Course: Teaching of Biology
Credit Hours: 3

Introduction: This course is designed specifically to equip the prospective science teachers with the latest pedagogical knowledge required to teach the contents of Biology at secondary level. In addition, the course will also provide the prospective science teachers an acquaintance with the modern assessment techniques and use of laboratory and computers in the field of teaching of Biology**.**

Objectives:

Students will be able to

Differentiate between method, technique and strategy in context of teaching.

Describe various methods for teaching of Biology.

Identify most suitable method to teach diverse topics.

Extend their knowledge of teaching to implement various methodologies.

Recognize the importance of teaching of Biology.

Demonstrate the use of low cost no cost materials for teaching of Biology.

Apply the computer technology for teaching of Biology.

Use the laboratory apparatus effectively for disseminating biological knowledge.

Course Contents

1. Teaching of Biology

Introduction

The Nature of science

Scientific literacy and its importance

Definition of sciences: Science as product and process

The products of science

Processes of science

Scientific attitudes

The nature of scientific laws, facts, concepts and theories

Physical sciences and limitations of science

Definition of Biology

Importance of Biology in everyday life

Why teach Biology

2. Aims and Objectives of teaching Biology

Aims of teaching Biology

Criteria for selection of aims

Objectives of teaching Biology

Writing objectives

Difference between aims and objectives

3. Methods of teaching Biology

Various methods of teaching Biology

Lecture method

Demonstration method

Heuristic method

Assignment method

Project method

Inductive method

Deductive method

Scientific method

Problem method

Choice of method

4. The Nature of Children and Science Teaching

Piagetian theory of cognitive development

Stages of cognitive development

Characteristics of individual in various stages of cognitive development

Piaget's theory and science curriculum

Implications of Piagetian theory in facilitating learning of science

The process of learning according to Robert Gagne, Davis Ausubel and Bruner

5. Lesson Planning

Advantages of the Lesson Planning

Feature of a lesson plan

Steps in lesson plan

6. Teaching aids in Biology

Importance of teaching aids
Principles for selection of teaching aids
Principles for effective use of teaching aids

Different types of teaching aid material

7. Apparatus and Equipment

Introduction

Locally produces low cost equipment

Chemicals

Charts, Diagrams, Pictures and Bulletin board

Improvised Apparatus

Text books

8. The Biology Teacher

Duties and Responsibilities of a Biology teacher

Effective use of Biology Laboratory

Making Biology teaching more Interesting

9. Evaluation in Biology

Introduction

Designing of Test

Evaluation of Functional skills

The Assessment of Practical work

Recent Trends in Teaching of Biology

Evaluation Criteria

Examination	Type	Marks
Internal Examination	Sessional Work	15%
	Mid-Semester	25%
External Examination	Final Semester	60%

References

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Eilks, I., Byers, B., Royal Society of Physics (Great Britain), & European Physics Thematic Network. (2009). *Innovative methods of teaching and learning Physics in higher education*. Cambridge, UK: RSC Publishing.

Gallagher-Bolos, J. A., & Smithenry, D. W. (2004). *Teaching inquiry-based Physics: Creating student-led scientific communities*. Portsmouth, NH: Heinemann

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Niaz, M. (2008). *Teaching general Physics*. New York: Nova Science Publishers.

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Peterson, A. D. C. (1965). *Techniques of Teaching: Volume 1*. Oxford: Pergamon Press.