Pedagogy of Biological Sciences

Objectives: After completing the course the pupil teachers will be able to ---

- Develop a broad understanding of principles and methods used in teaching of Biological Sciences
- Acquire and practice essential skills needed for teaching biological science at secondary school level
- Develop an understanding of modern techniques and approaches for teaching biological science
- Prepare unit plan, lesson plan and unit test in biological science
- To acquire necessary skills and training for school based activities such as science clubs, science fairs, organisation of lab etc.

UNIT – I CONTENT
1. Eco-system, components of ecosystems --- Biotic and Abiotic
2. Food chain and food web --- various examples from land, fresh water and marine
3. Environmental pollution --- air and water pollution - their sources and effects
4. Environment protection and conservation --- various acts of the Government related to environment protection and conservation
5. Sustainable Development --- meaning, need and importance. Biodiversity --- its concept and importance

UNIT – II AIMS AND OBJECTIVES OF TEACHING BIOLOGICAL SCIENCE
1. Aims and objectives of teaching Biological Science at the Secondary School Level in terms of their learning outcome
2. Unit Planning --- meaning, importance and preparation
3. Lesson Planning --- need, importance and preparation of lesson plans
4. Different types of teaching aids --- Audio, Visual and Audio-Visual aids: their uses and limitations

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UNIT – III  METHODS OF TEACHING BIOLOGICAL SCIENCE

1. Lecture method --- guidelines for effective lecture. Merits & demerits of lecture method
2. Lecture-cum-demonstration method --- merits and limitations, preparation for effective demonstration
3. Heuristic method --- meaning and use of heuristic method in teaching biology. Merits and limitations of heuristic method
4. Project method --- meaning of a project. Main features of a project. Advantages and disadvantages of project method

UNIT – IV  EVALUATION AND ACTIVITIES

1. Preparation of lesson plans by using ICT
2. Construction of different types of test items in biological sciences
3. Science clubs --- objectives, organisation and activities
4. Science fairs --- objectives, organisation and activities
5. Biological science Laboratory --- its equipments and maiontenance