

**DEPARTMENT OF BIOTECHNOLOGY
GOVERNMENT DEGREE COLLEGE BARAMULLA**

SEMESTER 1st (NEP)

MULTIDISCIPLINARY COURSE

SUBJECT: BIOTECHNOLOGY

TITLE: (INTRODUCTION TO BIOTECHNOLOGY AND HUMAN HEALTH)

Code: BBT22M103

THEORY (3 CREDITS: 48 HOURS)

Objective: This open elective course is aimed to

- *Introduce students to basic concepts of biotechnology,*
- *Describe application of biotechnology to agriculture, human and animal health*
- *Comprehend contributions of biotechnology to forensic sciences and biomedical fields, such as diagnostics, genomics and therapeutics*

Expected Learning Outcomes:

1. *Understanding of basic applications of biotechnology.*
2. *Understanding of some of the applications of biotechnology in agriculture.*
3. *Understanding of some of the applications of biotechnology in human health.*

Unit – 1: Introduction to Biotechnology (16 Hours)

Definition, Scope and Milestones in Biotechnology.

Traditional and Modern Biotechnology, Different branches of Biotechnology

Unit – 2: Applications of Biotechnology in Agriculture (16 hours)

Applications of biotechnology in Agriculture; Plant tissue culture, Concept of transgenic and GM crops (Bt cotton, Bt brinjal, golden rice); Increasing shelf life of fruits, Nutraceuticals and edible vaccines

Unit -3: Biotechnology in Human health and forensics (16 hours)

Introduction to vaccines; Use of Biotechnology in diagnosis, Gene therapy; Pre-natal diagnosis, genetic counseling; Forensic applications- Solving crimes of murder and rape

BOOKS RECOMMENDED

1. Biotechnology for Beginners: Reinhard Renneberg Academic Press Elsevier Inc.
2. Biotechnology Demystified: Sharon Walker
3. Biotechnology, Satyanarayana, Books & Allied Ltd.