

Pedagogy of Physical Science: I

Course Code: BED503

Credit: 02 (L-2, T-0, P-0)

Contact Hours: 30

MM: 50

After going through the course the teacher trainee will be able:

- To develop insight on the meaning and nature of Science
- To develop lesson planning skills in the contents of Science with respect to its branches
- To understand the process of different models of teaching □ To determine aims and objectives in the contents area of Science. □ To state specific objectives in behavioural terms.
- To diagnose basic causes for difficulties in learning mathematics.

Course Outline

Unit I: Nature, Aims and objectives:

- Science as a domain of enquiry, Science as an interdisciplinary area of learning. Facts, concepts, principles, law and theories – their characteristics in content of Science.
- Contribution of Eminent Scientist; Isaac Newton, Dalton, Albert Einstein, Graham bell, J.C. Bose, C.V. Raman, Vikram Sarabhai, H.J. Bhabha, AP.J. Abdul Kalam.
- Aims and objectives of Science teaching at upper primary and secondary level school. Justification for including Science as a subject of study in school curriculum.
- General objectives, specific objectives, classification of learning objective; cognitive, affective and psychomotor.
- Writing objectives in behavioural terms in content areas of science.

Unit II: Teaching Models, Strategies and Learning resources:

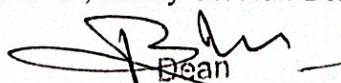
- Meaning and definition of teaching models, fundamental elements of teaching models, types of teaching models; behavior modification and constructivist.
- Microteaching, Simulated teaching, team teaching, PLA technique, project based learning, cooperative learning, Application of ICT in the Science Classroom
- Identification and use of learning resources in science from immediate environment, Science kit, teaching aids; audio, visual, audio-visual.
- Preparation and use of learning aids contextually. Principles of selection and steps for effective use of teaching aids,
- Use of ICT experiences in learning science, text book, work book and its characteristics, and other non print learning materials used in science at school level.

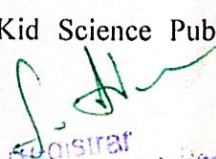
Unit III: Assessment and Evaluation:

- Construction of test items (unit test) to assess simple factual knowledge, higher thinking and application abilities;
- Use of observation techniques, Student-Teacher Profile, recording and evaluating procedures to assess the performance of students' activities, projects, laboratory skills;
- Group assessment; self and peer assessment; assessment of worksheets; students' journals;
- Use of rubrics in assessment. Portfolio assessment. Teacher's reflections in the process.

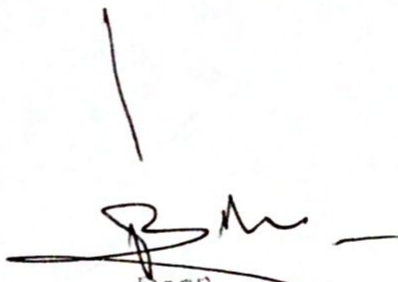
Suggested Reading:


- Bennett, Jeffrey: on teaching Science (print/e-book) Big Kid Science Publication □ Bloom, B.S.: Taxonomy of educational objectives, Mckay Co. New-Delhi.


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- Carin A and B R Sund: Teaching Science through Discovery, Charles E. Merrill Books Inc., Columbus Ohio.
- Chandra, T.: Principles of teaching, Anmol Publication, New Delhi


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