

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E Semester: 4

BIO-TECHNOLOGY

Subject Name: BASIC TAXONOMY & TECHNIQUES

Sr. No.	Course content
1.	History & Terminologies Historical background of taxonomy, contributions of Aristotle, Theophrastus, Linnaeus, Whittaker, etc. Meaning of taxonomy, classification, nomenclature, Scientific nomenclature, species, genus, family, class, phylum, kingdom, etc.
2.	Taxonomical Techniques Morphological, anatomical and biochemical characterization of the organisms, techniques of genetical and molecular characterization of the organisms – GC%, sequencing, homology, conserved sequences and 16S rRNA analysis.
3.	Plant Taxonomy Introduction to plant taxonomy, diversity in plants, early attempts of plant classification, present status of plant taxonomy, scientific nomenclature of plants, important methods of plant classification, important plant families, scope and importance of plant classification, recent developments in plant taxonomy.
4.	Animal Taxonomy Introduction to animal taxonomy, diversity in animals, early attempts of animal classification, present status of animal taxonomy, scientific nomenclature of animals, important methods of animal classification, important phyla of animals, scope and importance of animal classification, recent developments in animal taxonomy.
5.	Microbial Taxonomy Introduction to microbial taxonomy, microbial diversity, early attempts of microbial classification, present status of microbial taxonomy, scientific nomenclature of microorganisms, important methods of microbial classification, categories of microorganisms, scope and importance of microbial classification, recent developments in microbial taxonomy.

LIST OF PRACTICALS

1. To study the taxonomical characteristics of plants
2. To study the T.S. of Dicot Root
3. To study the T.S. of Dicot Stem
4. To study the T.S. of Monocot root
5. To study the T.S. of Monocot Stem
6. To study various tissues and organs of plants in permanent slides
7. To study various tissues and organs of animals in permanent slides
8. To study the mitosis in onion root tips
9. To study the effect of metal on growth of bacteria
10. To study the effect of pH on bacterial growth
11. To isolate and cultivate fungi from soil sample
12. Special studies related to taxonomy

REFERENCE BOOKS:

1. Animal Physiology and biochemistry by R. A. Agarwal,, Anil Shrivastav, Kausha kumar.
2. A text book of Animal Physiology by Sambasivah, Rao and S. Augustine
3. Cell Biology, Genetics.... By P.S. Verma
4. General Microbiology by Pawar and Daginevala
5. General Microbiology by Pleczar and Chain
6. Botany by R.C. Dutta