



**SEMESTER – II**

<b>Course Code: BD2BS</b>	<b>Credits: 5</b>
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**PEDAGOGY OF BIOLOGICAL SCIENCE – II**

**COURSE OBJECTIVES**

- CO1. Understand the concept of Pedagogical Analysis.
- CO2. Comprehend the different teaching models.
- CO3. Demonstrate the activity - based and group Controlled Instruction.
- CO4.State various Resources in Teaching Learning Process of Biological Science.
- CO5. Analyze the Assessment in Pedagogy of Biological Science.

**UNIT -1 PEDAGOGICAL ANALYSIS**

Paradigm shift from pedagogy to Andragogy to Heutagogy – Concept and stages - Critical Pedagogy: Meaning, Foster independent thinking through critical pedagogy, Need and its implications in Teacher Education. Interaction Analysis: Flanders' Interaction analysis, Galloway's system of interaction analysis (Recording of Classroom Events, Construction and Interpretation of Interaction Matrix).

**UNIT-II: TEACHING MODELS**

Bloom's Mastery Learning, Skinner's Operant Training, Bruner's Concept attainment, Ausubel's Advance Organizer, Glaser's Basic Teaching (Classroom Meeting), Byron Massials and Benjamin cox's social inquiry, Carl Roger's Non-directive and William Gordon's Synectics models.

**UNIT-III: ACTIVITY-BASED AND GROUP CONTROLLED INSTRUCTION**

Activity Based Instruction: Concept, Classification - Role Play, Simulation, Incident method, Case Study method, Gaming and prioritisation exercises. Group Controlled Instruction: Concept, Definition and Importance of Group Controlled Instruction – Types of Group Controlled Instruction: Group Interactive sessions, Co-operative Learning methods, Group investigation, Group Projects.

**UNIT-IV: LEARNING RESOURCES**

Need and significance of learning resources in Biology - Identifying and analyzing the learning resources in teaching-learning process of Biology - Biology Laboratory as a learning resource - Use of Science and Biology experiment kits in teaching-learning of Biology - Field visits and excursion as learning resources in Biology - ICT based virtual experiments and simulations as learning

resource in Biology - Role of the teacher - Limitations and hurdles in the use of various learning resources in Biology.

## UNIT – V: ASSESSMENT IN PEDAGOGY OF BIOLOGICAL SCIENCE

Measurement and Evaluation - Differentiate between Assessment and Evaluation - Types of evaluation: Formative, Summative, Diagnostic Test – Standardization of Test, Principles and steps involved in the Construction of Achievement test – Blue Print and Question Pattern - Feedback Devices: Meaning, Types, Criteria, - Assessment of Portfolios, Reflective Journal, Field Engagement using Rubrics, Competency Based Evaluation.

### SUGGESTED ACTIVITIES

1. Actual experience of Science/Biology laboratory of practicing school (report submission)
2. Planning and conducting experiments for Science/Biology.
3. Designing laboratory experiences for using in teaching-learning process in classroom situation – two innovative activities and two improvised apparatus (artifacts).
4. Presentation (s) used for teaching-learning in the class.
5. Critical review of a Textbook of Science/Biology.

### TEXT BOOKS

1. Bloom, S. Benjamin, (1984). *Taxonomy of educational objectives*. Book I Cognitive domain. New York: Longmans, Green.
2. Joyce & Weil, (2004). *Models of teaching*. New Delhi: Prentice Hall of India.
3. Miller, David.F.(1938) *Methods and materials for teaching biological sciences*. New York: McGraw Hill Book Company.
4. NCERT (1969), *Improving Instructions in Biology*, New Delhi.
5. Passi, B.K. (1991). *Models of teaching*. New Delhi: NCERT.

### SUPPLEMENTARY READINGS

1. Verma Ramesh, & Sharma, K. Suresh, (1998). *Modern trends in teaching technology*. New Delhi: Anmol Publications.
2. Bawa, M.S.&Nagpal, B.M. (2010). *Developing teaching competencies*. New Delhi: Viva Book House.
3. Bhatia, K.K. (2001). *Foundations of teaching learning process*. Ludhiana: Tandon Publications.

## E- RESOURCES

1. [www.sciencesourcebook.com](http://www.sciencesourcebook.com)
2. [www.csun.edu/science/biology](http://www.csun.edu/science/biology)

## COURSE OUTCOMES

After completion of this course, the student-teachers will be able to:

CO1. examine the importance of Critical Pedagogy.

CO2. appreciate the various models of teaching.

CO3. practise Activity Based Instruction in teaching of biological science.

CO4. analyse and use the resources for teaching biological science.

CO5. handle varioustypes of evaluation in teaching biological science.

## OUTCOME MAPPING

COURSE OUTCOMES	PROGRAMME SPECIFIC OUTCOMES																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
<b>CO1</b>						*																		
<b>CO2</b>						*												*		*				
<b>CO3</b>		*										*			*									
<b>CO4</b>					*												*							
<b>CO5</b>				*														*						