

Pedagogy of Physical Science: Part – II

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Course Code:BED603

Contact Hours: 30

Credit: 02 (L 2, T -0)

MM: 50

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

- To determining planning and organizing aspect in teaching of Science
- To understand the role of lab and use of laboratory experiences for teaching-learning of Science □To facilitate development of scientific attitudes in learners. □To use effectively the different approaches in teaching of Science □To develop ability to use concepts for life skills.
- To understand the nature, importance and strategies of teaching physical science.

Unit I: Planning and Approaches in Teaching:

- Task analysis or pedagogical analysis, identification and organization of concepts for teaching-learning of Science.
- Instructional material required for teaching, identification and writing teaching objectives in behavioral terms, teaching operations, planning ICT applications in learning Science, organizing other activities for teaching-learning of Science.
- Formal Approaches: Observation, experimentation, demonstration, heuristic, project, lecture, laboratory, problem-solving, investigatory approach, concept mapping, programmed instruction, PLA technique, computer assisted instruction.
- Non-Formal approaches: Assignment, tutorials, independent self-study, seminar/conferences, workshop, Science clubs, Science exhibitions, Science fair, Science museum, herbarium, vivarium and scientific hobbies and its advantages.

Unit II: Lesson Planning:

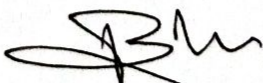
- Meaning and need of lesson planning,
- Characteristics of good lesson plan, types of lesson plan, □Approaches in lesson planning; Herbart and RCEM.
- Design of lesson plan in the content area of Science, simulation teaching skills.
- Unit lesson Planning.

Unit III: Science laboratory and practical work:


- Objectives of laboratory, planning a science laboratory,
- organization of laboratory, types of science lab, rules for maintaining laboratory,
- requirements of apparatus and chemicals for development of science lab at secondary level.
- Laboratory manuals, practical work and record keeping in science lab.

Suggested Reading:

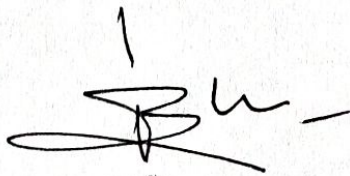
- Bennett, Jeffrey: on teaching Science (print/e-book) Big Kid Science Publication □Bloom, B.S.: Taxonomy of educational objectives, Mckay Co. New Delhi.
- Carin A and B R Sund: Teaching Science through Discovery, Charles E. Merrill Books Inc., Columbus Ohio.
- Chandra, T.: Principles of teaching, Anmol Publication, New Delhi
- Chauhan S.S.: Innovation in teaching, Vikas Publication, New Delhi
- Das, R.C.: Science teaching in schools, Sterling Publication, New Delhi


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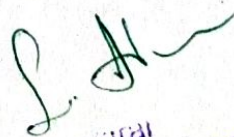
- Judith Bennett: Teaching and Learning Science: A guide to recent research and its applications, Continuum, London.
- Kulshrestha, S.P.: Teaching of Physical Science, R.Lal Book Depot, Meerut
- Nathan S Washton: Teaching Science Creatively, Saunders Company, London.
- Norman Herr: The source book for teaching Science (e-book/print) Wiley Publication
- Novak D J and D Bob Gowin: Learning how to learn, Press Syndicate of the University of Cambridge, Ohio.
- Pandey, Shashi Kiran: Science teaching, Vani Prakashan, New Delhi
- Pathak, R.P.: Teaching skills, Pearson Publication, New Delhi
- Ralph Martin, Colleen Sexton, Kay Wagner, Jack Gerlovich: Science for All Children: Methods for Constructing Understanding, Allyn and Bacon, London.
- Rawat, D.C.: Teaching of Science, Vinod Pustak, Agra
- Robin Millar: Doing Science: Images of Science in Science Education, The Falmer Press, London.
- School Science Review, The Association for School Education, College Lane, Hatfield, Hertfordshire, AL 109 AA, UK.
- Siddiqui, N.N. & Siddiqui, M.N.: Teaching of Science, Doaba House, New Delhi □Singh, R.: Teaching methods in schools, Commonwealth Publication, Delhi.
- Sood, J.K.: Teaching of Physical Science, Agarwal Publication, Agra
- Steve Alsop, Keith Hicks: Teaching Science: A Handbook for Primary and Secondary School Teachers, Kogan Page, New Delhi.
- Yadav, M.S.: Objective Science, Anmol Publication, New Delhi



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