
Course Code: BEDICC001

Core Course

B.Ed. Degree Programme

Semester-I

Perspectives on Education

(4 Credits – 120 Hours)

***✍* COURSE OBJECTIVES:**

On the successful completion of the course, the student teacher will be able to:

1. develop overall understanding of education and philosophy.
2. analyse the educational implications of Indian schools of philosophy and thinkers on education.
3. evaluate the impact of Western philosophies and thinkers on Indian Education
4. understand the educational heritage of ancient India
5. create an attitude on the education during Medieval and British period

Unit- I: EDUCATION AND PHILOSOPHY

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Defines education 2. Recognizes the differences among formal, informal and non-formal education 3. Recognizes the aims and functions of education 4. Recognizes the role of family, community, school and media as agencies of education. 5. Explains the relationship between education and philosophy	1.1 Education: Meaning, definition, nature and scope (formal, informal and non-formal) 1.2 Functions of education 1.3 Aims of education - (individual, social and national) and the four pillars of education. 1.4 Agencies of education – family, community, school and media. 1.5 Philosophy: meaning, definition and scope (meta - physics, epistemology and axiology). 1.6 Relationship between philosophy and education	<ul style="list-style-type: none"> • Seminar • Assignment • Lecture • Peer learning 	<ul style="list-style-type: none"> • Observation • Assignment • Report of discussion • Tests (oral & written) • Report of seminar

Unit-II: INDIAN SCHOOLS OF PHILOSOPHY AND EDUCATIONAL THINKERS

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Analyses the educational implications of Indian schools of philosophy 2. Analyses the contributions of Thinkers towards education	2.1. Indian schools of philosophy- 2.1.1 Vedanta, 2.1.2 Buddhism and 2.1.3 Jainism (Educational implications – aims, curriculum, methodology, and discipline) 2.2. Educational thoughts 2.2.1 Thiruvallavur 2.2.2. Swami Vivekananda, 2.2.3. Rabindranath Tagore 2.2.4. Mahatma Gandhi, (contributions on education)	<ul style="list-style-type: none"> • Seminar • Assignment • Lecture • Peer learning • Small group discussion 	<ul style="list-style-type: none"> • Observation • Assignment • Report of discussion • Tests (oral & written) • Report of seminar

Unit-III: WESTERN SCHOOLS OF PHILOSOPHY AND EDUCATIONAL THINKERS

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Evaluates the educational implications of western schools of philosophy 2. Evaluates the contributions of thinkers towards education	3.1 Idealism, 3.2 Naturalism and 3.3 Pragmatism (Educational implications – aims, curriculum, methodology, and discipline) 3.4 Educational thoughts 3.4.1. Rousseau, 3.4.2. Dewey 3.4.3 Paulo Freire 3.4.5. Ivan Illich	<ul style="list-style-type: none"> • Seminar • Assignment • Lecture • Peer learning • Small group discussion 	<ul style="list-style-type: none"> • Observation • Assignment • Report of discussion • Tests (oral & written) • Report of seminar

Unit- IV: EDUCATIONAL HERITAGE OF ANCIENT INDIA

Learning Outcome	Content	Suggested strategies and Approaches	Assessment
1. Recognises the Educational Heritage of Ancient India 2. Explains Universities in Ancient India. 3. Analyses education in ancient TamilNadu	4 .1.Education in Ancient India. 4.1.1Vedic period, 4.1.2Jain period and 4.1.3Buddhist period (schools, role of the teacher, nature of educational institutes). 4.2 Universities in Ancient India: 4.2.1.Vikramshila 4.2.2.Takshashila, 4.2.3.Nalanda and 4.2.4.Valabhi 4.3. Education in ancient Tamilnadu	<ul style="list-style-type: none"> • Seminar • Assignment • Lecture • Peer learning • Small group discussion 	<ul style="list-style-type: none"> • Observation • Assignment • Report of discussion • Tests (oral & written) • Report of seminar

Unit- V: EDUCATION DURING MEDIEVAL AND BRITISH PERIOD

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Describes the education during medieval period 2. Explains education during British period	5.1 Education during Medieval Period (aims, schools, role of the teacher, nature of educational institutes). 5.2 Education during British period: 5.2.1. Charter Act of 1813 5.2.2. Macaulay's Minutes 5.2.3. Wood's Despatch – 1854 5.2.4. Wardha Scheme of Education and 5.2.5. Sargent Report – 1944	<ul style="list-style-type: none"> • Seminar • Assignment • Lecture • Peer learning • Small group discussion 	<ul style="list-style-type: none"> • Observation • Assignment • Report of discussion • Tests (oral & written) • Report of seminar

SUGGESTED ACTIVITIES (any two)

1. Prepare a report on the importance of home, school, community and media in quality education.
2. Prepare a presentation on educational heritage of ancient India
3. Prepare a report on educational implications of Indian schools of philosophy
4. Prepare report on the relevance of Vedic/ Buddhist/ Islamic educational ideas for present school education.

📖 PRESCRIBED READINGS

1. Aggarwal, J.C. (2012) Development of education system in India. Delhi: Shipra Publications.
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6. Mukherji, S.M., (1966). *History of Education in India*, Acharya Book Depot, Baroda
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8. Naik, J.P. & Syed, N., (1974). *A Student's History of Education in India*, MacMillan, New Delhi.
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10. Pruthi.R.K (2017) *Education in Ancient India*, Sonali publications, New Delhi
11. Tedesco Juan Carlos.(1994.) *Thinkers On Education*. Unesco Publishing Oxford IBH Publishing.
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Course Code:BED1CC002

Core Course

B.Ed. Degree Programme
Semester- I
CHILD AND DEVELOPMENT
 (4 Credits - 120 Hours)

✍ COURSE OBJECTIVES:

On successful completion of the course, the student teacher will be able to:

1. acquire knowledge on educational psychology and child psychology
2. understand the basic concepts of development with reference to childhood to adolescence.
3. analyse the dimensions of development across different stages of development
4. develop skills in adopting appropriate strategies to deal the individual differences of child and adolescent.
5. apply the conceptual and theoretical perspectives of personality, adjustment and mental health in the classroom situation.

Unit- I: INTRODUCTION TO PSYCHOLOGY

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Explains the meaning, nature, and branches of psychology 2. Defines the meaning, scope of educational psychology. 3. Applies relevance of educational psychology in the classroom 4. Identifies the importance of child psychology 5. Describes the various methods and techniques of psychology	1.1 Psychology: meaning, nature and branches. 1.2 Educational Psychology: meaning, nature, scope and relevance of educational psychology to teacher. 1.3 Child Psychology: meaning, scope and importance 1.4 Methods of psychology: 1.4.1 Introspection 1.4.2 Observation 1.4.3 Interview 1.4.4 Case-study 1.4.5 Clinical method 1.4.6 Experimental method 1.4.7 Cross sectional and Longitudinal Methods.	<ul style="list-style-type: none"> • Lecture/briefing • Group discussion • Assignment • Seminar through visual presentation • QA session • Peer learning 	<ul style="list-style-type: none"> • Test (written/oral) • Assignment • Seminar

Unit-II: BASIC CONCEPTS OF DEVELOPMENT

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Explains the meaning, characteristics and principles of development 2. Identifies the various stages of development. 3. Describes the characteristics of childhood and adolescence 4. Analyses the factors affecting development 5. Realizes the present scenario, problems and needs of children and adolescents 6. Classifies the developmental tasks of children.	2.1 Growth and development: Meaning and characteristics 2.1.1 Principles of development. 2.1.2 Factors affecting development 2.1.3 Stages of development. 2.2 Developmental tasks. 2.3 Childhood: Meaning, nature& characteristics 2.4 Adolescence: meaning, nature& characteristics 2.5 Problems of development with reference to childhood to adolescence: 2.5.1 Child abuse, 2.5.2 Anxiety disorders 2.5.3 Depression 2.5.4 Delinquency 2.5.5 Eating disorders	<ul style="list-style-type: none"> • Lecture through visual presentation • Group discussion • Assignment • Seminar • Talk by experts • Debate • Brainstorming • Peer learning 	<ul style="list-style-type: none"> • Test(written/oral) • Assignment

Unit-III DIMENSIONS AND THEORIES OF DEVELOPMENT

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Analyzes the characteristics and educational implications of various dimensions of development with reference to childhood to adolescence. 2. Explains the factors influencing various dimensions of development. 3. Applies the implication of various theories in the classroom context.	3.1 Characteristics and educational implications 3.1.1 Physical and motor development. 3.1.2 Cognitive development. 3.1.3 Emotional development 3.1.4 Social development 3.1.5 Moral development 3.1.6 Language development 3.2 Influence of socio-cultural factors on various dimensions of development. 3.2.1 Family 3.2.2 School 3.2.3 Peer group 3.2.4 Community 3.2.5 Society 3.2.6 Media 3.2.7 Urbanization, Globalization 3.2.8 Economic change and Climate change) 3.3 Theories of development 3.3.1 Cognitive development: Piaget and Bruner 3.3.2 Psycho-sexual development: Freud 3.3.3 Psycho-social development: Erikson 3.3.4 Moral development: Kohlberg 3.3.5 Language development: Chomsky and Vygotsky.	<ul style="list-style-type: none"> • Lecture through visual presentation • Group discussion • Assignment • Seminar • Talk by experts • Panel discussion • Brainstorming 	<ul style="list-style-type: none"> • Test (oral/written) • Assignment

Unit-IV: INDIVIDUAL DIFFERENCES

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Identifies the areas of individual differences	4.1 Areas of individual differences	<ul style="list-style-type: none"> • Lecture/briefing • Group discussion • Assignment • Seminar • Peer learning • Talk by expert • QA session • Debate 	<ul style="list-style-type: none"> • Test (written/ oral) • Assignment evaluation • Seminar
2. Explains the concept of intelligence	4.1.1 Attitude		
3. Analyses the theories of intelligence	4.1.2 Interest		
4. Analyses the merits and demerits intelligence tests	4.1.3 Values		
5. Explains the concept of creativity.	4.1.4 Aptitude		
	4.2 Intelligence: concept, definitions.		
	4.3 Theories of intelligence:		
	4.3.1 Spearman' two factor		
	4.3.2 Guilford' structure of intellect		
	4.3.3 Thurstone's group factor		
	4.3.4 Gardner's multiple intelligence		
	4.4 Intelligence tests : types merits and demerits		
	4.5 Creativity-meaning and nature		
	4.5.1 Characteristics of creative learner		
	4.5.2 Process of creativity		
	4.5.3 Teacher's role in fostering creativity		

Unit-V: PERSONALITY, ADJUSTMENT AND MENTAL HEALTH

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Explains the meaning and characteristics 2. Analyses the theories of personality and their implications 3. Describes various techniques to assess the personality of an individual. 4. Applies the mechanisms of adjustment in various situation 5. Identifies the role of teachers for improving of mental health of child	5.1 Personality: meaning, and characteristics, 5.2 Theories of personality: 5.2.1 Type theory 5.2.2 Trait theory 5.2.3 Type cum Trait theory 5.2.4 Freud's Psychoanalytic theory 5.3 Assessment of Personality 5.3.1 objective techniques 5.3.2 subjective techniques 5.3.3 projective techniques 5.4 Adjustment: Meaning, and importance 5.4.1 Mechanisms of adjustment 5.4.2 Maladjustment– Concept and its effect. 5.5 Mental health: Meaning, factors influencing mental health. 5.5.1 Role of teacher on improving mental health of children.	<ul style="list-style-type: none"> • Lecture through visual presentation • Group discussion • Assignment • Seminar through visual presentation • Peer learning 	<ul style="list-style-type: none"> • Test (written/ oral) • Assignment • Seminar

SUGGESTED ACTIVITIES (Any two)

1. Prepare a report on various types child abuse.
2. Prepare a report on the current issues of adolescence and suggest suitable remedies.
3. Study the mental health of high school students and prepare a report on it.
4. List out the various activities to promote multiple intelligences

📖 PRESCRIBED READINGS

1. Agarwal.J.C.(2004).*Essentials of educational psychology*. NewDelhi: Vikas Publishing House.
2. Agarwal.J.C. (200). *Basic ideas in educational psychology*. New Delhi: Shipra publications.
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2. AnitWoolfolk (2003). *Educational psychology*. New Delhi: Pearson Education India.
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Course Code: BEDIPC001

Pedagogic Course

B.Ed. Degree Programme
Semester- I
ASSESSMENT OF LEARNING
 (4 Credits- 120 Hours)

 **COURSE OBJECTIVES:**

On successful completion of the course, the student teacher will be able to:

1. acquire knowledge about assessment and evaluation
2. develop skills related to tools and techniques of evaluation
3. analyse the practices and trends in evaluation
4. appreciate the role of teacher as an evaluator
5. apply the essential statistics in the process of evaluation

Unit- I: INTRODUCTION TO EVALUATION

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Recognizes the relevance of measurement, assessment and evaluation in teaching learning process 2. Identifies the functions of assessment 3. Differentiates the various types of evaluation	1.1 Measurement, Assessment and Evaluation -meaning and relevance 1.2 Functions of Assessment- assessment for learning and assessment of learning 1.3 Types of Evaluation 1.3.1. Formative and Summative 1.3.2. Internal and External 1.3.3. Norm-referenced and Criterion-referenced.	<ul style="list-style-type: none"> • Discussion • Lecture • Peer learning • Seminar • Digital presentation 	<ul style="list-style-type: none"> • Test (oral/written) • Assignment • Seminar

Unit- II: TOOLS AND TECHNIQUES OF EVALUATION

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Outlines the various tools for evaluation 2. Describes the appropriate techniques for evaluation 3. Recognises the characteristics of a good evaluation tool	2.1. Assessment Tools - concept, merits, demerits 2.1.1. Tests, 2.1.2. Checklist, 2.1.3. Rating scale, 2.1.4. Cumulative record, 2.1.5. Questionnaire, 2.1.6. Inventory, 2.1.7. Schedule, 2.1.8. Anecdotal record 2.2 Techniques of Assessment: 2.2.1. Observation 2.2.2. Interview 2.2.3. Self Reporting. 2.3 Characteristics of a good evaluation tool : 2.3.1. Validity and 2.3.2. Reliability, Objectivity and Practicability.	<ul style="list-style-type: none"> • Seminar • Group discussion • Workshop • Peer learning • Discussion • Lecture-demonstration • Demonstration • Assignment • Digital presentation 	<ul style="list-style-type: none"> • Test (oral/written) • Tool construction • Observation • Assignment • Seminar

Unit- III: PRACTICES AND TRENDS IN ASSESSMENT AND EVALUATION

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Lists out the practices in assessment and evaluation	3.1 Competency-based evaluation	• Lecture	• Test (oral /written)
	3.2 Outcome based evaluation	• Discussion	• Assignment
	3.3 Skill India Mission	• Digital presentation	• Seminar
2. Explores the current trends in assessment and evaluation	3.4 National Testing Agency	• Peer learning	• Report writing
	3.5 Recent trends and practices in assessment and evaluation	• Seminar	• Debate
3. Recognises participatory assessment	3.5.1 Portfolios	• Debate	
	3.5.2. Rubrics	• Invited Talks	
	3.5.3 Open book examination		
4. Identifies the drawbacks of present evaluation	3.5.4 Peer assessment		
	3.5.5 Online and on-demand assessment		
	3.5.6 Continuous and comprehensive evaluation		
	3.5.7 Grading-direct and indirect.		
	3.6. Digital tools for assessment - Secretive, Google Forms, Mentimeter, Kahoot.		
	3.7 Participatory assessment		
	3.8 Drawbacks of present assessment system.		

Unit- IV: STATISTICS IN EDUCATION

Learning Outcomes	Content	Suggested Strategies and Approaches	Assessment
1. Identifies the need and importance of statistics in education 2. Lists out the types of graphical representation of data	4.1 Statistics in education: Need and importance of 4.2 Classification and tabulation of data 4.3 Graphical representation of data 4.3.1 Bar diagram 4.3.2 Histogram 4.3.3 Pie diagram 4.3.4 Frequency polygon 4.3.5. Cumulative Frequency curve.	<ul style="list-style-type: none"> • Lecture • Peer learning • Group discussion • Assignment method 	<ul style="list-style-type: none"> • Class test • Presentation of report • Home assignment

Unit- V: STATISTICAL METHODS OF ANALYSIS

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Recognises the statistical methods of analysis. 2. Explains correlation and its types. 3. Illustrates the various statistical method of analysis. 4. Uses the statistical methods to solve problems.	5.1 Statistical methods of analysis 5.1.1 Measures of central tendency - Mean, Median, Mode. 5.1.2 Measures of variability: a) Mean deviation b) Quartile deviation c) Standard Deviation 5.2. Measures of Relationship 5.2.1 Concept 5.2.2 Types of Correlation 5.2.3 Coefficient of correlation, 5.2.4 Spearman's Rank Order Correlation. 5.2.5 Pearson's Product Moment Correlation 5.3 Percentile and percentile ranks. 5.4 Normal distribution 5.4.1 Normal probability curve and its characteristics	<ul style="list-style-type: none"> • Lecture • Peer learning • Group discussion • Assignment method 	<ul style="list-style-type: none"> • Class test • Presentation of report • Home assignment

SUGGESTED ACTIVITIES (Any two):

1. Conduct a group discussion on the role of students and teachers in formative assessments. Identify the barriers for conducting formative assessments.
2. Prepare an online tool for measuring any of the affective outcomes of the learner, administer it to a group of students (N>30) and interpret the result.
3. Visit a nearby school and collect information from teachers regarding the recent trends in the present assessment system and prepare a report.
4. Find out the coefficient of correlation existing between two sets of scores in school subjects.

📖 PRESCRIBED READINGS

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10. Pathak (2012). *Measurement and Evaluation in Education*, New Delhi: Pearson Education.
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📖 SUGGESTED READINGS

1. Care, Esther, Mc Graw, Barry & Griffin, Patrick (2012). *Assessment and Teaching of 21st Century Skills*. New York: Springer.
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Course Code:BED1PC002

Pedagogic Course

B.Ed. Degree Programme**Semester-I****THEORETICAL BASES OF BIOLOGICAL SCIENCE EDUCATION**

(4 Credits - 120 Hours)

✍ COURSE OBJECTIVES:*On successful completion of the course the student teacher will be able to*

1. understand the aims and objectives of teaching Biological Science
2. develop skill in planning and preparation of lesson plans
3. comprehend different methods and techniques of teaching Biological Science
4. understand various evaluation techniques
5. appreciate various resources for teaching Biological Science.

Unit- I: AIMS AND OBJECTIVES OF TEACHING BIOLOGICAL SCIENCE

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Identifies the nature, aims and objectives of teaching Biological Science 2. Differentiates between general and specific instructional objectives	1.1 Nature of Science- Science as a product and process 1.2 Aims and objectives of teaching Biological science 1.3 General and specific instructional objectives based on Bloom's taxonomy 1.4 Bloom's Taxonomy (Revised)	<ul style="list-style-type: none"> • Briefing/Lecture • Discussion • Seminar • Digital visual presentation • Question answer session 	<ul style="list-style-type: none"> • Tests (Written/Oral) • Questioning • Seminar presentation

Unit- II: PLANNING OF INSTRUCTION

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Identifies the steps in developing unit plan and lesson plan 2. Compares unit plan and lesson plan 3. Prepares unit plan and lesson plan	2.1. Year plan 2.2 Unit plan 2.2.1.Criteria of a good unit 2.2.2.Steps in unit plan 2.3 Lesson plan 2.3.1.Importance of planning a lesson 2.3.2.Characteristics of lesson plan 2.3.3.Herbartian steps in lesson planning 2.3.4.Lesson plan preparation based on Active Learning Methodology	<ul style="list-style-type: none"> • Lecture • Group discussion • Peer learning • Workshop • Lesson plan preparation 	<ul style="list-style-type: none"> • Lecture • Group discussion • Peer learning • Workshop • Lesson plan preparation

**Unit- III: METHODS AND TECHNIQUES OF TEACHING BIOLOGICAL
SCIENCE**

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Identifies the methods and techniques of teaching Biological Science 2. Selects most appropriate methods and techniques to transact the content	3.1 Methods of instruction 3.1.1 Lecture method 3.1.2 Demonstration 3.1.3 Laboratory method 3.1.4 Project method 3.1.5 Heuristic method 3.1.6 Assignment method 3.1.7 Activity based learning 3.1.8 Active learning methodology 3.2. Techniques of Teaching 3.2.1. Panel discussion 3.2.2. Brainstorming 3.2.3. Role playing 3.2.4. Seminar, 3.2.5. Symposium 3.2.6. Buzz Session	<ul style="list-style-type: none"> • Lecture • Group discussion • Brainstorming • Digital Visual Presentation • Assignment • Seminar 	<ul style="list-style-type: none"> • Questioning • Observation • Test (oral/ written) • Observation of teaching • Assignment evaluation • Seminar presentation

Unit-IV: EVALUATION IN BIOLOGICAL SCIENCE

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Identifies different types of evaluation 2. Prepares different types of test items 3. Constructs and administers achievement test and diagnostic test	4.1. Concept of Evaluation 4.2. Objective based evaluation 4.3. Formative and summative evaluation 4.4. Different types of test items 4.5. Types of tests 4.5.1 Achievement Test 4.5.2 steps in construction 4.5.3 Diagnostic test- steps in construction 4.5.3 Prognostic test	<ul style="list-style-type: none"> • Lecture • Discussion • Workshop • Digital presentation 	<ul style="list-style-type: none"> • Tests (written/oral) • Preparation of objective based test items • Construction & administration of achievement test and diagnostic test

Unit-V: RESOURCES FOR TEACHING BIOLOGICAL SCIENCE

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Identifies various supporting materials useful for learning Biological Science 2. Prepares different visual resources	5.1 Print resources 5.1.1. Textbooks- qualities of a biology text book. 5.1.2. Workbook 5.1.3. Journals 5.1.4. Newspapers 5.1.5. Science encyclopedias 5.2 Visual resources- charts, flashcards models, posters Photographs 5.3 ICT resources- Smart phone, Internet Interactive whiteboard 5.4 Community resources– 5.4.1. Zoological gardens, 5.4.2 Botanical gardens 5.4.3 Aquarium 5.5 Laboratory and its organization 5.5.1. Laboratory plan 5.5.2. Laboratory registers and Lab rules	<ul style="list-style-type: none"> • Lecture • Group discussion • Seminar • Debate • Auto instruction • Digital visual presentation 	<ul style="list-style-type: none"> • Observation • Questioning • Tests (written/oral) • Reports • Tests • Preparation of visual resources

SUGGESTED ACTIVITIES (Any Two)

1. Prepare a unit plan in Biology for high school class.
2. Prepare a lesson plan based on Active Learning Methodology.
3. Select a unit and prepare visual resources for teaching Biological Science.
4. Prepare laboratory instruction cards for anyone standard.

📖 PRESCRIBED READINGS

1. Ameeta. P (2010). *Techniques of teaching Biological Science*. New Delhi: Neel Kamal Publications Pvt. Ltd.
2. Anju Soni. (2005). *Teaching of Biological Science*. Ludhiana: Tandon Publications.
3. Das R.C. (1992). *Teaching of Science Amritsar* M/S Krishna Bros.
4. Jasim, Ahmad. (2011). *Teaching of Biological Science*, New Delhi: PHI Learning.
5. Mangal .S.K. (2005). *Teaching of Biology*. Meerut: Chandigarh Loyalk Publications.
6. Sharma .R.C (1984) *Modern Science teaching*. Meerut: Dhanpatrai and sons.
7. Sivarajan & Faziluddin.A. (2005) *Science Education Calicut*: Calicut University Central Co-operative stores Ltd.
8. Sood J.K. (1985), *Teaching Life Science*. Delhi: Kohli Publications.
9. Sudha, Pahuja. (2010). *Teaching of Biological Sciences*. Meerut: R.Lall Book Depot.
10. Yadav M.S (2003) *Teaching of Science*, New Delhi: Anmol publication.

📖 SUGGESTED READINGS

1. Buffaloe, Neal, Thronberry. J.B. (1972) *Principles of Biology*. University press. New Delhi: Prentice Hall of India Ltd.
2. Saunders. H.N (1967). *The teaching of General Science in Tropical Secondary School*. London: Oxford University Press.
3. Bhatnagar.A.B. & Bhatnagar S.S (2010) *Teaching of Science*. Meerut: R. Lall Book Depot.
4. Bhuvanewara, Lakshmi, G.Subba Rao. K. & Digumarti Bhaskara Rao (2006). *Methods of teaching Biology*. New Delhi: Discovery publishing house.
5. S.P.Kulshreshtha. (2010). *Teaching of Science*, Meerut: R.Lall Book Depot.
6. Marlow Ediger. & D.Bhaskara Rao. (2005) *Teaching Science Successfully*. New Delhi: Discovery publishing house.

Course Code: BED1PC003

Pedagogic Course

B.Ed. Degree Programme

Semester-I

THEORETICAL BASES OF ENGLISH EDUCATION

(4 Credits -120 Hours)

***📖* COURSE OBJECTIVES:**

On successful completion of the course, the student teacher will be able to

1. comprehend the aims and objectives of language teaching.
2. familiarise with the sound system of English language.
3. develop skill in preparing teaching manuals by incorporating relevant activities for effective teaching.
4. synthesize with the methods and approaches for use in the English classroom.
5. evaluate the effective use of learning resources.

Unit- I: AIMS AND OBJECTIVES OF TEACHING ENGLISH

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Identifies the aims, objectives and divergent role of language in life. 2. Familiarizes the sound system of English. 3. Classify the Bloom's taxonomy based on domains.	1.1 Nature and Scope of Language 1.1.1.Role of Language in Life 1.1.2.History of English language in India 1.1.3.Importance of English Language Learning 1.1.4.Language Skills – LSRW 1.2 Phonology-Organs of speech- Classification of Consonants ,Vowels and Diphthongs- Received Pronunciation 1.3 Blooms Taxonomy of educational objectives (Revised)	<ul style="list-style-type: none"> • Lecture-discussion • Seminar • Oral drill • Small Group Discussion 	<ul style="list-style-type: none"> • Test (written/oral) • QA Session • Seminar Presentation • Practice tests

Unit- II: PLANNING FOR INSTRUCTION

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Designs teaching plans for different lessons	3.1 Year plan, unit plan, lesson plan 3.2 Teaching of poetry, prose, composition, grammar, supplementary readers and vocabulary 3.3 Designing lesson plans for teaching /learning poetry, prose, composition, grammar and supplementary texts.	<ul style="list-style-type: none"> • Demonstration by experts • Practice under guidance • Preparation of Group/individual lesson plan/ teaching manual 	<ul style="list-style-type: none"> • Observation • Submission of lesson Plans/ teaching manuals • Discussion Lessons / Criticism lessons

Unit- III: METHODS AND APPROACHES OF ENGLISH LANGUAGE TEACHING

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Identifies methods, approaches and theories of teaching/learning English.	4.1 Methods : Grammar Translation Method, Direct Method, Bilingual Method, Dr. West's Method. 4.2 Approaches: Situational Approach, Structural Approach Communicative Approach and Eclectic approach in language teaching.	<ul style="list-style-type: none"> • Lecture-discussion • Group discussion • Visual Presentation / Demonstration 	<ul style="list-style-type: none"> • QA Session • Evaluation of Assignments

Unit- IV: EVALUATION IN ENGLISH LANGUAGE TEACHING

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Recognizes the importance of evaluation in teaching learning process 2. Prepares achievement and diagnostic test 3. Suggests remedies for teaching English	4.1 Evaluation 4.1.1 Concept and Need 4.1.2 Importance 4.1.3 Qualities of good test 4.1.4 Formative and summative evaluation. 4.2 Types of test items 4.3 Different types of test 4.3.1 Achievement test 4.3.2 Diagnostic test 4.3.3 Prognostic test 4.4 Construction of an achievement test 4.5 Diagnostic test -Steps 4.6 Difference between achievement and diagnostic test 4.7 Remedial teaching in English	<ul style="list-style-type: none"> • Digital presentation • Group Discussion • Assignment 	<ul style="list-style-type: none"> • Test (oral/written) • Test construction • Seminar presentation

Unit- V: LANGUAGE LEARNING SUPPORT RESOURCES

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1 Identifies the various learning resources. 2 Recognizes the effective use of resources.	5.1 Teaching / learning resources-types 5.2 Pictures-Charts-Flash Card-Models-Radio Tape Recorder-Video Clips-Interactive White Board-LCD (liquid crystal display) Projector-Internet CALL, (Computer Assisted Language Learning) Language Lab, magazines, newspapers, discussion, debates, workshops, seminar	<ul style="list-style-type: none"> • ICT enabled group discussion. • Hands-on experience with resources Assignment. 	<ul style="list-style-type: none"> • QA Session • Quiz • Assignment Evaluation

SUGESTED ACTIVITIES- (Any Two)

1. Prepare a vowel and consonant chart.
2. Identify and prepare different types of visual resources for teaching English.
3. Prepare activities and tasks for effective teaching by including audio-video materials, Information Computer Technology and Internet.
4. Prepare a lesson plan for teaching English Vocabulary.

📖 PRESCRIBED READINGS

1. Alexander.L.G. (1975). *A first book in comprehension, précis and composition*. Longman: Hongkong.
2. Brewster Jean,Gail Elli.,S & Denis, Giraf (1992). *The primary English teacher's guide*. Penguin Books: London.
3. Choudhary.N.R. (2002). *English Language Teaching*, Himalaya Publish House, Mumbai.
4. Cameron, Lynne (2001).*Teaching language to young learners*. Cambridge University Press: Cambridge.
5. Dave, Pratima. S (2002). *Communicative Approach to the Teaching of Bachelor of Education English as a Second Language*. Mumbai: Himalaya Publishing House.

6. Kohli A.L (2001). *Techniques of teaching English in the new millennium*. NewDelhi: Dhanpat Rai.
7. Singh.Y.K. (2005). *Teaching of English*. NewDelhi: APH Publishing Corporation.
8. Balasubramaniyan .T. (2005). *A Text Book of English Phonetics for Indian students*. Chennai : Macmillan Publication India Limited.

SUGGESTED READINGS

1. Grillett. M (1983). *Developing Reading Comprehension*, London: CUP.
2. Halbe Malati. (2005). *Methodology of English Teaching*, Himalaya Publishing House.
3. Parrot. M (1993). *Tasks for the Classroom Teacher*, London: Pergamon.
4. Davis, Paul & Mario Rinvoluceri. (1988). *Dictation: New Methods, New Possibilities*. Cambridge Handbook for Language Teachers.
5. Prabhu.N.S. (1987). *Second Language Pedagogy*. New York: Oxford University Press.
6. Sahni, Geeta. (2006). *Suggested Methodology of Teaching English*.
7. Sunwani.V. K. (2005). *The English Language and Indian Culture*.

B. Ed. Degree Programme**Semester - I****THEORETICAL BASES OF HISTORY EDUCATION**

(4 Credits – 120 Hours)

✍ COURSE OBJECTIVES:*On successful completion of the course the student teacher will be able to:*

1. understand about the aims, objectives and values of teaching History.
2. analyze Bloom's Taxonomy of instructional objectives in teaching History.
3. develop skill in instructional planning and designing lesson transcripts.
4. apply the various modes of evaluation strategies in History at school level
5. develop interest in utilizing various resources in learning history.

Unit- I: CONCEPTS, AIMS AND OBJECTIVES OF TEACHING HISTORY

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Identifies the aims and objectives of teaching History	1.1 History – meaning and definitions 1.2 Rational of inclusion of History in school curriculum.	• Lecture • Discussion • Seminar • Visual presentation	• Test (Oral/written) • QA Session • Evaluating
2. Classifies the taxonomy of instructional objectives in teaching History	1.3 Aims and objectives of teaching History at different levels: i) Secondary, ii) Higher Secondary. 1.4 Values of teaching history 1.5 Bloom's Taxonomy of instructional objectives (Revised)	• Assignment writing	• Assignment

Unit- II: INSTRUCTIONAL PLANNING IN HISTORY

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Recognizes the need and importance of instructional planning in history. 2. List out the steps in writing lesson plan. 3. Practices in preparing unit plan and lesson plan	2.1 Need and importance of instructional plan. 2.2 Year plan and Unit plan: 2.2.1. characteristics of unit plan 2.2.2. Steps in unit plan 2.3. Lesson plan - meaning 2.3.1. Importance of planning a lesson 2.3.2. Criteria of a good lesson plan 2.3.3. Herbartian Steps 2.4. Comparison of Unit plan and Lesson plan.	<ul style="list-style-type: none"> • Lecture cum Discussion • Group discussion • Work shop on lesson plan writing • Peer learning 	<ul style="list-style-type: none"> • Assessing the lesson plan • Testing (oral/written) • QA Session

**Unit- III: INSTRUCTIONAL METHODS AND TECHNIQUES OF
TEACHING HISTORY**

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Analyzes the unique feature of different instructional methods suited for teaching History. 2. List out teacher centred methods and learner centred methods 3. Adopts appropriate methods for teaching History.	3.1. Factors determining selection of teaching method. 4.5 Methods and techniques for teaching History. 3.3. Teacher centered and Learner centered methods. 3.3.1. Lecture Method 3.3.2. Demonstration 3.3.4 Active Learning methodology 3.3.3. Dalton plan 3.3.4. Heuristic method 3.3.5. Project method 3.3.6. Source method 3.3.7. Problem solving method 3.3.8. Inductive and Deductive method 3.3.10 Brain storming	<ul style="list-style-type: none"> • Lecture cum Discussion • Report writing • Seminar • Peer learning • Interactive session 	<ul style="list-style-type: none"> • Test (Oral/Written) • QA session • Report writing • Assignment

Unit- IV: EVALUATION OF HISTORY

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Analyses the various modes of evaluation strategies in learning history 2. Constructs and administers different types of test items.	4.1 Concept of evaluation 4.2 Formative and Summative evaluation 4.3 Assessment Tools 4.4 Types of test items- 4.4.1. achievement test: steps in construction 4.4.2. diagnostic test 4.4.3. prognostic test 4.5 Remedial teaching 4.6 Peer evaluation	<ul style="list-style-type: none"> • Lecture cum discussion • Group Discussion • Visual Presentation • Assignment 	<ul style="list-style-type: none"> • Test (Oral/ Written) • QA Session • Evaluating Assignment

Unit-V: INSTRUCTIONAL RESOURCES IN TEACHING HISTORY

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Recognises the inevitable role of various instructional resources in effective instructional practices. 2. Locates and list out the important community resources in teaching history.	5.1. Instructional Resources– Types: 5.1.1 Text books 5.1.2 Workbook 5.1.3 Supplementary reading 5.1.4 Globe, Maps and Atlas: types and uses. 5.2. Historical Resources: palace, museum, forts, archives. 5.3. Community resources – importance 5.3.1. methods of utilizing community resources.	<ul style="list-style-type: none"> • Lecture • Discussion • Interactive session • Auto learning • Preparation of list of resources 	<ul style="list-style-type: none"> • Evaluating assignment • Test (Oral/ Written) • QA session • Evaluation of report writing

SUGGESTED ACTIVITIES (Any Two):

1. Prepare the instructional objectives and specifications based on revised Bloom's Taxonomy for teaching History.
2. Prepare a Year plan and Unit plan for Class VI.
3. Discuss any one current issue by organizing a brain storming session and prepare a report.
4. Prepare a report on various resources available in teaching/learning History at Secondary level.

📖PRESCRIBED READING:

1. Aggarwal. J.C.(2003). *Teaching of History: A Practical approach*. New Delhi: Sterling publications.
2. Bhata. R.L.(2004).*Contemporary teaching of History*.(2nd.ed.).New Delhi: Surjeet publications.
3. Chandra, S.S., Shara, Amit., Upadhayaya, A.K.(2014).*Teaching of social science*. Meerut: Newdelhi.

4. Dash. B.N. (1998). *Content and methods of teaching social studies*. Ludhiana: kalia publishers.
5. Kaur, Jaskiran Vir. (n.d.). *Teaching of History*. Ludhiana: Tandon Publications.
6. Kumar.S.P.K., & Nowshad.P.P. (2009). *Social studies in the classroom: Trends and methods*.
7. Kocchar. S.K. (1995). *Methods and techniques of teaching*. New Delhi: Sterling publishers.
8. Siddiqui, M.H.(2009). *Techniques of classroom teaching*. Newdelhi: APH Publishing corporation.
9. Sivarajan.K., Thulasideeran ., & Vijayan.N.K. (2007). *Social science education: Methods and techniques of teaching*. Calicut: Calicut university co-operative store.
10. Srinivas, Murthi., Rao, I Prasad., & Rao, Digumarti Bhaskara. (2004). *Methods of teaching History*. New Delhi: Discovery publishing.
11. Singh, Y.K. (2009). *Teaching of history: modern methods*. Newdelhi: APH publishing corporation.

SUGGESTED READING

1. Anderson.W. L., & Krathwohl. D.R. (2001). *Taxonomy of learning, teaching and assessing: A revision of Bloom's taxonomy of educational objectives. Handbook*. Newyork: Longman green &co.
2. Bloom.B.S.(1956). *Taxonomy of educational objectives: cognitive domain*. Newyork: David Mckay Co.
3. Bruner, Jerom.S. (1971). *Towards a theory of instruction*. Cambridge: Harward University press.
4. Clarck.L.H.(1974). *Teaching social studies in secondary school*. (2nded.). Newyork (NY): Mcmillian.
5. Dash.B.N.(1998). *Content and methods of teaching social studies*. Ludhiana: kalia publishers.
6. Deve, Pushkin (2009). *Methods and techniques of teaching*. New Delhi: Sterling publishers.
7. Edigar. M., & Rao. B (2003). *Teaching social studies successfully*. New Delhi: Discovery publishing house.
8. Finer. (1953). *Teaching techniques in social science*. Newyork: Bank street publishing.

B.Ed. Degree Programme**Semester-I****THEORETICAL BASES OF MATHEMATICS EDUCATION**

(4 Credits – 120 Hours)

📖 COURSE OBJECTIVES:*On successful completion of the course, the student teacher will be able to:*

1. acquire knowledge about the aims and objectives of teaching mathematics.
2. develop skill in planning instruction and lesson plan writing.
3. apply methods and techniques of teaching mathematics.
4. understand various evaluation techniques in mathematics
5. appreciate various resources for teaching Mathematics.

Unit- I: AIMS AND OBJECTIVES OF TEACHING MATHEMATICS

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Identifies the aims and objectives of teaching Mathematics 2. Differentiate between general and specific objectives	1.1 Meaning and nature of Mathematics 1.2 Need and significance of teaching Mathematics 1.3 Aims of teaching Mathematics 1.3.1 Practical aim 1.3.2 Social aim 1.3.3 Disciplinary aim 1.3.4 Cultural aim 1.4 General Instructional objectives(GIOs) and Specific Learning Outcomes (SLOs) based on Bloom's Taxonomy 1.5 Bloom's Taxonomy (Revised)	<ul style="list-style-type: none"> • Lecture • Illustrations • Auto instruction • Digital presentation • Seminar • Discussions • Demonstration • QA session 	<ul style="list-style-type: none"> • Tests (oral/written) • Report • Seminar presentation

Unit- II: PLANNING FOR INSTRUCTION

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Identifies the steps in lesson plan writing 2. Compare unit plan and lesson plan	2.1 Year plan 2.1.1. Definition and importance of year plan 2.1.2 Development of year plan 2.2 Unit plan 2.2.1 Definition and importance of unit plan 2.2.2 Development of Unit plan 2.3 Lesson Plan 2.3.1 Definition and importance of lesson plan 2.3.2 Format of lesson Plan 2.3.3 Herbartian steps 2.3.4 Lesson plan based on ALM	<ul style="list-style-type: none"> • Lecture • Lesson plan preparation • Discussion • Individual work followed by group work 	<ul style="list-style-type: none"> • Observation of class • Lesson transcript/ plan

Unit- III: METHODS AND TECHNIQUES OF TEACHING MATHEMATICS

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Identifies the methods and techniques of teaching mathematics 2. Select the most appropriate method for teaching mathematics	3.1 Methods of teaching 3.1.1 Inductive and deductive methods 3.1.2 Analytic and synthetic methods 3.1.3 Heuristic method 3.1.4 Laboratory method 3.1.5 Problem solving method 3.1.6 Project method 3.1.7 Activity Based Learning (ABL) 3.1.8 Active Learning Methodology (ALM) 3.2 Techniques of teaching 3.2.1 Supervised Study 3.2.2 Group Discussion 3.2.3 Assignments 3.2.4 Constructivist Approach	<ul style="list-style-type: none"> • Lecture • Digital presentation • Seminar • Discussions • Debates • QA session 	<ul style="list-style-type: none"> • Test (oral/written) • Assignment • Seminar presentation

Unit- IV: EVALUATION OF MATHEMATICS

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Identifies the types of evaluation 2. Prepare test items in mathematics	4.1 Concept and purpose of evaluation 4.2 Types of evaluation – formative and summative evaluation, Continuous and Comprehensive Evaluation 4.3 Types of tests – achievement test, diagnostic test and prognostic test 4.4 Different types of test items 4.5 Construction of Achievement test	<ul style="list-style-type: none"> • Lecture • Seminar • Discussions 	<ul style="list-style-type: none"> • Tests (oral/ written) • Reports

Unit- V: RESOURCES FOR TEACHING MATHEMATICS

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Identifies the various supporting system/material useful for learning Mathematics 2. Prepares various instructional materials for effectiveness of instruction	5.1 Print resources 5.1.1 Textbooks 5.1.2 Workbooks 5.1.3 Handbooks 5.1.4 Journals 5.1.5 Magazines 5.1.6 Newspapers 5.2 Visual resources 5.2.1 Pictures 5.2.2 Charts 5.2.3 Flashcards 5.2.4 Models 5.3 Electronic resources 5.3.1 Computer 5.3.2 Interactive White board 5.3.3 Smartphone	<ul style="list-style-type: none"> • Lecture • Digital presentation • Seminar • Discussion • Auto instruction 	<ul style="list-style-type: none"> • Test (oral/written) • Questioning • Reports

SUGGESTED ACTIVITIES (Any two)

1. Prepare a report on learning Mathematics by students in classroom situations.
2. Develop a CD on a lesson on learning Mathematics in high school with details.
3. Develop a lesson plan based on ALM.
4. Construct a diagnostic test in mathematics for any topic in standard VIII.

📖 PRESCRIBED READINGS

1. Aggarwal, J.C. (2008). *Teaching of Mathematics*. UP: Vikas Publishing House.
2. Bisnoi, U. (2015). *Teaching of Mathematics*. Meerut: R-Lal Book Depot
3. James, Anice. (2005). *Teaching of Mathematics*. New Delhi: Neelkamal Publications.
4. James, Anice. (2006). *Techniques of teaching of Mathematics*. New Delhi: Neelkamal Publications.
5. Kumar. S. , & Ratnalikar, D.N. (2003). *Teaching of Mathematics*. New Delhi: Anmol Publishing House.
6. Kulshreshtha, A.K. (2008). *Teaching of Mathematics*. Meerut: R.Lall Books depot.
7. Mustafa, M.(2005). *Teaching of Mathematics*. New Delhi: Deep and Deep Publications
8. Mangal, S.K. (2015). *Teaching of Mathematics*. Ludhiana: Tandon Publications.
9. Sidhu, K.S. (2014). *Teaching of Mathematics*. New Delhi: Sterling Publications.
10. Soman, K & Sivarajan, K. (2008). *Mathematics Education*. (2nd Ed.) Calicut: Calicut University

📖 SUGGESTED READINGS

1. Anderson, L.W., & Krathwohl, D.R. (2001). *A taxonomy for learning, teaching and assessing: A revision of Bloom's Taxonomy of Educational objectives*. New York: Longman
2. Bhatia, K.K. (2001). *Foundations of teaching learning process*. Ludhiana: Tandon Publications.
3. Mustafa, M. (2005). *Teaching of Mathematics*. New Delhi: Deep and Deep Publications.
4. Pratap, N. (2008). *Teaching of Mathematics*. Meerut: R. Lall Books Depot.
5. Siddizui, M.H. (2005). *Teaching of Mathematics*. New Delhi: APH Publications.
6. Rao, D.B. & Pushpalatha, D. (1995). *Achievement in Mathematics*. New Delhi: Discovery Publishing House.
7. Siddiqui, M.H. (2007). *Teaching of Mathematics*. New Delhi: APH Publishing House.

Course Code:BEDIPC006

Pedagogic Course

B.Ed. Degree Programme
Semester-I
THEORETICAL BASES OF PHYSICAL SCIENCE EDUCATION

(4 Credits - 120 Hours)

 **COURSE OBJECTIVES:**

On successful completion of the course, the student teacher will be able to

1. acquire knowledge about the nature, aims and objectives of teaching physical science.
2. develop skill in planning and preparation of lesson plans.
3. develop understanding the various methods and techniques of teaching physical science.
4. apply various evaluation technique
5. appreciate various resources for teaching physical science

Unit- I: NATURE, AIMS AND OBJECTIVES OF TEACHING PHYSICAL SCIENCE

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Recognizes the nature, aim and objective of teaching physical science 2. Compare aims and objectives 3. Identifies bloom's taxonomy	1.1 Nature of science 1.1.1 Science as a product and a process 1.1.2 Values of teaching physical science 1.2 Aims and objective 1.2.1 Meaning and difference 1.2.2 General and specific objectives of teaching physical science 1.2.3 Bloom's Taxonomy of Educational Objectives (Revised)	<ul style="list-style-type: none"> • Digital presentation • Group discussion • Lecture 	<ul style="list-style-type: none"> • Test (oral / written) • Assignment

Unit- II: PLANNING OF INSTRUCTION

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Recognizes year plan, unit plan and lesson plan. 2. Writes a lesson plan based on Herbartian steps 3. Compares unit plan and lesson plan	2.1 Year plan 2.1.1 Advantages 2.2 Unit plan 2.2.1 Definition 2.2.2 Characteristics of a good unit 2.2.3 Steps in Unit plan 2.2.4 Importance of unit plan 2.3 Lesson plan 2.3.1 Definition 2.3.2 Importance of planning a lesson 2.3.3 Criteria of a good lesson plan 2.3.4 Herbartian steps 2.3.5 Merits and demerits of lesson planning 2.4 Comparison of lesson plan and unit plan.	<ul style="list-style-type: none"> • Lecture Method • Discussion • Group discussion • Workshop • Lesson segment Preparation 	<ul style="list-style-type: none"> • Test (oral/written) • Assignment • Participant observation • Lesson transcript

Unit- III: METHODS AND TECHNIQUES OF TEACHING PHYSICAL SCIENCE

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. List out various methods and techniques in teaching 2. Recognizes the most appropriate methods and techniques for teaching.	3.1 Methods of Instruction 3.1.1 Lecture Method 3.1.2 Demonstration Method 3.1.3 Lecture cum Demonstration method 3.1.4 Scientific method 3.1.5 Heuristic method 3.1.6 Project method 3.1.7 Laboratory method- 3.1.8 Historical and Biographical method 3.1.9 Active learning Methodology (ALM). 3.1 Techniques of Instruction 3.1.3 Seminar 3.1.4 Panal Discussion 3.1.5 Symposium 3.1.6 Brain Stroming 3.1.7 Buzz session 3.1.8 Role Play	<ul style="list-style-type: none"> • Seminar • Group discussion • Debate • Brain Storming • Participatory learning 	<ul style="list-style-type: none"> • Test (oral/written) • Participation in group discussion

Unit- IV: EVALUATION IN PHYSICAL SCIENCE

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
1. Recognizes the importance of evaluation in teaching learning process 2. Prepares an achievement and diagnostic test 3. Suggests remedies for teaching physical science	4.1 Evaluation 4.1.1 Concept and Need 4.1.2 Importance 4.1.3 Qualities of good test 4.1.4 Formative and summative evaluation. 4.2 Types of test items 4.3 Different types of test 4.3.1 Achievement test 4.3.2 Diagnostic test 4.3.3 Prognostic test 4.4 Construction of an achievement test 4.5 Diagnostic test -Steps 4.6 Difference between achievement and diagnostic test 4.7 Remedial teaching in physical science	<ul style="list-style-type: none"> • Digital presentation • Group Discussion • Assignment 	<ul style="list-style-type: none"> • Test (oral/written) • Test construction • Seminar presentation

Unit- V: RESOURCES FOR TEACHING PHYSICAL SCIENCE

Learning Outcome	Content	Suggested Strategies and Approaches	Assessment
<p>1. Explains the various resources available for teaching physical science.</p> <p>2. Locates the nearby resources</p> <p>3. Identifies the relevant resources for teaching</p>	<p>5.1 Visual Resources Pictures, Flashcards, Charts, Posters, Photographs, Models.</p> <p>5.2 ICT Resources Television, Internet, Multimedia, Interactive whiteboard.</p> <p>5.3 Community Resources</p> <p>5.3.1 Science centers</p> <p>5.3.2 Science exhibition/fair</p> <p>5.4 Laboratory Resources</p> <p>5.4.1 Need and importance</p> <p>5.4.2 Structure and Design</p> <p>5.4.3 Maintenance of various registers</p> <p>5.4.4 Accident and first aids</p>	<ul style="list-style-type: none"> • Lecture • Discussion • Seminar • Digital Presentation • Peer learning 	<ul style="list-style-type: none"> • Material development • Test (oral/written) • Report writing

SUGGESTED ACTIVITIES (Any Two):

1. Select a unit and prepare a visual resources for teaching physical science
2. Prepare a unit plan in physical science.
3. Prepare a topic based on any one technique of instruction and prepare a report.
4. Prepare a lesson plan based on Active Learning Methodology.

📖 PRESCRIBED READINGS

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5. Sivarajan, K., & Faziluddin. A. (2006), *Science Education*, Calicut University, Central Co-operative press.

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2. Das. R.C. (1985). *Science teaching in schools*. New Delhi: Sterling Publishers.
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4. Mathew.T.K., & Molly kutty.T. M. (2011). *Science education: Theoretical bases of teaching and pedagogic analysis*. Chenganoor: Rainbow Book Publishers.
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