30	09.11.17	Lecture, Interaction & Discussion	
Recent Curriculum Reform at National/ State Level at their Critical Appraisal	31	10.11.17	Lecture, Interaction & Discussion	
Content Analysis, Pedagogical Analysis and their Comparison	32 33 34	11.11.17 13.11.17 14.11.17	Lecture-cum-Demonstration Inductive-Deductive Approach Guided Discussion	
Week 9				

Pedagogical Analysis of following Topics of Mathematics: Equations, Sets, Volume, Trigonometry, Ratio and Proportion	35 36 37 38,39,40	15.11.17- 21.11.17	Lecture-cum-Demonstration Inductive-Deductive Approach Guided Discussion & Drill Group Discussions followed by Oral/Written Presentations	
Week 10,11				
Revision and Solutions to Queries – Unit 2	41	22.11.17	Interaction & Discussion	
Unit 3: Learning Resources: Importance of Summer Programs, Correspondence Courses, Contests and Fairs	42 43	23.11.17 24.11.17	Lecture, Visit Group Discussions followed by Oral/Written Presentations	Performance
Unit 3&4: Learning Resources Designing Mathematics Laboratory and its Effective Use Projective and Non-Projective Teaching Aids Preparation and Use of Audio- Visual Material and Equipment	44-50	25.11.17-04.12.17	Lecture, Visit, Discussion Workshop: Preparation of Models Presentations using those Models	Performance
Week 12				
Unit 3: Instructional and Material Development	51-70	05.12.17-29.12.17	Storytelling, Lectures, Demonstrations, Presentations,	

			Discussions, Inductions- Deductions, Interactions, Drill	Oral, Written, Performance
Micro Lesson Planning with Special Reference to following Micro Teaching Skills of Introduction, Probing Question, Class Room Management, Skill of Illustration with Examples, Skill of Reinforcement Writing of Lesson Plan	51,52,53, 54,55,56, 57,58	05.12.17- 13.12.17	Storytelling, Lectures, Demonstrations, Presentations, Discussions, Interactions, Inductive-Deductive Approach, Drill	
Week 13				
Application of ICT in Teaching of Mathematics	59 60 61	14.12.17- 16.12.17	Demonstration Inductive-Deductive Approach Guided Discussion, Drill	
Week 14,15				
Writing of Lesson Plan	62,63,64, 65,66,67, 68,69,70	18.12.17- 29.12.17	Lectures, Demonstrations, Presentations, Discussions, Interactions, Inductive-Deductive Approach, Drill	Oral & Written
Week 16,17	Winter Break			
Week 18,19				
Organization of State Level Mathematics Fair	71-78	15.01.17- 25.01.18	Planning, Execution	Performance
Discussion, Evaluation and Solutions to Queries	79-80	27.01.18,29.01.18	Discussion, Writing Report	Performance

related to Mathematics Fair				
Week 20				
Evaluation Tools:	81	30.01.18	Inductive-Deductive Approach	
Meaning, Need and Use of Diagnostic Testing and Remedial Teaching	82	01.02.18	Guided Discussion, Interaction & Drill	
Continuous and Comprehensive Evaluation	83	02.02.18	Inductive-Deductive Approach	
	84	03.02.18	Guided Discussion, Interaction & Drill	
Week 21				
Formative and Summative Evaluation	85	05.02.18	Inductive-Deductive Approach	
	86	06.02.18	Guided Discussion, Interaction & Drill	
Criterion and Norm Reference Test	87	07.02.18	Inductive-Deductive Approach	
	88	08.02.17	Guided Discussion, Interaction & Drill	
Revision and Solutions to Queries – Unit 4	89	09.02.17	Interaction & Discussion	
Week 22				
Unit 4: Professional Development of Mathematics Teachers	90-96	12.02.18-20.02.17	Inductive-Deductive Approach, Guided Discussions, Interaction, Visit & Participation	Oral & Written
Types of In-service Programme for Mathematics Teacher	90	12.02.18	Inductive-Deductive Approach	
	91	14.02.18	Interaction & Guided Discussion	
Role of Mathematics Teachers Association,	92	15.02.18	Library Visit	
	93	16.02.18	Interaction & Guided Discussion	

Journals and other Resource Material in Mathematics Education				
Professional Growth through Participation in Conference/ Seminars/Workshop	94 95	17.02.18 19.02.18	Participation Interaction & Guided Discussion	
Week 23				
Revision and Solutions to Queries – Unit 4	96	20.02.18	Interaction & Discussion	
Unit 1: Historical Perspective of Mathematics	97-99	21.02.18- 23.02.18	Seminar, Presentations, Discussion	Oral & Written
Workshop: Multimedia Presentation	100-110	24.02.18- 08.03.18	Lectures, Demonstrations, Presentations, Discussions, Inductions-Deductions, Interactions, Drill	Performance
Week 24,25				
Workshop: Preparation & Use of Models	111-118	09.03.18- 17.03.18	Lectures, Demonstrations, Presentations, Discussions, Inductions-Deductions, Interactions, Drill	Performance
Teaching Practice	119-149	18.03.18- 17.04.18	Interaction & Discussion	Performance
Extension Lecture	150	19.04.18	Extension Lecture	
Revision, Discussion and Solutions to Queries	151	20.04.18	Interaction & Discussion	

related to Extension Lecture				
Week 26				
Revision, Discussion and Solutions to Queries – Unit 1	152 153	21.04.18 23.04.18	Interaction & Discussion	
Unit Test – Unit 1	154	24.04.18	Oral Test	Oral Test
Revision, Discussion and Solutions to Queries – Unit 2	155 156	25.04.18 26.04.18	Interaction & Discussion	
Week 27				
Unit Test – Unit 2	157	27.04.18	Oral Test	Oral Test
Revision, Discussion and Solutions to Queries – Unit 3	158 159	28.04.18 01.05.18	Interaction & Discussion	
Unit Test – Unit 3	160	02.05.18	Oral Test	Oral Test
Week 28				
Revision, Discussion and Solutions to Queries – Unit 4	161 162	03.05.18 04.05.18	Interaction & Discussion	
Unit Test – Unit 4	163	05.05.18	Oral Test	Oral Test
Discussion and Solutions to Queries related to Syllabus	164	07.05.18		
Discussion and Solutions to Queries related to Syllabus	165	08.05.18		

Discussion and Solutions to Queries related to Syllabus	166	09.05.18		
Week 29,30				
Discussion and Solutions to Queries related to Syllabus	167	10.05.18		
Different Activities:	168-175	11.05.18-19.05.18	Visits, Games, Quiz, Puzzles, Riddles	Performance
Visit to NCERT	168	11.05.18		
Discussion, Evaluation and Solutions to Queries related to Visit	169	12.05.18		
Games	170,171	14.05.18,15.05.18		
Puzzles, Riddles	172,173	16.05.18,17.05.18		
Mathematics Quiz	174,175,	18.05.18,19.05.18		
Week 31,32				
Internal Exams	176-185	21.05.18-31.05.18	Interaction & Discussion	Performance

Suggested Resources

Books

- ❖ Alen, D.W and Ryan, K.A. (1969). Micro teaching, reading. Masschusetts, Falifornia: Addition Wesley.
- ❖ Bloom, B.Se. (1956). Taxonomy of Educational objectives. Handbook No. 1, New York: Longmans Green.
- ❖ Boyer, C. B. (1968). History of Mathematics. New York: John Wiley.
- ❖ Butler, C.H. and Wren, K.H. (1980). The teaching of secondary mathematics. New York: McGraw-Hill Book Company.

- ❖ Bush, R.N. (1968). Microteaching- Control practice in the training to teachers in communication, Opp. 201-207.
- ❖ Dave, R.H. and Saxena, R.C. (1970). Curriculum & Teaching of Mathematics in Secondary Schools. A Research Monograph, Delhi: NCERT
- ❖ Davis, D.R. (1951). The teaching of Mathematics. London: Addison Wesley Press.
- ❖ Kulshrestha, A.K. (2007). Teaching of Mathematics. Meerut: R.Lal Book Depot.
- ❖ Mangal, S.K. (2007). Teaching of Mathematics, New Delhi: Arya Book Depot.
- ❖ Shankaran and Gupta, H.N. (1984). Content- cum – Methodology of teaching Mathematics. New Delhi: NCERT
- ❖ Lindquist, E.F. (1970). Statistical Analysis in Educational Research, New Delhi, Oxford and IBH publishing House.

Other Resources

- ❖ Internet
- ❖ Online Lectures on You Tube
- ❖ Journals and Research Reports

Suggested Activities for Students

- ❖ Cooperative Learning
- ❖ Participation in Seminars, Conferences, Webinars, Workshops, Extension Lectures etc.
- ❖ Visits to Mathematics Library, Laboratory, Fairs, Exhibitions etc.

Tasks & Assignments: Any one of the following

- ❖ Preparation of a unit plan in Mathematics
- ❖ Preparation of lesson plans on two different approaches on a selected content matter
- ❖ Development of learning aids on any topic in Mathematics and procedure for using it.
- ❖ Book review of any two books in Mathematics.

- ❖ Preparation of Report of at least 2 outdoor Educational Activities: Mathematics
Visits/Seminars/Conferences/Webinars/Workshops/Extension Lectures/Any such Activity

CRSU, Jind 2015-17

B.Ed. - II

COURSE-II

ASSESSMENT FOR LEARNING

By: Dr. Ritu Bala

Time: 3 Hours

Max. Marks- 100 (Theory: 80, Internal: 20)

Credits: 4

Course Objectives:

After completion of the course, students are expected to:

- understand the concept of assessment
- understand the use of quantitative & qualitative tools and techniques of evaluation
- develop the skill in preparing, administering and analyzing diagnostic test
- familiarize with new trends in assessment
- develop the skill necessary to compute basic statistical estimates and interpret the test scores

Course Content Analysis:

Chapter/ Topic	Lecture	Date	Academic Activity to be Organized	Evaluation
Week 1, 2				
General Orientation	01.08.2017 to 04.08.2017			
Orientation: Micro Teaching	05.08.17-11.08.17			
UNIT 1: Assessment, Measurement, Evaluation and Revised taxonomy	1-14	12.8.17-19.01.17	Presentations, Induction-Deduction, Lectures, Interactions, Guided Discussions	Oral, Written & Performance
Concept of Assessment, Measurement, Evaluation and Examination	1 2	12.08.17 14.08.17	Inductive-Deductive Approach Guided Discussion	
Week 3				
Importance and Principles of Assessment	3 4	16.08.17 18.08.17	Inductive-Deductive Approach Guided Discussion	
Difference among Assessment, Measurement and Evaluation	5 6	19.08.17 21.08.17	Group Discussions followed by Oral/Written Presentations	
Week 4				
Examination as a tool for Assessment	7 8	22.08.17 23.08.17	Inductive-Deductive Approach Guided Discussion	
NCF's 2005 vision of Assessment for Learning	9 10	24.08.17 25.08.17	Inductive-Deductive Approach Guided Discussion & Drill Work	
Week 5-19				
Simulated Teaching	26.08.17-31.08.17			

Real Teaching Practice	01.09.17-14.09.17			
Internship	15.09.17-15.01.18			
Week 20				
Revised Bloom's Taxonomy (2000) for Instructional Objectives	11 12	16.01.18 17.01.18	Inductive-Deductive Approach Guided Discussion	
Teacher as a facilitator in Assessment for Learning	13	18.01.18	Inductive-Deductive Approach, Guided Discussion	
Revision and Solutions to Queries – Unit1	14	19.01.18	Interaction & Discussion	
Week 21,22				
UNIT 4: Statistical Methods and Interpretation of Scores	15-48	20.01.18-07.03.18	Induction, Problem-Solving, Discussions, Interactions, Drills	Oral & Written
Meaning, Need and Importance of Statistics in Educational Assessment	15 16 17	20.01.18 23.01.18 25.01.18	Inductive-Deductive Approach Interaction & Guided Discussion	
Organization and Graphical Presentation of Data	18 19 20	27.01.18 29.01.18 30.01.18	Problem-solving with Active Participation of Students Generalization of Steps of Computation	
Week 23,24,25,26				
Scales of Measurement	21	01.02.18	Inductive-Deductive Approach, Interaction & Guided Discussion	
Measures of Central Tendency: Mean Median and Mode	22,23,24 25,26,27 28,29,30	02.02.18-15.02.18	Problem-solving with Active Participation of Students	

	31		Generalization of Steps of Computation	
Measures of Variability: Range, Quartile Deviation and Standard Deviation	32,33,34 35,36,37 38,39,40 41	16.02.18-27.02.18	Problem-solving with Active Participation of Students Generalization of Steps of Computation	
Normal Probability Curve: Concept and Characteristics	42 43	28.02.18	Inductive-Deductive Approach Interaction & Guided Discussion	
Week 27				
Co-efficient of Correlation: Spearman's Rank Difference Method	44 45	01.03.18 02.03.18	Problem-solving with Active Participation of Students Generalization of Steps of Computation	
Percentile and Percentile Rank	46 47	03.03.18 05.03.18	Problem-solving with Active Participation of Students Generalization of Steps of Computation	
Week 28				
Revision and Solutions to Queries – Unit 4	48	07.03.18	Interaction & Discussion	
Unit 2: Tools and Techniques	48-63	08.03.18-27.03.18	Storytelling, Lectures, Visit, Reviews, Workshops, Experiments, Discussions, Interactions	Oral, Written & Performance
Characteristics of a good Assessment tool	48	08.03.18	Storytelling, Lecture, Discussion	

Assessment Approaches: Formative (Assessment for Learning) and Summative (Assessment of Learning), Quantitative and Qualitative	49 50	09.03.18 10.03.18	Inductive-Deductive Approach Interaction & Guided Discussion
Tools of Evaluation	51	12.03.18	Interaction & Discussion
Week 29			
Observation	52	13.03.18	Lecture, Experiment, Discussion
Interview	53	14.03.18	Lecture, Experiment, Discussion
Questionnaire	54	15.03.18	Lecture, Experiment, Discussion
Rating scale	55	16.03.18	Lecture, Experiment, Discussion
Checklist	56	17.03.18	Lecture, Experiment, Discussion
Cumulative Record	57	19.03.18	Lecture, Experiment, Discussion
Week 30			
Self-assessment and Feedback	58	20.03.18	Lecture, Experiment, Discussion
Planning and Preparation of an Achievement test (Including blue print): Objective Type Test, Subjective Type Test	59-62	21.03.18-26.03.18	Workshop and Discussions
Week 31			
Revision and Solutions to Queries – Unit 2	63	27.03.18	Interaction & Discussion

UNIT 3: New Trends and Issues in Assessment:	64-82	28.03.18-21.04.18	Induction-Deduction, Problem-Solving, Discussions, Interactions, Drills	Oral & Written
Semester System	64	28.03.18	Inductive-Deductive Approach, Interaction & Guided Discussion	
Grading System	65	30.03.18	Inductive-Deductive Approach, Interaction & Guided Discussion	
Credit system	66 67	31.03.18 02.04.18	Inductive-Deductive Approach Interaction & Guided Discussion	
Week 32				
Online Examination System	68 69	03.04.18 04.04.18	Inductive-Deductive Approach Interaction & Guided Discussion	
Question Bank	70	05.04.18	Inductive-Deductive Approach, Interaction & Guided Discussion	
Open Book System	71 72	06.04.18 07.04.18	Inductive-Deductive Approach Interaction & Guided Discussion	
Flexibility in Examination, Exam on Demand	73 74	09.04.18 10.04.18	Inductive-Deductive Approach Interaction & Guided Discussion	
Week 33, 34				
Diagnostic and Remedial Teaching for Qualitative Assessment.	75 76	11.04.18 12.04.18	Inductive-Deductive Approach Interaction & Guided Discussion	
Using ICT for Innovation in Examination: Administration and Execution	77	13.04.18	Inductive-Deductive Approach, Interaction & Guided Discussion	
Issues in Assessment: Assessment at Different	78,79 80,81	16.04.18-20.04.18	Inductive-Deductive Approach Interaction & Guided Discussion	

Stages, Design and Conduct of Assessment, Curricular Areas that can't be tested for Marks				
Revision and Solutions to Queries – Unit 3	82	21.04.18	Interaction & Discussion	
Extension Lecture	83	23.04.18	Extension Lecture	
Revision, Discussion and Solutions to Queries related to Extension Lecture	84	24.04.18	Interaction & Discussion	
Week 35				
Revision, Discussion and Solutions to Queries – Unit 1	85,86	25.04.18 26.04.18	Interaction & Discussion	
Unit Test – Unit 1	87	27.04.18	Oral Test	
Week 36				
Revision, Discussion and Solutions to Queries – Unit 2	88,89	28.04.18, 01.05.18	Interaction & Discussion	
Unit Test – Unit 2	90	02.05.18	Oral Test	
Revision, Discussion and Solutions to Queries – Unit 3	91,92	03.05.18, 04.05.18	Interaction & Discussion	
Unit Test – Unit 3	93	05.05.18	Oral Test	
Week 37				

Revision, Discussion and Solutions to Queries – Unit 4	94,95	07.05.18, 08.05.18	Interaction & Discussion	
Unit Test – Unit 4	96	09.05.18	Written Test	
Discussion and Solutions to Queries related to Syllabus	97	10.05.18		
Discussion and Solutions to Queries related to Syllabus	98	11.05.18		
Discussion and Solutions to Queries related to Syllabus	99	12.05.18		
Discussion and Solutions to Queries related to Syllabus	100	14.05.18		
Week 38,39,40				
Internal Exams	100-114	15.05.18-31.05.18		

Suggested Resources

Books

- ❖ Aggarwal, Y.P. (2002). Statistical Methods: Concepts, Applications and Computation. New Delhi: Sterling Publishers Pvt. Limited.
- ❖ Anastasi, A. (1976). Psychological Testing. New York: McMillan Publishing Co., Inc.
- ❖ Asthana, B. (2008). Measurement and Evaluation in Psychology and Education. Agra: Agrawal Publications.
- ❖ Bhargava, M. and Mathur, M. (2005). Psychometrics and Statistical Applications in Educational and Behavioural Sciences. Agra: H. P. Bhargava Book House.

- ❖ Choube. P. S (1998). A Guide to Psychology Experiments and Statistical Formulas. Agra: Vinod Pustak Mandir.
- ❖ Ferguson, G.A. (1976). Statistical Analysis in Psychology and Education. Tokyo: McGraw Hill Kogakusha Limited.
- ❖ Guilford, J.P. and Fruchter, B. (1970). Fundamental Statistics in Psychology and Education. New York: McMillan Publishing Co., Inc.
- ❖ Gupta, C.B. and Gupta, V. (1995). An Introduction to Statistical Methods. Kanpur: Vikas Publishing Pvt. House.
- ❖ Lewis, R.A. (1979). Psychological Testing and Assessment. London: Allyn and Bacon, Inc.
- ❖ Mangal, S.K. (2002). Statistics in Psychology and Education. New Delhi: Prentice Hall of India.

Other Resources

- ❖ Internet
- ❖ Online Lectures on You Tube
- ❖ Journals and Research Reports

Suggested Activities for Students

- ❖ Cooperative Learning
- ❖ Participation in Seminars, Conferences, Webinars, Workshops, Extension Lectures etc.

Tasks & Assignments: Any one of the following

- ❖ Project on: Online Exam and On Demand Exam.
- ❖ Preparation of Diagnostic Test.
- ❖ Preparation of Achievement Test and Its Analysis.
- ❖ Preparation of Question Bank.
- ❖ Preparation of Cumulative Record of One Student during Teaching Practice.

CRSU, Jind 2015-17

M.Ed. Semester-III

COURSE-III

ADVANCED EDUCATIONAL RESEARCH

By: Dr. Ritu Bala

Time: 3 Hours

Max. Marks- 100 (Theory: 80, Internal: 20)

Credits: 4

Course Objectives:

After completion of the course, students are expected to:

- understand the concept of research and educational research
- understand the types and methods of educational research
- understand the steps involved in educational research
- develop inquisitive mind and spirit of inquiry
- develop competency to plan, execute and report research in the educational field
- understand the use of different tools and techniques in educational research
- understand the role and use of statistics in educational research understand the basic educational statistics and select the appropriate statistical methods in educational research

Course Content Analysis:

Chapter/ Topic	Lecture	Dates	Academic Activity to be Organized	Evaluation
Week 1				
Orientation		25.09.2017 to 29.09.2017		
Week 2				

Unit 1: Methods of Research	1-16	03.10.17-26.10.17	Presentations, Induction-Deduction, Lectures, Interactions, Guided Discussions	Oral & Written
Basic Concepts of Research	1	03.10.17	Revision through Discussions & Interactions	
	2	04.10.17	Oral Test	
Descriptive Research	3	06.10.17	Inductive-Deductive Approach	
	4	07.10.17	Guided Discussion	
Week 3				
Historical Research	5	09.10.17	Inductive-Deductive Approach	
	6	10.10.17	Guided Discussion	
Experimental Research	7	11.10.17	Inductive-Deductive Approach	
	8	12.10.17	Guided Discussion	
Experimental Designs	9	13.10.17	Inductive-Deductive Approach	
	10	14.10.17	Guided Discussion & Drill Work	
Week 4				
Qualitative Approaches of Research: Ethnography	11	16.10.17	Inductive-Deductive Approach	
	12	17.10.17	Guided Discussion	
Week 5				
Case Study	13	23.10.17	Inductive-Deductive Approach	
	14	24.10.17	Guided Discussion	
Comparison between different Methods of Research	15	25.10.17	Group Discussions followed by Oral/Written Presentations	
Revision and Solutions to Queries – Unit1	16	26.10.17	Interaction & Discussion	
Unit 3: Tests of significance	17-38	27.10.17-25.11.17	Induction, Problem-Solving, Discussions, Interactions, Drills	Oral & Written

Revision: Basic Concepts & Formulae of Statistics	17	27.10.17	Revision through Discussions & Interactions, Oral Test
Week 6			
Concept of Null hypothesis, Standard Error	18 19	28.10.17 02.11.17	Inductive-Deductive Approach Guided Discussion
Type I & Type II error, One Tail & Two Tail test	20 21	03.11.17 06.11.17	Inductive-Deductive Approach Guided Discussion
Week 7			
Significance of Statistics	22-26	07.11.17-11.11.17	Lecture-cum-Discussion
Week 8			
Significance of percentage	27 28	13.11.17 14.11.17	Problem-solving with Active Participation of Students Generalization of Steps of Computation
Significance of Proportion	29 30	15.11.17 16.11.17	Problem-solving with Active Participation of Students Generalization of Steps of Computation
Significance of Correlation	31 32 33	17.11.17-20.11.17	Problem-solving with Active Participation of Students Generalization of Steps of Computation
Week 9			
Significance of difference between Means- Z- test	34 35	21.11.17 22.11.17	Problem-solving with Active Participation of Students Generalization of Steps of Computation

Significance of difference between Means t- test	36	23.11.17	Problem-solving with Active Participation of Students	
	37	24.11.17	Generalization of Steps of Computation	
Revision and Solutions to Queries – Unit 3	38	25.11.17	Interaction & Discussion	
Unit 2: Tools and Techniques of Data Collection	39-50	27.11.17-11.12.17	Storytelling, Lectures, Visit, Reviews, Workshops, Experiments, Discussions, Interactions	Oral & Written
Week 10				
Characteristics of a Good Research Tool	39	27.11.17	Storytelling, Lecture, Discussion	
Questionnaire: Characteristics and Uses	40	28.11.17	Lecture, Experiment, Discussion	
Observations: Characteristics and Uses	41	29.11.17	Lecture, Experiment, Discussion	
Interview: Characteristics and Uses	42	30.11.17	Lecture, Experiment, Discussion	
Psychological Tests: Characteristics and Uses	43	01.12.17	Lecture, Experiment, Discussion	
Week 11				
Rating Scales: Characteristics and Uses	44	04.12.17	Lecture, Experiment, Discussion	
Socio-metric Techniques in Research: Characteristics and Uses	45	05.12.17	Lecture, Experiment, Discussion	

Comparison between Different Tools & Techniques	46	06.12.17	Workshop and Discussions	
Writing Research Report- Characteristics, steps and importance	47 48 49	07.12.17 08.12.17 09.12.17	Lectures followed by Library Visit Reviews & Discussions Workshop	
Week 12				
Revision and Solutions to Queries – Unit 2	50	11.12.17	Interaction & Discussion	
Unit 4: Statistics	51-73	12.12.17-27.01.18	Induction-Deduction, Problem-Solving, Discussions, Interactions, Drills	
Week 13				
ANOVA(One Way): Meaning, Assumptions, Computations & Uses	51 52,53,54 55, 56 57,58	11.12.17-20.12.17	Lecture Problem-solving with Active Participation of Students Generalization of Steps of Computation Revision	
Regression and Prediction: Concept, uses, assumptions	59 60	21.12.17 22.12.17		
Week 14				
Computations of Linear Regression Equation	61 62	23.12.17 27.12.17	Problem-solving with Active Participation of Students Generalization of Steps of Computation	
Standard Error of Measurement	63	28.12.17	Lecture cum Inductive-Deductive Approach, Guided Discussion	

Meaning of Non Parametric tests	64	29.12.17	Lecture cum Inductive-Deductive Approach, Guided Discussion
Week 15,16		Winter Break	
Week 17			
Chi-Square Test of Equality: Concept, Computation and Uses	65	15.01.18	Lecture, Problem-solving with Active Participation of Students
	66	16.01.18	Generalization of Steps of Computation, Discussions
Chi-Square Test of Independence: Concept, Computation and Uses	67	17.01.18	Lecture, Problem-solving with Active Participation of Students
	68	18.01.18	Generalization of Steps of Computation, Discussions
Median Test: Concept, Computation and Uses	69	19.01.18	Lecture, Problem-solving with Active Participation of Students
	70	20.01.18	Generalization of Steps of Computation, Discussions
Week 18			
Sign Test: Concept, Computation and Uses	71	23.01.18	Lecture, Problem-solving with Active Participation of Students
	72	25.01.18	Generalization of Steps of Computation, Discussions
Revision and Solutions to Queries – Unit 4	73	27.01.18	Interaction & Discussion
Week 19			
Extension Lecture	74	29.01.18	Extension Lecture
Revision, Discussion and Solutions to Queries	75	30.01.18	Interaction & Discussion

related to Extension Lecture				
Revision, Discussion and Solutions to Queries – Unit 1	76	01.02.18	Interaction & Discussion	
Unit Test – Unit 1	77	02.02.18	Oral Test	
Revision, Discussion and Solutions to Queries – Unit 2	78	03.02.18	Interaction & Discussion	
Week 20				
Unit Test – Unit 2	79	05.02.18	Oral Test	
Revision, Discussion and Solutions to Queries – Unit 3	80	06.02.18	Interaction & Discussion	
Unit Test – Unit 3	81	07.02.18	Written Test	
Revision, Discussion and Solutions to Queries – Unit 4	82	08.02.18	Interaction & Discussion	
Unit Test – Unit 4	83	09.02.18	Written Test	
Discussion and Solutions to Queries	84	10.02.18	Interaction & Discussion	
Week 21				
Internal Exams	85 onwards	11.02.18 onwards		

Suggested Resources

Books

- ❖ Aggarwal, Y. P. (1998). *Statistical Methods*. New Delhi: Sterling.
- ❖ Best, J. W. and Kahn, J. V. (1995). *Research in Education*. New Delhi: Prentice Hall.
- ❖ Burns, R. B. (1991), *Introduction to Research in Education*. New Delhi: Prentice Hall.
- ❖ Adward, Allen Literacy (1968). *Experimental designs in Psychological Research*. New York: Holt, Rinehart and Winston.
- ❖ Ferguson, G. A. (1976). *Statistical Analysis in Psychology and Education*. New York: McGraw Hill.
- ❖ Garrett, H. E. (1973). *Statistics in Psychology and Education*. Bombay: Vakils, Feiffer and Simon.
- ❖ Good, C.V. and Douglas, E. S. (1954). *Methods in Social Research*. New York: McGraw Hill.
- ❖ Guilford, J.P. and Benjamin, F. (1973). *Fundamental Statistics in Psychology and Education*. New York: McGraw Hill.
- ❖ Kerlinger, F. N. (1973). *Foundation of Behavioural Research*. New York: Holt, Rinehart and Winston.
- ❖ Koul, L. (1988). *Methodology of Research*. New Delhi: Vikas.
- ❖ Kurtz, A.K. and Mayo S.T. (1980). *Statistical Methods in Psychology and Education*. New Delhi: Narela.
- ❖ Lindquist, E.F. (1970). *Statistical Analysis in Educational Research*, New Delhi, Oxford and IBH publishing House.

Other Resources

- ❖ Internet
- ❖ Online Lectures on You Tube
- ❖ Journals and Research Reports

Suggested Activities for Students

- ❖ Cooperative Learning

- ❖ Participation in Seminars, Conferences, Webinars, Workshops, Extension Lectures etc.

Tasks & Assignments: Any one of the following

- ❖ Administration and interpretation of any one tool i.e. psychological test, questionnaire etc.
- ❖ Identify five research problems and prepare at least five research questions/hypotheses for each.
- ❖ Identification of variables of any research study and classification of them in terms of functions and level of measurement.
- ❖ Use of t-test in any research work in the light of Two-tailed and one-tailed tests of significance and its explanation.
- ❖ Preparation of Report of Participations in at least 2 outdoor Educational Seminars/Conferences/Webinars/Workshops/Extension Lectures/Any such Activity