

SEMESTER - III

CPS 2c – Part III - 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:

- classify the various learning resources to support effective teaching;
- execute action research and disseminate the results;
- gain clarity on the various tasks to be executed during field immersion.

Unit I: Learning Resources

Physics and Chemistry Laboratory- Structure and Design- Organization and maintenance of the Physical Science Laboratory- Maintenance of various Registers: Accession, Consumable, Non-consumable, Issue and Breakage Registers-Storage of Apparatus and Chemicals. Science Textbooks- Qualities of a good Science textbook- Science Library: Encyclopedias, Dictionaries, Magazines, Journals, Activity books, Science fiction, Science learning books. Web-based Learning- Multimedia, use of the internet, e-learning, Tele and Video conferencing

Unit II: Action research

Action Research- Meaning, need for classroom research- difference between action research and fundamental research- steps in action research- journaling the results of classroom research

Unit III : Field Immersion

Tasks of student-teachers during internship :

- Observation of the teaching of mentor teachers and peer student-teachers,
- Institutional and Individual case study,
- Lesson plan, Unit plan and teaching- learning materials,

- Question paper and other tools of assessment,
- Reflective diary of school internship,
- Co-Scholastic activities,
- Teaching as a substitute teacher.

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.
- ❖ Gupta,S.K.(1985). *Training of Physical Science in Secondary Schools*. New Delhi: Sterling Publication (Pvt) Limited.
- ❖ Harms, N., & Yager, R. (1981). *What Research Says to the Science Teacher? Vol. 3*, U.S.A: National Science Teachers Association.
- ❖ Heiss, Oboum., & Hoffman.(1961).*Modern Science Teaching*. New York: Macmillan & Co, Limited.
- ❖ Husen, T., & Keeves, J.P., (Ed.). (1991). *Issues in Science Education*. London: Pergamon Press.
- ❖ Jenkins, E.W. (2000). *Innovations in Science and Technology Education. Vol. VII*, Paris: UNESCO.
- ❖ Joseph. (1966). *The Teaching of Science*. London: Harvard University Press.
- ❖ 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.
- ❖ Owen, C.B. (1966). *Method of Science Mastery*. English Language Society and Macmillan Company Limited.
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- ❖ PanneerSelvam, A. (1976). *Teaching of Physical Science (Tamil)*. Chennai: Government of Tamil Nadu.
- ❖ 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.
- ❖ Rao, C.S.(1968). *Science Teachers Handbook*. American Peace Crops.
- ❖ Sampath, K.(1981). *Introduction to Education Technology*. Sterling Publishers.
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- ❖ Sharma, R.C. (2009). *Modern Science Teaching*. Meerut: Dhanpat Rai and Sons.
- ❖ Siddiqui & Siddiqui. (1985). *Teaching of Science Today and Tomorrow*. New Delhi: Doals House.
- ❖ 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.
- ❖ Williams, B., (1999). *Internet for Teachers*. London: John Wiley & Sons.
- ❖ 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.
- ❖ ராதா மோகன். (2010) பொருளறிவியல் கற்பித்தல் முறைகள். புது டெல்லி: நீல்கமல் .
- ❖ செந்தில் குமார், சு. (2010). பொருளறிவியல் தாள்- I: நாமக்கல் : சமயுக்தா பதிப்பகம்.
