ST. JOSEPH’S COLLEGE FOR WOMEN (AUTONOMOUS) VISAKHAPATNAM

III SEMESTER   **ZOOLOGY** TIME:2HRS/WEEK

Z-Ma2-3551(2) **PRINCIPLES OF GENETICS** MARKS:50

w.e.f 2024-2025 (23AK Batch) **PRACTICAL**  **SYLLABUS**

# LEARNING OBJECTIVES

* + To acquire practical knowledge on the importance of Mendelian principles by solving the problems.
  + To provide the required knowledge on the gene interactions
  + To acquaint the students on Human karyotype & pedigree analysis basics
  + To understand the various genetic concepts through Virtual labs

**COURSE OUTCOMES**

* + CO1- K4- Apply practical knowledge on the importance of Mendelian principles by solving the problems.
  + CO2- K2- Explain about the gene interactions
  + CO3- K2- Describe basics of Human karyotype & pedigree analysis.
  + CO4- K2- Discuss the various genetic concepts through Virtual labs

# SYLLABUS:

1. Study of Mendelian inheritance & Non-mendelian inheritance using suitable examples/Problems
2. Study of linkage recombination, gene mapping using the data
3. Study of human karyotypes
4. Blood grouping and Rh in humans
5. Demonstration of prenatal diagnosis (Virtual lab).
6. Amniocentesis demo or virtual lab
7. Demonstration of Ultrasonography (Virtual lab).
8. Scoring dysmorphic features in syndromic patients
9. Genetic Counselling methods based on case history
10. Construction and analysis of Pedigree

# RFERENCE WEB LINKS:

* + <https://www.iitg.ac.in/cseweb/vlab/anthropology/Experiments/Mendels%20law/index.html>
  + <https://learn.genetics.utah.edu/content/labs/>
  + <https://virtuallabs.merlot.org/vl_biology.html>
  + <https://blog.praxilabs.com/2020/06/30/dna-extraction-virtual-lab/>
  + <https://jru.edu.in/studentcorner/lab-manual/agriculture/Fundamentals%20of%20Genetics.pdf>
  + <https://academicworks.cuny.edu/cgi/viewcontent.cgi?article=1008&context=ny_oers>
  + [https://sjce.ac.in/wp-content/uploads/2018/04/Cell-Biology-Genetics-Laboratory-Manual-17-](https://sjce.ac.in/wp-content/uploads/2018/04/Cell-Biology-Genetics-Laboratory-Manual-17-18.pdf) [18.pdf](https://sjce.ac.in/wp-content/uploads/2018/04/Cell-Biology-Genetics-Laboratory-Manual-17-18.pdf)
  + <https://www.rlbcau.ac.in/pdf/Agriculture/AGP%20113%20%20Fundamentals%20of%20Genetics.pdf>
  + <https://coabnau.in/uploads/1610707528_GPB3.2PracticalManual-Final.pdf>

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