

SEMESTER - IV

CPS 2 d – Part IV - PEDAGOGY OF PHYSICAL SCIENCE

Credits: 2

Internal: 20 marks

Hours/Week: Theory-2hrs Practical - 3hrs

External: 30 marks

Total: 50 marks

Objectives

At the end of the course, the student teachers will be able to:

- implement the knowledge of the Learner Controlled Instruction, Collaborative and Co-operative learning effectively for better curriculum transaction;
- recall the curricular development in Physical Science;
- execute the linkage of Physical Science with community life.

Unit I: Learner Controlled Instruction, Collaborative and Co-operative Learning

Learner Controlled Instruction: Introduction, need and origin, meaning, nature and definition, steps involved, advantages and limitations. Collaborative Learning: Introduction, meaning and definition, procedure involved, computer supported collaborative learning, team based learning, group problem solving, advantages and limitations. Co-operative Learning: Introduction, definition, basic assumptions and features, procedure involved, Academic benefits, Psychological benefits, Social benefits, obstacles involved in co-operative learning.

Unit II: Curricular Development in Physical Science

Curriculum: Meaning and Definition- Principles of curriculum construction- Criteria for selection of content- Curriculum improvement projects in India- Curriculum improvement projects abroad- CHEM Study, PSSC, CBA.

Unit III: Linkage of Physical Science with Community Life

Linkage of School with Community- Organization of Seminars, symposiums and workshops in Science utilizing the resources of the community (Human and Material)- Field trips to places of Science interest: Planetarium, Museum, Space Centers, Industries- Organization of Science Fairs- Improvised Apparatus.

Suggested references:

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- ❖ Carin., & Sund.R. (1989). *Teaching Modern Science*. U.S.A : Merrill Publishing Co.
- ❖ Chauhan, S.S. (1985). *Innovation in Teaching and Learning Process*. New Delhi: Vikas Publishing House.
- ❖ Falvery, P., Holbrook, J.,& Conian, D. (1994). *Assessing Students*. Hongkong: Longman Publications.
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- ❖ Heiss, Oboum., & Hoffman.(1961).*Modern Science Teaching*. New York: Macmillan & Co, Limited.
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- ❖ Jenkins, E.W. (2000). *Innovations in Science and Technology Education. Vol. VII*, Paris: UNESCO.
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- ❖ Khana, S.D., Sexena, V.R. Lamba, T.P., & Murthy, V. (1976). *Technology of Teaching*. Doaba Publishing House.
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- ❖ Natrajan,C. (Ed.). (1997). *Activity Based Foundation Course on Science Technology and Society*. Mumbai: Homi Bhaba Centre for Science Education.
- ❖ Nayak. (2003). *Teaching of Physics*. New Delhi: APH Publications.
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- ❖ Popham, W.J. (2010). *Classroom Assessment: What teachers need to know (6th ed.)*. New York: Prentice Hall.
- ❖ Radha Mohan. (2007). *Innovative Science Teaching for Physical Science Teachers*. New Delhi: Prentice Hall of India Private Limited.
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- ❖ Sonika Rajan. (2012). *Methodology of Teaching Science*. New Delhi: Dorling Kindersley (India) Pvt.Ltd.
- ❖ Thurber,W.A., & Collette,A.T.(1964). *Teaching Science in Today's Secondary School*. New Delhi: Prentice Hall of India Private Limited.
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- ❖ Yadav, M.S. (2003). *Teaching of Science*. New Delhi: Anmol Publications.
- ❖ பன்னீர் செல்வம், அ. (2009), இயற்பியல் வேதியியல் கற்பிக்கும் முறைகள். சென்னை: சாந்தா பப்ளிஷர்ஸ்
- ❖ உமா பாஸ்கரன், T. (2009). பொருளறிவியல் கற்பித்தல் முறைகள் -I. சென்னை : சாரதா பதிப்பகம்.
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- ❖ செந்தில் குமார், சு. (2010). பொருளறிவியல் தாள்- I: நாமக்கல் : சமயுக்தா பதிப்பகம்.
