SEMESTER – I

Course Code: BD1BS	Credits: 5

PEDAGOGY OF BIOLOGICAL SCIENCE -I

COURSE OBJECTIVES

CO1: Acquire knowledge on the Aims and Objectives of teaching Biological Science.

CO2: Understand the steps in planning a lesson.

CO3: Comprehend the teaching skills in Biological Science.

CO4: Identify the various methods of teaching Biological Science.

CO5: Develop interest on the resources for teaching biological science.

UNIT- I: AIMS AND OBJECTIVES OF TEACHING BIOLOGICAL SCIENCE

Biological Science: Meaning -Aims and objectives of teaching Biological Science in schools – Need and significance of teaching Biological Science- Nature – Scope -Values of Teaching Biological Science. Bloom's Taxonomy of Instructional Objectives: Cognitive, Affective and Psychomotor Domains, Revised Bloom's Taxonomy 2001 (Anderson &Krathwohl) Interrelation among the domains – Correlation between subjects.

UNIT-II: TEACHING SKILLS

Micro-Teaching: Concept, Definition, Steps and Cycle - Micro-teaching Vs Macro-Teaching - Skill of Set Induction - Skill of Explaining, Skill of Questioning, Probing skills, Skill of Stimulus Variation, Skill of Reinforcement, Skill of non-verbal clues, Skill of Closure, Skill of Black Board Usage - Link lesson – Model episode.

UNIT – III: APPROACHES OF TEACHING

Approaches of Teaching Biological Science: The Concentric Approach, Topical Approach, Chronological Approach, Unit Approach, Correlated Approach and Integrated Approach - Lesson Planning: Need for Lesson Planning, Steps in Lesson Planning, - Organizing Teaching: Memory Level (Herbartian Model), Understanding Level (Morrison teaching Model), Reflective Level (Bigge and Hunt Teaching Model)– Unit Plan – Lesson Plan Writing.

UNIT-IV: METHODS OF TEACHING

Teacher-centred methods:Lecture method – Demonstration method – Team Teaching. Learner –centred methods: Laboratory method - Peer tutoring/ teaching by students – Project method – Individual activities – Experiential method – Teacher guided learning – Problem-solving method –Small group/whole class interactive learning – Students' Seminar – Group discussion. Recent Trends: Constructivist learning – Problem-based learning – Brain-based learning – Collaborative learning.

UNIT-V: INSTRUCTIONAL MEDIA

Print Resources: Newspapers – Journals and magazines – Science Encyclopaedias. Audio Resources: Radio talk – Audio Tapes – DVDs/CDs. Visual resources: Pictures – Flash cards – charts – Posters – Photographs – Models. ICT Resources: Radio – Television- Internet, Multimedia, Interactive whiteboard, Online Teaching Resources. Community resources: Zoological gardens, Botanical gardens, Eco-park- Aquarium – Science Exhibition / Fair – Fieldtrip –New Emerging Media: Tele-Conferencing, Communication Satellites, Computer Networking, Word Processors, Blended Learning, Flipped Classroom, Artificial Intelligence and Augmented Reality - Qualities of a good Biology Textbook – Qualities of a Biology teacher.

SUGGESTED ACTIVITIES

1. Students' seminar on Blended learning, Flipped classroom and Artificial Intelligence.
2. Students' Seminar on Lesson Plan Writing.
3. Teacher talk / Invited talk on Bloom's Taxonomy of Instructional Objectives.
4. Teacher talk / Invited talk on Micro teaching Steps, Cycle, principles and on different skills like, skill of stimulus variation, skill of reinforcement and skill of questioning.
5. Teacher talk on Herbartian Model and Morrison Teaching Model.

TEXT BOOKS

1. Nunn, Gordon (1951), Handbook for Science Teachers in Secondary Modern Schools, London: John Murray.
2. Thurber, Walter (1964), Teaching of Science in Toda's Secondary Schools, New Delhi: Prentice Hall.

3. Vaidya, N. (1971), The impact of Science Teaching, New Delhi: Oxford and IBH Publication Co.
4. Voss, Burton F.A. and Bren, S.B., Biology as Inquiry: A Book of Teaching Methods.
5. Waston, N.S. (1967), Teaching Science Creativity in Secondary School, London U.B. Saunders Company.

SUGGESTED READINGS

1. Bremmer, Jean (1967), Teaching Biology, London: MacMillan.
2. Heller, R. (1967), New Trends in Biology Teaching, Paris : UNESCO
3. Miller, David, F. (1963), Methods and Materials for Teaching the Biological Sciences, New York, McGraw Hill.
4. NCERT (1969), Improving Instructions in Biology, New Delhi.
5. Novak, J.D. (1970), The Improvement of Biology Teaching Modern Science Teaching, Delhi: DhanpatRai& Sons.

COURSE OUTCOMES

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

CO1: examine the Aims and Objectives of pedagogy of economics.

CO2: discuss the ways of planning for instruction.

CO3: analyse the importance of teaching skills.

CO4: construct a lesson plan for teaching economics.

CO5: use the resources for teaching economics.

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
CO1										*						*								
CO2						*				*			*		*		*							
CO3												*									*		*	
CO4		*					*											*			*		*	
CO5					*												*							*