B.Sc. IV th Year

Subject – Zoology

Course Title – Genetics and Molecular Biology (Paper I)

Course Learning Outcome (CLO):

Upon completion of the course students will be able to

1. **Gain knowledge of basic principles of inheritance and variations.**
2. **Deeper understanding of linkage, Sex determination, Chromosomes, Mutations and mutagens.**
3. **Gain knowledge of Human karyotype, Human Genome project, gene therapy, Structure and function of cell organelles**
4. **Membrane system and Cell signaling.**
5. **DNA replication, repair and recombination and Gene expression (transcription and translations)**
6. **Common career options for Genetics and Cellular and Molecular Biology graduates are: Biotechnologists, Biochemist, Lab technician, Clinical research specialist. Geneticist, Molecular biologist, pharmaceutical researcher, Forensic scientist and Toxicologist.**

B.Sc. IV th Year

Subject – Chemistry

Course Title – Group Theory and Spectroscopy

Course learning outcomes (CLO)

By the end of this course students will acquire the knowledge of following aspects of group theory and spectroscopy:

- **Symmetry and group theory in chemistry and its applications.**
- **Character table and point: groups.**
- **Fundamental principles of spectroscopy.**
- **Microwave, EPR and Mossbauer spectroscopy and their application.**
- **NMR spectroscopy and MASS Spectrometry.**
- **Identification and structure determination of different molecules using various spectroscopic techniques.**

B.Sc. IV th Year

Subject – Botany

Course Title – Diversity of Plants

Course Learning Outcome (CLOS)

After successful completion of the course, the student will be able to -

- **Understand the classification and description of plants.**
- **Acquire knowledge about plants and their utilization.**
- **Identify the economic importance of plants.**
- **Recognize basic distribution patterns and structural organization of plants.**
- **Comprehend concepts in the evolution of plants.**

B.Sc. IV th Year

Subject – Biotechnology

Course Title – Plant Biotechnology

Course learning completion of this course students will be able to

- **Describe regulation of gene expression and implications for plant transformation.**
- **Distinguish plant culture techniques and culture types**
- **Evaluate several methods for stable and transient plant and formation.**
- **Design strategies for plant genetic manipulation against biotic and abiotic stressors.**

B.Sc. IV th Year

Subject – Computer Science

Course Title – Internet of Things

Course Learning Outcomes (CLO)

After completing the course, the student will be able to:

1. **Understand the basic concepts of the lot.**
2. **Use of Devices, Gateways and Communication in lot.**
3. **Learn Arduino and Python Programming.**
4. **Implement lot with Raspberry Pi.**
5. **Explore the relationship between Iot, cloud computing, and data analytics.**