

**BASIC BIOTECHNOLOGY**  
**(GENERIC ELECTIVE-I)**

**Credits : 4**

**II Year / II Semester**

**Subject code : MBT19403 A**

**No. of lecture hours: 60**

**OBJECTIVE:** To learn fundamentals in biotechnology and to gain knowledge on industrial applications of Biotechnology

**CO1:** Explains the basics in Biotechnology

**CO2:** Gives detailed information about concepts in Genetics

**CO3:** Explains the basics in Microbiology

**CO4:** Describes concepts of Plant Biotechnology

**CO5:** Clearly gives information about applications of Biotechnology in various fields

<b>Unit I: Introduction to Biotechnology</b>	<b>12Hrs</b>
1.1 Introduction to Biotechnology	(2)
1.2 Scope and Importance of Biotechnology	(2)
1.3 Concept of Cell as basic unit of life	(2)
1.4 Prokaryotic cell	(2)
1.5 Eukaryotic cell	(2)
1.6 Importance of Biomolecules in cell	(2)
<b>Unit II: GENETICS</b>	<b>12Hrs</b>
2.1 Introduction to genetics	(2)
2.2 Concept of gene	(2)
2.3 Chromosomes	(2)
2.4 Genetic inheritance-Mendel Laws	(2)
2.5 Genetic Disorders	(2)
2.6 Applications of genetics	(2)
<b>Unit III: MICROBIOLOGY</b>	<b>12Hrs</b>
3.1 Introduction to Microbiology	(2)
3.2 Microbial media and its applications	(2)
3.3 Sterilization	(2)
3.4 Bacteria, Fungi, Algae & Virus	(2)
3.5 Use of Chemical Agents in Controlling microorganisms	(2)
3.6 Importance of Microbes in Biotechnology	(2)
<b>UNIT –IV: PLANT BIOTECHNOLOGY</b>	<b>12Hrs</b>
4.1 Introduction to Tissue Culture	(2)
4.2 Tissue Culture Media and Composition	(2)
4.3 Sterilization Techniques	(2)
4.4 Initiation of Callus	(2)
4.5 Micro propagation-Organogenesis	(2)
4.6 Applications of Plant Biotechnology	(2)
<b>Unit V: Applications of Biotechnology</b>	<b>12Hrs</b>
5.1 Applications of Biotechnology in Plants	(2)
5.2 Applications of Biotechnology in Animals	(2)
5.3 Applications of Biotechnology in Fermentation Industry	(2)
5.4 Applications of Biotechnology in Medical Diagnostics	(2)
5.5 Applications of Biotechnology in Environment	(2)
5.6 Ethics in Biotechnology	(2)