

Module Code:	Bio - 111
Module title:	Biology – I (Cell and Biotechnology)
Name of Scheme:	BS Chemistry (4 Years)
Semester :	2 nd
Module Type:	Compulsory
Module Rating:	3 Credits

1. Introduction of the Course:

The course is organized to provide an adequate knowledge about the morphology and functioning of cell and cellular organelles. It is generally aimed to familiarize students with the cell cycle and systematic knowledge of genes, their inheritance pattern. Additionally, the concept of biotechnology and biodiversity has also been covered.

2. Course Objectives

The course is designed:

1. To give systemized knowledge of life.
2. To provide an adequate knowledge about basic concepts of cell biology.
3. To increase the understanding of the students about the mechanism of cell division, study of genes and their inheritance pattern.

3. Course Contents

1. Biological Methods, Principles of Cellular Life, Chemical Basis, Structure and Function, Principles of Metabolism, Energy Acquisition.
2. Principles of Inheritance, Mitosis and Meiosis, Chromosomes, Observable Inheritance Patterns, DNA Structure and Function, RNA and Proteins, Genes, Genetic, Engineering and Biotechnology, Biodiversity.
3. Fundamental Concept of Biodiversity, One or two examples of each of the following from commonly, found organism, Prions, Viruses, Bacteria, Protistans, Algae, Fungi, Plants, Crops, Animals, Invertebrates, Vertebrates.

4. Teaching-learning Strategies

1. Lectures
2. Group Discussion
3. Laboratory work
4. Seminar/ Workshop

5. Learning Outcome:

1. Students will be able to describe, apply, integrate the basic concept of cell biology.
2. They will learn about the cell cycle.
3. The obtained knowledge will enable students to know about genetics and biotechnology.
4. This will enable them qualify for basics of biodiversity.

6. Assessment Strategies:

1. Lecture Based Examination (Objective and Subjective)
2. Assignments
3. Class discussion
4. Quiz
5. Tests

7. Recommended Readings:

1. Roberts, M.M., Reiss and G. Monger. 2000. Advanced Biology, Nelson.
2. Starr, C, and R, Taggart, 2001. Biology: The Unity and Diversity of Life Brooks and Cole.
3. Campbell, N.A., J.B, Reece, L.G. Mitchell, M.R, Taylor. 2001. Biology: Concepts and Connections. Prentice-Hall