

II. SYLLABUS OF DIFFERENT COURSES

Course-I PHILOSOPHICAL FOUNDATIONS OF EDUCATION

Objectives

After completion of the course, the student-teacher will be able to

1. understand the concepts of Education and Philosophy
2. understand the Indian Philosophical thought on Education
3. understand the Implications of various western schools of thought on Education
4. understand the implications made by recent thinkers on education.
5. appreciate the nobility of teaching as a profession.
6. understand the need and importance of values and their role in making an individual a humane.

Course Content

Unit-1: Introduction to Philosophy and Education

- 1.1 Concept and Scope of Philosophy
- 1.2 Concept and Scope of Education
- 1.3 Types and Functions of Education
- 1.4 Relationship between Philosophy and Education.
- 1.5 Philosophy and aims of Education

Unit-2: Indian Education: Historical Perspective

- 2.1 Education during Ancient Period (Vedic Education, Buddhist Education and Jains)
- 2.2 Education during Medieval Period (Including Islamic Education)
- 2.3 Education during Modern Period (Pre-Independent and Post Independent era)
 - i. Rabindranath Tagore
 - ii. Sri Aurobindo Gosh
 - iii. Mohandas Karamchand Gandhi
 - iv. Jiddu Krishna Murthy
 - v. Dr. BR. Ambeddkar
 - vi. Moulana Abdul Kalam Azad

Unit-3: Eastern Systems and Western Schools of Philosophy

- 3.1 Eastern Systems of Philosophy
 - i. Sankhya
 - ii. Yoga
 - iii. Nyaya
 - iv. Vedanta
- 3.2 Western Schools of Philosophy
 - i. Idealism
 - ii. Naturalism
 - iii. Pragmatism
 - iv. Existentialism

Unit-4: Value Education

- 4.1 Concept of Value
- 4.2 Classification of Values
- 4.3 Value Crisis
- 4.4 Approaches to inculcate Values
- 4.5 Values and Harmonious Life

Unit-5: Teaching as a Profession

- 5.1 Teacher: Professional Competencies and Commitments

- 5.2 Teacher as a Nation Builder
- 5.3 Teacher as a Creator and Facilitator of Knowledge
- 5.4 Professional ethics of teachers
- 5.5 Teacher and the Future Society

Activities

1. Critically review a selected book written by Contemporary Educationalist in India.
2. Thoughts and reflections of Western Philosophical schools and its relevance to the present day Indian Education – A Report
3. Identify the different roles played by an ideal teacher in the classroom, school and community and report
4. Visit nearby schools under different managements and describe the functioning of the schools
5. List out the values which make an individual a righteous human being

Text Books

- Foundations of education, Telugu Academy publications, 2014, Hyderabad.
- Foundations of education, Neelkamal publications, 2013, Hyderabad
- Aggrawal, J.C. (1996) 10th rev. ed. *Theory and Principles of Education*. New Delhi: Vikas Publication.
- Altakar A.S. (1957). *Education in Ancient India*. Varanasi: Nand Kishore Publication. Anand,
- C L. (1993). *Teacher and Education in the Emerging Indian Society*. New Delhi: NCERT.

Reference Books

- Bipan Chandra (2000). *India after Independence*. New Delhi: Roopa.
- M. Keynes, 5th Edition. Cambridge: Cambridge University Press.
- Dhavan, M.L. (2005). *Philosophy of Education*. Delhi; Isha Books.
- Introduction to history of Philosophy, Frank Thilly.
- History of Philosophy, R S Peters, Orient Longman, New York
- Thakur, A. S. & Berwal, S. (2007). *Education in Emerging Indian Society*, New Delhi: National Publishing House.
- Jaffar, S.M. (1972). *Education in Muslim India*. Delhi: Idrah-I-Ababiyat.
- John Brubacher (2007). *Modern Philosophy of Education*. New Delhi: Surjeet Publication.
- Mookerjee, R.K. (1960). *Ancient Indian Education*. Delhi: Moti Mahal.
- Mukherjee, S.N. (1955). *History of Education in India*. Baroda: Acharya Book Depot.
- Mukharji, Shankar (2007). *Contemporary Issues in Modern Indian Education*. Authors Press.
- Nurullah & Naik (1951). *History of Indian Education*. Bombay: Macmillan & Co. Passi,
- B. K. (2004). *Value Education*. Agra: National Psychological Corporation. M.L. Dharam,
- Philosophy of Education, Delhi Esha Books
- History of Indian Education, Mumbai (Mc Millan and Co)

Course-II
PERSPECTIVES IN CHILD DEVELOPMENT

Objectives

After completion of the course, the student-teacher will be able to

1. compare relative merits and applications of different Approaches of Human Development
2. recognize that childhood is a period of socialization and how socialization practices affect their development
3. critically analyze developmental variations among children placed and exposed to different socio-cultural contexts
4. appreciate the process of development with special focus on childhood and adolescence
5. recognize that adolescence as a period of transition and threshold of adulthood
6. examine characteristics of adolescents and reflect on how their needs act as genesis of certain unique problems
7. illustrate different factors influencing on child development and their applications to education
8. examine different theories of development and their relevance to understand the nature of child

Course Content

Unit-1: Approaches of Human Development

- 1.1 Concept of Growth, Development and Maturation
- 1.2 Principles of Development
- 1.3 Stages of Growth and Development (Infancy Childhood, Adolescence)
- 1.4 Dimensions of Growth and Development (Physical, Cognitive, Emotional, Social, Moral, language)
- 1.5 Longitudinal and cross sectional approaches of understanding development

Unit-2: Theories of Development

- 2.1 Cognitive theory of Development (Piaget's)
- 2.2 Psycho-social theory of development (Erikson).
- 2.3 Theory of Moral Development (Kohlberg's).
- 2.4 Theory of psycho- sexual development (Freud).
- 2.5 Theory of Emotional Development (Goleman).

Unit-3: Childhood as a period of Socialization

- 3.1 Characteristics of childhood – developmental tasks.
- 3.2 Child development – Physical, cognitive, social, emotional, moral and language development during childhood.
- 3.3 Child in different socio-cultural contexts.
- 3.4 Process of socialization – conflicts resolution and social development.
- 3.5 Stages of Social development – Isolated play, parallel play and social play.
Characteristics of socially matured person.

Unit-4: Adolescence as a period of transition

- 4.1 Characteristics and needs in Adolescence
- 4.2 Genesis of problems during adolescence-Physical, cognitive, emotional, social, moral and language development

- 4.3 Adolescent Groups – Gangs
- 4.4 Mechanisms of adjustment with special reference to defense mechanisms and holistic development
- 4.5 Leadership: Types of Leadership, Development of Leadership qualities in adolescents and its educational implications.

Unit-5: Individual Differences

- 1.1 Dimensions of Individual differences-cognitive abilities, interests, aptitude, creativity, personality and values
- 1.2 Theory of multiple intelligence (Gardner) – Implications for understanding differences in children
- 1.3 Difference in children based on learning styles and socio cultural context (home language and Instructional language)
- 1.4 Individual differences based on cognitive abilities – learning difficulties, slow learners and intellectually challenged, intellectual giftedness - implications for catering to individual variations in view of “differences” rather than “deficits” perspective.
- 1.5 Fostering creativity among children.

Activities

- 1. Visit a balwadi centre/ NGO centers for orphans/ street children homes and prepare a detailed report on the care taken by these centers
- 2. Description of cases – 1. A Child with any type of disability and 2. A child from disadvantaged section of the society
- 3. Describe the salient features of Child Rights Act 2005
- 4. Interact with five adolescents and collect information about their attitudes, interests, aspirations in respect of their educational and occupational choices

Text Books

- Mangal, S.K.(2002). *Advanced Educational Psychology*, Printice- Hall. of India , Pvt.Ltd., New Delhi.
- Dandapani (2002). *Advanced Educational Psychology*, Second Edition. New Delhi: Anmol Publication Pvt. Ltd.

Reference Books

- Beggie, H.L. and Hunt M. P: *Psychological Foundations of Education*
- Erickson, Eric, H. (1972). *Play and Development*. New York: W. W. Norton
- Gardner, H. (1980). *Frames of mind: The theory of multiple intelligence*. London: Paladin Books
- Gauvian, M. and M. Cole (eds). *Readings on the development of children*. New York: W. H. Freeman
- Hurlock, E.B. (1999). *Developmental Psychology*. New Delhi: Tata McGraw-Hill Publishing Company Ltd, New Delhi
- Piaget, J. (1926). *Psychology of Intelligence*. New York: Basic Books
- Sharma, K.N. (1990). *Systems, Theories and Modern Trends in Psychology*. Agra: HPB.
- Yakaiah, P. & Bhatia, K.K. (2005). *Introduction to Educational Psychology*. Ludhiana: Kalyani Publishers.

Course-III
INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) FOR
ENRICHING TEACHING AND LEARNING

Objectives

After completion of the course, the student-teacher will be able to

1. explain the concept of educational technology
2. explain the concept of ICT in education
3. appreciate the influence of ICT for improving the professional competencies
4. comprehend communicative skills and effective classroom interaction
5. use different approaches of ICT integration in education
6. appreciate the application of E-learning in education
7. explain the instructional strategies in instructional strategies and models
8. explain the fundamentals of the operating systems and application software
9. use internet for effective classroom teaching and maintain the ethical values
10. utilize the ICT for professional development of teachers

Course Content

Unit-1: Information and Communication Technology (ICT)

- 1.1 Educational Technology – Concept, Growth, Objectives, Characteristics, Advantages, Challenges and Impact
- 1.2 Information Technology - Knowledge Explosion, Preservation and Retrieval
- 1.3 Communication – Concept, Elements, Process, Barriers & Types – Teaching as Communication - Communication Technology – Its application in Education
- 1.4 Instructional Media and Aids – Aural, Print, Visual and multimedia
- 1.5 Concept, Importance, Characteristics and Scope of Information and Communication Technology (ICT)

Unit-2: ICT in Education

- 2.1 Knowledge Acquisition and Multi-sensory approach
- 2.2 Classroom Communication and Communicative Skills for Teachers and Students - Flander's Interaction Analysis Category System
- 2.3 Individualised Instruction – Concept, Need, Principles and Techniques
- 2.4 Programmed Learning - Principles, Types, modes of presentation, development, application and role of teacher
- 2.5 Changing roles of the learner and the teacher in ICT-Integration and Challenges

Unit-3: Computer Fundamentals and Applications

- 3.1 Types, Characteristics and features of Computers
- 3.2 Components of Computers – Hardware, Software, Memory and Maintenance of computers
- 3.3 Operating Systems - DOS, Windows and Macintosh and Mobile Apps for Teaching
- 3.4 Software for Word Processing, Presentation, Statistical & Graphical, Page Layout, multimedia and webpage creator
- 3.5 Concept, Applications and Challenges of Computer networks, Internet, E-mail and Digital Space

Unit-4: ICT Enriched Learning Experiences

- 4.1 Application of ICT for Enriching Classroom Experiences
- 4.2 Application and use of Multimedia Educational Software for classroom situations
- 4.3 Use of Internet based media for teaching and learning enrichment - Acknowledgement
- 4.4 Project based learning using computers, Internet and Activities
- 4.5 Collaborative learning using group discussion, projects, field visits, blogs, etc.

Unit-5: Application of Computers in Education

- 5.1 Computer as a learning tool – Concept of E-learning
- 5.2 Web 2.0 Technologies-characteristics, types and examples
- 5.3 Virtual Classroom, Smart Boards, Tools and Opportunities
- 5.4 Open Educational Resources – Concept and Significance
- 5.5 Critical issues in Internet usage – Authenticity, Addiction, Plagiarism, Ethical and Legal Standards

Activities

1. Use various visual aids in the classroom and report their effectiveness on learning of the students
2. Prepare Self Instructional Material on any one topic and analyse its effectiveness for individualized learning
3. Observe and analyse classroom Interaction and report the dynamics of classroom
4. Prepare a computer assisted lesson of your choice from school curriculum

Text Books

- Agarwal J P (2013) – Modern Educational Technology – Black Prints, Delhi
 Barton R (2004) – Teaching Secondary Science with ICT – McGrawhill International Das R C (1993), Educational Technology – A Basic Text, Sterling Publishers, New Delhi
 Intel® - Teach to the Future – Pre-service Binder Version 2.0
 Kirwadkar A and Karanam P.(2010) E-Learning Methodology – New Delhi- Sarup Book Publishers

Reference Books

- Agarwal J P (2013) – Modern Educational Technology – Delhi Black Prints –
 Douglas, E C, Computer Networks and Internet, Prentice Hall
 Imison T and Taylor PH (2001) – Managing ICT in Secondary Schools Heinman- Oxford
 Jones, B Technology and Future of Works, Oxford University Press
 Kumar, K L (2000), Educational Technology, New Delhi, New Age International Pvt. Ltd.
 Norton P (2000) Introduction to Computers, New Delhi, Tata McGraw Hill Publications
 Sampath K (1981) Introduction to Educational Technology, Sterling Publishers, New Delhi
 Sharma, R A (1983) Technology of Teaching, IPH, Meerut
 Shukla, Satish S (2005), Basics of Information Technology for Teacher Trainees, Ahmedabad, Varishan Prakashan
 Venkataiah, N (1996), Educational Technology, New Delhi: APH Publishing Corporation

Course-IV PEDAGOGY OF MATHEMATICS

Objectives

After completion of the course the student will be able to

1. develop insight into the meaning, nature, scope and objectives of mathematics education
2. appreciate the role of mathematics in day to day life
3. understand history, development of mathematics and the contributions of Indian mathematicians to mathematics
4. understand aims and objectives of different branches of mathematics
5. identify the role of branches of mathematics and their implications on the society.
6. understand and practice various methods and approaches of teaching mathematics
7. understand the selection, preparation and uses of learning resources

Course Content

Unit-1: Meaning, Nature, and Scope of Mathematics

- 1.1 Meaning, Nature, and scope of mathematics.
- 1.2 History of Mathematics with special emphasis on teaching of mathematics.
- 1.3 Contributions of Indian Mathematicians a) Aryabhatta b) Brahmagupta c) Varahamihira d) Bhaskaracharya e) Srinivasa Ramanujan.
- 1.4 Contributions of Western Mathematicians a) Euclid b) Pythagoras c) Renedescarte d) Geroge Cantor.
- 1.5 Correlation of Mathematics with other school subjects and with other branches of mathematics.

Unit-2: Aims and objectives of Teaching Mathematics

- 2.1 Need for establishing general objectives for teaching mathematics.
- 2.2 Aims, Values and general objectives of teaching mathematics.
- 2.3 Specific objectives and teaching points of various content areas in different branches of secondary school mathematics.
- 2.4 Recommendations of various Educational Committees and Commissions as regards to Aims and Objectives of Teaching Mathematics.
- 2.5 Meaning and Concept of Academic Standards of CCE.
- 2.6 Linking Blooms Taxonomy with Academic Stands.

Unit-3: Methods, Approaches and Strategies in Teaching and Learning of Mathematical Concepts

- 3.1 Nature of Concepts, types of Concepts, Concept Formation and concept assimilation; distinguishing and stating necessary and sufficient conditions in the process of teaching concepts. Comparing and contrasting. Giving counter example and non example in teaching concepts. Planning and implementation strategies in teaching concepts.
- 3.2 Creating awareness among student teachers on various concepts of Arithmetic, Algebra, Geometry, Trigonometry and Probability and Statistics from classics VI to X.
- 3.3 Methods of Teaching Mathematics: Inductive and Deductive : Analytic and Synthetic: Laboratory. Heuristic, Project Method and Activity Based Teaching.

- 3.4 Problem solving- Stages and Steps in problem solving; Discovering or Exploring various options for solving a given problem in Algebra, Arithmetic, Geometry, Trigonometry, Probability and Statistics.
- 3.5 Concept Attainment Model of Jerome Bruner.

Unit-4: Planning for Teaching – Learning Mathematics

- 4.1 Microteaching: Concept, Definition, Microteaching cycle, Components of Microteaching, Merits and Limitations.
- 4.2 Microteaching Skills: Introducing a lesson, Explaining a Concept, Stimulus Variation, Illustrating with Examples, Probing Questioning, Reinforcement, Structuring Classroom Questions, and Blackboard writing.
- 4.3 Planning of Instruction: Unit plan, Period plan based on Blooms Taxonomy and academic standards.
- 4.4 Technology Integrated Lesson-Planning the Lesson by digital technology.

Unit-5: Learning Resources in Mathematics

- 1.1 Mathematics Text Book – Importance and Criteria of good Mathematics text book.
- 1.2 A Critical Analysis of existing Secondary School Mathematics Text Books.
- 1.3 Audio, Visual and Multimedia resources – Selection and designing.
- 1.4 On line Resources – ICT based Pedagogical tools.
- 1.5 Using community resources for mathematics learning. Visits, mathematical field trips and excursions.
- 1.6 Handling hurdles in utilizing resources.

Activities

1. Create different activities to realize concept attainment by children in any unit from Mathematics Text books of 6-10 classes
2. Each student has to collect and present history and contributions of one Indian or Western mathematician
3. Preparation of T.L.M. for any one topic from classes 6-10 mathematics
4. Preparation of power point presentation (PPP) for any one topic from a different branch of mathematics
5. Identifying suitable methods/ approaches of teaching different topics from mathematics text of any one class (Inductive/ Deductive/ Analytic/ Synthetic/ Laboratory/ Heuristic/ Project methods and Activity based learning)

Text Books

Davis, David R. The Teaching of Mathematics. New Delhi: Surjeet Publications
 Mangal, S.K. (1993). Teaching of Mathematics. New Delhi: Arya Book Depot.
 NCERT (2012). Pedagogy of Mathematics, New Delhi: NCERT
 Siddu, K.S. (1990). Teaching of Mathematics. New Delhi: sterling Publishers.

Reference Books

- Benjamin, S. Bloom, Ed. (1958). Taxonomy of Educational Objectives – Handbook 1 – Cognitive Domain. New York: Harcourt Brace & World Inc.
- James, Anice. Teaching of Mathematics. Hyderabad: Neelkamal Publications Pvt. Ltd.,
- Kulshrestha, A.K. & Puneetha Kumar. Teaching of Mathematics. Meerut: R. Lal Book Depot.
- NCERT (2000). National Curriculum Framework for Teacher Education. New Delhi: NCERT
- NCERT (2005). National Curriculum Framework. New Delhi: NCERT
- NCTM (1970). The Teaching of Secondary School Mathematics, XXXIII Yearbook Washington: NCTM.
- Packiam, S. Methods of Teaching Mathematics.
- Rao, N.M. Mathematics Projects and Mathematics Laboratory, New Delhi: NCERT
- SCERT (2011) Andhra Pradesh Curriculum Framework, Hyderabad: SCERT, Government of AP
- SCERT (2011). Position papers for Mathematics. Hyderabad: SCERT, Government of A.P

Course-IV
PEDAGOGY OF SOCIAL SCIENCES

Objectives

After completion of the course, the student-teacher will be able to

1. understand the meaning and scope of Social Sciences
2. develop general and specific aims of teaching social sciences
3. inculcate values through teaching of Social Sciences
4. understand major concepts and develop critical thinking through teaching inter disciplines of Social Sciences
5. acquire knowledge on different strategies and approaches of teaching and developing skills in connection of resources.

Course Content

Unit-1: Social Sciences as an integrated area of Study

- 1.1 Meaning, Nature and Scope of Natural and Social Sciences
- 1.2 Distinction between Natural and Social Sciences
- 1.3 Meaning, History, Nature, Scope and Development of Social Studies
- 1.4 Distinction between social sciences and social studies
- 1.5 Understanding society through various social sciences

Unit-2: Aims Objectives and Academic Standards of Social Sciences

- 2.1 Major aims and objectives of teaching Social Sciences
- 2.2 Bloom's taxonomy of Educational Objectives
- 2.3 Academic Standards and Learning outcomes of teaching Social Sciences
- 2.4 Recommendations of NPE 1986, NCF 2005, APSCF 2011
- 2.5 Values of Teaching Social Sciences

Unit-3: Approaches, Methods, Strategies and Techniques of Teaching Social Sciences

- 3.1 Meaning, need and significance of various approaches, methods, strategies and techniques of Teaching Social Sciences
- 3.2 Teacher Centred Approaches – Lecture, Lecture-demonstration, Source and Supervisory Study
- 3.3 Learner centered approaches –Project, Problem Solving, Discussion, Inductive and Deductive, Observation, Constructivistic Approach
- 3.4 Strategies / Techniques - Brain Storming, Team Teaching, Mind Mapping, Questioning
- 3.5 Activities – Dramatisation, Role play, Field Trips, Social Science Clubs, Exhibitions

Unit-4: Planning in Teaching Social Sciences

- 4.1 Microteaching – Meaning, Concept and Steps
- 4.2 Microteaching Skills - Introduction, Explanation, Questioning, Reinforcement, Stimulus Variation
- 4.3 Year Plan and Unit Plan
- 4.4 Need and Importance of Lesson Planning (Period Planning)
- 4.5 Technology Integrated Lesson Planning

Unit-5: Teaching Learning Resources in Social Sciences

- 5.1 Community Resources – Human and Material
- 5.2 Social Science Library, Laboratory and Museum
- 5.3 Need and Significance of Current and Controversial issues in teaching social sciences
- 5.4 Handling hurdles in utilizing resources
- 5.5 Professional Development of Social Sciences Teacher

Activities

1. Identify values in depicted in the lessons of social sciences of any one class and prepare a report
2. Select and plan appropriate strategies for teaching a lesson of social science of your choice and submit
3. Identify any village/ward/ colony and make social survey and find out the literacy rate, adult education programmes, electricity, toilets, sanitary and water facilities, maintenance of roads, etc and submit village/ward description report
4. Organise a programme in the school in connection with celebration of national festivals, birthdays of social scientists/ National leaders, etc.

Text Books

- Telugu Academy – 2002 – B.Ed. Methods of Teaching Social Studies – Hyderabad
- Aggarwal J.C(1993) – Teaching of Social Studies – a practical approach, second edition, New Delhi, Vikas Publishing House
- Aggarwal J.C (1983) - Teaching of History New Delhi, Vikas Publishing House
- Kochhar, SK(1988) Teaching of Social Studies, New Delhi, Sterling Publishers Private Ltd
- Bining, A.C and Bining BH (1952) Teaching of Social Studies in Secondary schools
3rd Ed., Bombay, TATA Mc Graw- Hill publishing Company Ltd.

Reference Books

- Aggarwal D.D (2008) – Modern Methods of Teaching Geography new Delhi current publications
- Edwin, Fenton (1967) – The New Social Studies in Secondary Schools – An Inductive Approach – New York – Holt Binchart and Winston Inc.
- Martorella, Peter M (1976) – Social Studies Strategies – Theory into Practice, New York, Harper and Row Publishers Inc.
- Mechlinger M D (1981) – UNESCO Handbook of Teaching Social Studies – London – Croom Helm
- Moffat, M P (1955) – Social Studies Instruction – 2nd Ed. New York – PHI
- NCERT (1990) – Teaching History in Secondary Schools – New Delhi
- Ruhela, S P (2009) – Techniques of Teaching Social Sciences – Hyderabad – Neelkamal Publications
- Edgar B W & Stareky, P W (1958) – Teaching Social Studies in High Schools – Health and Company, Boston 11C
- Dr Rambhai N Patel, Educational Evaluation – Himalaya Publishing House, Mumbai

Course-IV
PEDAGOGY OF BIOLOGICAL SCIENCES

Objectives

After completion of the course, the student-teacher will be able to

- 1.1 develop an insight on the meaning, scope, nature and aims of biological science
- 1.2 identify and relate everyday experiences with the learning of biological science
- 1.3 integrate the knowledge of biological science with other school subjects
- 1.4 facilitate the development of scientific attitude in the learners of biological science
- 1.5 develop competencies for teaching and learning biological science through Herbartian and Constructivist approaches
- 1.6 stimulate curiosity, creativity and inventiveness in the learners towards biological science

Course Content

Unit-1: Introduction to Science

- 1.1. Meaning and Functions of Science
- 1.2. Nature and Scope of Science
- 1.3. Structure of Science
- 1.4. Branches of Science
- 1.5 History of Biological Science

Unit-2: Aims and Values of Biological Science

- 2.1. Aims of Teaching Biological Science
- 2.2. Values of Teaching Biological Science
- 2.3. Competencies of a Biological Science Teacher
- 2.4. Correlation of Biological Science with other school Subjects

Unit-3: Objectives of Teaching Biological Science

- 3.1. Meaning and Importance of objectives
- 3.2. Revised Blooms Taxonomy of Educational Objectives.
- 3.3. Instructional Objectives and specifications with examples
- 3.4. Academic Standards mentioned in the school biological science text
Book published by government of Andhra Pradesh

Unit-4: Methods and Techniques of Teaching Biological Science

- 4.1 Micro Teaching Techniques
- 4.2 Lecture Method, lecture Demonstration Method, and Laboratory Method
- 4.3 Scientific Method (Inductive and Deductive Method)
- 4.4 Project Method

Unit-5: Planning for Teaching Biological Science

- 5.1 Year Plan
- 5.2 Lesson Plan
- 5.3 Period Plan (Herbartian and Constructivist approach and CCE Model)
- 5.4 Learning Experiences
- 5.5 Planning ICT Applications in Learning Biology

Activities

1. Visit any zoological park/Botanical Garden/Agro based industry/ food park/ institution of scientific interest or Science and Technological Museum in your vicinity and report.
2. Identify and write the objectives and specifications under the three domains on any topic of your choice
3. Sketch the life history and write his/her contributions of any one Biologist
4. Name any common branch of both Botany and Zoology and explain how you integrate the pedagogy in dealing with the content.
5. Organize an event on Earth Day/ Environment Day/ Population Day, etc. in the school during the internship and report.

Text Books

- Agarwal,D.D.(2001). Modern Methods of teaching Biology.Newdelhi: Sarup& Sons
- Ahmed,J.(2011). Teaching of Biological Science . New Delhi:PHI Learning Pvt.Ltd.
- Benjamin,S.Bloom,Ed.(1958). Taxonomy of educational objev=ctives- handbook I –Cognitive Domain, New York: Harcourt Brace & World Inc.
- Chikara,M.S. and S. Sarma (1985) Teaching of Biology ,Ludhiana: prakesh Brothers.
- Gupta,S.K.(1983) technology of science Education, New Delhi: Vikas Publishing House Pvt.Lt

Reference Books

- Hassard,J. (2000) science as Inquiry , New Jersey: Good Year Books.
- Krathwohl, David R.,Ed (1964) Taxonomy of Educational Objectives , Hand Book II – Affective Domain, New York: David Mckay.
- Mohan,R.(2004)Innovative Science Teaching for Physical Science teachers. New Delhi: Practice-Hall India Ltd.
- New UNESCO Source Book for science teaching (1978).New Delhi: Oxford & IBH Publishing House.

Course-V
PEDAGOGY OF PHYSICAL SCIENCES

Objectives

After completion of the course, the student-teacher will be able to

1. know the nature of science, structure, value and correlation with other school subjects.
2. draw the attention on development of science and the contributions of western and Indian scientists.
3. understand the aims and objectives of teaching physical sciences.
4. develop the skill of organizing science curriculum and critique on the present secondary school physical sciences curriculum.
5. organize the content into plan of action and practice the micro and macro teaching skill.
6. cope up with adoption of methods of teaching physical sciences and use the learning experiences.

Course Content

Unit-1: Introduction to Science and Physical Sciences

- 1.1 Science and Physical Sciences – Meaning, Nature, Scope and Importance
- 1.2 Structure of Science – Syntactic Structure (Process of Science – Domain of Inquiry), Substantive Structure - Product of Science-Facts, Concepts, Theories, Laws and Principles – characteristics in the context of Physical sciences (citing examples)
- 1.3 Values of Learning Physical Sciences
- 1.4 Correlation of Physical Sciences with Mathematics, Biological Sciences, Social Studies, Languages, Fine Arts, Environment, Health, Development, Peace and Equity
- 1.5 Analysis of selected concepts of Physics and Chemistry from 6-10 classes

Unit-2: Development of Science - Physical Sciences

- 2.1 Milestones in the Development of Sciences – Physics and Chemistry
- 2.2 Contributions of Western and Indian Scientists
- 2.3 Landmarks, Status and Development Indian Science and Technology
- 2.4 Physical Science and Human Life
- 2.5 Rationale in Inspiring Students to study Physical Science

Unit-3: Aims, Objectives and competencies of Teaching Physical Sciences

- 3.1 Aims and Objectives of Teaching Physical Sciences
- 3.2 Taxonomy of Educational Objectives – Bloom, Krathwohl, Simpson, et al – Revised Bloom's Taxonomy and Higher Order Thinking Skills
- 3.3 Instructional Objectives of Teaching Physical Sciences
- 3.4 Behavioural or Specific Objectives of Teaching Physical Sciences
- 3.5 Competencies for Teaching of Physical Sciences

Unit-4: Approaches, Methods and Techniques of Teaching Physical Sciences

- 4.1 Concept of Teaching with special reference to Physical Science – Approaches and Methods – Student Participation in Learning
- 4.2 Teacher-centred Methods - Lecture, Lecture-cum-Demonstration, Historical
- 4.3 Student-centred Methods - Heuristic, Project, Scientific and Laboratory
(Illustration of each method by taking examples from specific contents of Physics and Chemistry)

- 4.4 Modern Teaching Techniques - Brainstorming, Team Teaching and Models of Teaching – Concept Attainment Model and Enquiry Training Model
- 4.5 Microteaching - Concept and Meaning, Skills of Microteaching, Practice of Microteaching Skills

Unit-5: Planning for Teaching Physical Sciences

- 5.1 Importance of Planning for Teaching
- 5.2 Year Plan
- 5.3 Unit Plan
- 5.4 Period Plan (Lesson Plan) – Herbertian Steps vs. Constructivist Approach
- 5.5 Teaching Strategies and Academic Standards, CCE model period plan for classroom teaching

Activities

1. Identify the most abstract concepts (difficult topics) from any class physical science textbook suggest ways and means to make it easy to understand and concrete.
2. Identify Concrete and Abstract Concepts in Physics and Chemistry of any class and suggest the appropriate Teaching methods and approaches to teach them and report
3. Prepare an assignment on any physical sciences and its application and implications with other branches of knowledge
4. Prepare biographical sketch of and scientist and his/her contributions to Physics/ Chemistry
5. List out different content aspects of a unit in Physics/ Chemistry and write down the objectives and specifications under Cognitive Domain associated with them

Text Books

- Bhouthika Rasayana Shashtra Bodhana Paddhatulu (Methods of Teaching Physical Science) – Telugu Academy
- Vaidya, Narendra (1989) *The Impact of Science Teaching*. New Delhi: Oxford and IBH Publishing Co. Pvt. Ltd.
- Sharma, R.C. (1987). *Modern Science Teaching*. New Delhi: Dhanpat Rai and Sons.
- Vanaja, M. (2004). *Methods of Teaching Physical Sciences*. Hyderabad: Neelkamal Publications Pvt. Ltd.
- Das, R.C. (1990). *Science Teaching in Schools*. New Delhi: Sterling Publications Pvt. Ltd.

Reference Books

- Siddiqui and Siddiqui (1998). *Teaching of Science Today and Tomorrow*. New Delhi: Doaba House.
- Kumar, Amit (1999). *Teaching of Physical Sciences*. New Delhi: Anmol Publications Pvt. Ltd.
- Soni, Anju (2000). *Teaching of Science*. Ludhiana: Tandon Publications.
- Nagaraju, M.T.V. (2008). *Hand Book for Teaching Physical Sciences - Methods and Techniques*. New Delhi: Kanishka Publishers and Distributors.
- Mohan, Radha (2004) – *Innovative Science Teaching for Physical Science Teachers*, New Delhi, PHI
- UNESCO - Teaching of School Physics – Penguin Books
- UNESCO – Teaching of School Chemistry – Penguin Books

Course-V
PEDAGOGY OF ENGLISH

Objectives

After completion of the course, the student-teacher will be able to

1. understand the place of English Language Teaching in India
2. understand the different roles of language
3. understanding the importance of home language, school language and the role of mother tongue in education.
4. understand different skills of English language
5. identify different Methods, Approaches and Techniques needed for teaching different skills of ELT in the Indian context
6. improve their ability in planning a lesson in Prose, Poetry and Supplementary Reader
7. develop integrated skills in ELT
8. prepare different activities and tasks for learners

Course Content

Unit-1: Introduction to ELT

- 1.1 Meaning, nature and scope of ELT
- 1.2 Status of English Language in the global and Indian contexts
- 1.3 Aims and Objectives of Teaching English in India
- 1.4 Language and Education Policy in India
- 1.5 Teaching English in Bilingual/Multi-lingual contexts

Unit-2: Methods and Approaches in ELT

- 2.1 Method, Approach and Technique
- 2.2 Grammar Translation Method, Direct Method, Bilingual Method and Dr. West's Method
- 2.3 Oral, Situational and Structural Approaches
- 2.4 Communicative Language Teaching
- 2.5 Micro skills in ELT

Unit-3: Listening and Speaking Skills

- 3.1 Types and Sub-skills of Listening
- 3.2 Techniques of and materials for teaching Listening
- 3.3 Sub-skills of Speaking
- 3.4 Techniques of and materials for teaching Speaking
- 3.5 Activities to develop Listening and Speaking skills.

Unit-4: Reading and Writing Skills

- 4.1 Types and Sub-skills of Reading; Methods of Teaching Reading
- 4.2 Reading and Reflecting on text
- 4.3 Mechanics of Writing
- 4.4 Sub-skills and techniques of Writing
- 4.5 Activities to develop Reading and Writing skills.

Unit-5: Developing integrated skills and use of ICT in English Language Teaching

- 5.1 Teaching of Prose
- 5.2 Teaching of Poetry
- 5.3 Use of Multi-media in ELT
- 5.4 Online resources for ELT
- 5.5 ELT and Social Networking

Activities

1. Prepare a report on Language policies given in the reports of Kothari Commission, NPE 1986 and POA 1992.
2. Prepare a detailed report on how, when and why you are going to use various methods, approaches and techniques in teaching the English language skills.
3. Enumerate ten activities (5 for listening and 5 for speaking) from the text books of classes VI to X. Suggest your own activities using supplementary materials.
4. Critically analyse the writing activities given in the text books of classes VI to X and report.
5. Analyze the tasks given at the end of any one unit in the textbook and check their relevance to cognitive, affective

Text Books

- Graham Butt (2008): *Lesson Planning*. New York: Continuum International Publishing Group.
- Grillet, F. (1983): *Developing Reading Comprehension*. Cambridge, CUP.
- Krishnaswamy, N. and Sriraman, T. (1994): *Teaching English in India*. Chennai: T.R. Publishers
- M. L. Tickoo (2003): *Teaching and Learning English*. Hyderabad: Orient Longman.
- Makey, Sandra L. (1985): *Teaching Grammar*. Oxford: Pergamon Press

Reference Books

- Doff, A. (1981): *Teach English*. London: Cambridge University Press (CUP)
- Parrott, M. (1993): *Developing Reading Comprehension*, Oxford: Pergamon Press.
- Richards, J.C. and T. Rogers (1998): *Approaches and Methods to Language Teaching*. London: CUP
- Allen, Virginia French (1983): *Techniques in Teaching Vocabulary*. New York: Oxford University Press (OUP)
- Cruttenden Allan (VII Ed.) (2008): *Pronunciation of English*. Hodder Education, UK
- Frank, C. and Rinovoluceri Mario (1983): *Grammar in Action*. Oxford: Pergamon Press
- Mario (1984): *Grammar Games*. Cambridge: Cambridge University Press (CUP)
- Roach Peter (III Ed.) (2007): *English Phonetics and Phonology*. Cambridge: CUP