

## SEMESTER - IV

### CPS 2d– Part IV - PEDAGOGY OF BIOLOGICAL SCIENCE

**Credits: 2**

**Internal: 20marks**

**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;
- acquire knowledge about the curricular development in effective teaching of Biological Science;
- appreciate the linkage of Biological Science with community life.

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

Introduction-LCI - Origin and need, Definition, Steps involved, Advantages and Limitations; collaborative learning: definition, need, procedure merits and limitations, team based learning, group problem solving, problem based solving co-operative learning: introduction, definition, steps in co-operative learning, obstacles in introducing cooperative learning, resistance from students, teachers, authoritarians' and parents.

#### **Unit II: Curricular development in Biological Science**

Introduction -Curriculum in Science in particular Biology-Principles of planning curriculum- process and construction of curriculum-Trends in curriculum. NCERT Curriculum-BSCS & Nuffield Secondary Science Projets

#### **Unit III: Linkage of Biological Science with Community Life**

Introduction –Utilization of community resource-Importance of museum, ,Library, Reference books , magazines related to Science; Disease and medicines , Health and Hygiene, Reel and Real Objects, Graphs and Charts, Radio and Audio tapes and Video tapes and News papers.

### Suggested references:

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- ❖ Arulselvi,E. (2007). *Teaching of Science*. Chennai: Saradha Publication.
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- ❖ Bhatnagar,A.D. (2004). *Teaching of Science*. Meerut: Surya Publications.
- ❖ Buffaloe, Neal., & Throneberry, J. B. (1972). *Principles of Biology teaching*. New Delhi: Prentice – Hall of India Limited.
- ❖ Frost Jenny., & Turner Tony. (2005). *Learning to teach Science in Secondary school*. New York: Routledge Palmer Publication.
- ❖ Garrett. (1979). *Statistics in Psychology and Education*. Bombay: Vakils, Feffer and Simons Ltd.
- ❖ Green, T. L. (1965). *The teaching of biology in tropical secondary schools*. London: Oxford University Press.
- ❖ Harms, N., & Yager, R. (1981). *What research says to the science teacher (Vol. 3)*. Washington: National Science Teachers Association.
- ❖ Heiss. E. D., Obown, S., & Hoftman, C. W. (1961). *Modern science teaching*. New Delhi: Macmillian Company Press.
- ❖ Khana, S.D,et al. (1976). *Technology of science teaching*. New Delhi: Doaba House.
- ❖ Natrajan, C. (1997). *Activity based foundation course on science technology and society*. Mumbai: Homi Bhaba Centre for Science Education.
- ❖ Korde., & Sawant.(1980). *Science and Scientific Method*. New Delhi: Himalaya Publishing House.
- ❖ Passi, B. K. (1976). *Becoming a Better Teacher: Micro teaching approach*. Ahemedabad: Sahitya Mudranalaya.

- ❖ Prasad Janardhan. (1999). Practical aspects in Teaching of Science. New Delhi: Kanishka Publication.
- ❖ Saunders, H. N. (1967). The teaching of general science in tropical secondary school. London: Oxford University Press.
- ❖ Sharma, Jagdish. (2006). Models of Teaching Science. Jaipur: Raj Publishing House.
- ❖ Veena Rani Pandey. (2004). Major Issues in Science Teaching. Summit Enterprises.
- ❖ வேணுகோபால்.கோ, நாகராஜன் கி. (2012). உயிரியல் கற்பித்தல். சென்னை :இராஉமா பாஸ்கரன். (2007). உயிரியல் கற்பித்தல். சென்னை: சாரதா பதிப்பகம்
- ❖ கே.ஆர்.திருவேங்கடசாமி. (2007). உயிர் வாழ்வதும் உயிரி வேதியியலும். சென்னை:கௌரா ஏஜென்ஸிஸ்.
- ❖ கே. ராஜம்மாள்.(2005). உயிரியல் கற்பிக்கும் முறைகள். சென்னை: சாந்தாபதிப்பகம்.
- ❖ மா. மலர்விழி, மா. உமாமகேஸ்வரி. (2008).உயிரியல் கற்பித்தல். மதுரை:மாநிலா பப்ளிஸர்ஸ்.

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