SEMESTER - IV

CPS 2d– Part IV - PEDAGOGY OF BIOLOGICAL SCIENCE

Credits: 2 **Internal: 20 marks**

Hours/Week: Theory-2hrs & Practical-6hrs **External: 30 marks**

Total: 50 marks

Course Learning Outcomes:

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

- apply the knowledge of learner-controlled instruction, collaborative and co-operative learning effectively for better curriculum transaction;
- analyze the curricular development in Biological Science;
- discover the linkage of Biological Science with community life;
- prepare a report on the organization of co-scholastic activities;
- construct modules in Biological Science;
- analyse and draw inference on various websites related to Biological Science;
- prepare a report on the maintenance of records and registers in schools;
- write a report on the environment context of their co-operative schools; and
- include field trips for enrichment of the teaching-learning process.

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

Introduction - Learner Controlled Instruction (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 Projects.

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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Bhandala, Chadha, & Khanna. (1985). *Teaching of Science.* New Delhi: Prakash Brothers Educational Publishers.

Bhatnakar,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.

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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.

Sharma, Jagdish. (2006). *Models of Teaching Science*. Jaipur: Raj Publishing House.

Veena Rani Pandey. (2004). *Major Issues in Science Teaching.* Summit Enterprises.

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கே.ஆர்.திருவேங்கடசாமி. (2007). உயிர் வாழ்வதும் உயிரிவேதியியலும். சென்னை: கௌரா ஏஜென்ஸிஸ்.

கே.ராஜம்மாள். (2005). உயிரியல் கற்பிக்கும் முறைகள், சென்னை: சாந்தா பதிப்பகம்.

மா.மலர்விழி, மா.உமாமகேஸ்வரி. (2008). உயிரியல் கற்பித்தல். மதுரை: மாநிலா பப்ளிஸர்ஸ்.

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