Bachelor of Education (B.Ed.)

Title of the Course: Pedagogy IIA: P.2.8A: Biology
(Semester: I)

Credits: 2
MM: 50 (External 35 Internal 15)
Contact Weeks: 15

Introduction of the Course

This course is aimed at developing understanding of the place of biology in school curriculum and the aims of teaching biology at various stages in the curriculum. The course will also enable pupil-teachers to effectively maneuver and develop insights related to pedagogical content knowledge, teaching-learning resources and laboratory work for meaningful learning.

Learning Outcomes

After completion of the course student will be able to:

1. Develop an in-depth understanding of the role of biology in the school curriculum.
2. Enable future teachers to understand relation of biology with other disciplines and integration within different branches of science.
3. Develop understanding of Pedagogical Content Knowledge (PCK) and its implications for effective biology teaching.
4. Exhibit competency in selecting and designing diverse teaching-learning resources, including textbooks, reference materials, improvisations, and multimedia packages, aligning them with content, learner needs, and the broader educational context.
5. Develop insights and critically view the role of laboratories in biology.
6. Develop competencies, and skills in organizing and managing a biology laboratory in its various forms.

Number of Unit 3 **Weeks 15 = 30 hours**

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Unit 1: Pedagogical Underpinning (6 weeks = 12 hours)

- Concept of Scientific literacy
- Evolution and Place of Biology in school curriculum.
- The concept of PCK and its implications in Biology teaching.
- Aims of teaching Biology at the higher secondary level with linkages to secondary and primary level.
- Objectives and learning outcomes of teaching Biology with special reference to the development of thinking and process skills
- Integration of STSE principles in biology pedagogy

Unit 2: Teaching- Learning Resources (5 weeks = 10 hours)

- Criteria for selecting/designing Teaching-Learning Resources: content based, learner based and context based.
- Textbook, reference books, encyclopedia, newspaper and alike
- Improvisations and Science Kits
- Instructional aides, computer aided instruction, multi-media packages, interactive software and simulations, websites, Open Education Resources (OER) etc.
- Planning of extended experiences, science quiz, science fair, science corner/resource room, science club, excursion and related SUPW activities.

Unit 3: Organization of the Biology Laboratory (4 weeks = 8 hours)

- Layout and design of the Biology laboratory.
- Storage of apparatus, consumable and non-consumable items/materials
- Maintenance of laboratory records.
- Making arrangements for the conduct of experiments.

Practicum/ Suggested Projects / Assignments (Any Two)

1. Analysis and Reflection on Text/Book/Curriculum related to Biology
2. Developing Teaching-Learning resources for the democratic classroom environment
3. Planning of any one extended experience like creating a science corner, science quiz etc.
4. Making arrangements of experiments in the biology laboratory

Note: On the basis of the above, the teacher may design his/her own relevant projects/ assignments.

Essential/ Recommended Readings

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Teaching Learning Process

The course will be taught through interactive pedagogic methods such as classroom discussion, debates, discussions, critical analysis, collaborative learning tasks which enhance skills in the area and innovative projects. Reflective expression and learning will be encouraged.

Assessment Method

The assessment will be formative in nature and will factor in student participation. Individual and group tasks and assignments will be given. Summative evaluation will be done through end-semester examination.

Key words: Pedagogy of Biology, Teaching Learning Resources.

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