Lecture Plan

Name of the College: Government College of Arts, Science and Commerce. Sanquelim - Goa

Name of Faculty: Mrs.Preethi Pednekar	**Subject:** Zoology	
Paper code: : ZOO-201 **Title of the Course : Cell Biology & Genetics**	**Program: SYBSc**	**Division: A**
Academic year: 2024-25	**Semester: III**	**Total Lectures: 30**

Course Objectives:

1.Imparting understanding of the cellular organisation.
2. Understanding the genetic basis of inheritance.
3. Analyze the structure and function of cells, organelles, and cellular components.
4. Gain practical experience in laboratory techniques used in cell biology and genetics research

Expected Course Outcome:

1. Knowledge of the cellular organisation.
2. Distinction between prokaryotic and eukaryotic cell
3. Interpretation of the transmission of traits based on the laws of inheritance.

4. Predicting the outcome of monohybrid and dihybrid genetic crosses

Student Learning Outcome: At the end of the course, students will be able to
1. Explain the cellular organisation.
2. Distinguish between prokaryotic and eukaryotic cell
3. Interpret the transmission of traits based on the laws of inheritance.
4. Predict the outcome of monohybrid and dihybrid genetic crosses

Month	Lecture From	Lecture To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/ Assignment	ICT Tools	Reference books
June 2024	28 June 24	29 June 2024	01	Module II Prokaryotic chromosome organisation		Power point presentation	. B. Alberts, A. Johnson, J. Lewis, M. Raff, K. Roberts, and P. Walter, Molecular Biology of the Cell (6th edn), Garland Science, 2014. 2. C.B. Powar, Cell biology, Himalaya Publishing House, 2010. 3. C.B. Powar, Genetics –Vol.1 Himalaya

							Publishing House, 2010. 4. E.J. Gardner, M.J. Simmons, D.P. Snustad, Principles of Genetics (8th Edition), Wiley, 2006. 5. J. Hardin, G. Bertoni, L. Kleinsmith, Beckers World of the Cell (8th Edition) Pearson Benjamin Cummins Publishing House, 2014. 6. P.S. Verma and V.K. Agarwal, Genetics 9th edition, S.Chand Publications, 2010
JULY 2024	1 July	6 July	02	, Eukaryotic Chromosome organisation (nucleosome to metaphasic chromosome)		Power point presentation	
	8 July	13 July	02	Cell division: -Mitosis - stages and significance		Power point presentation	

	15 July	20 July	02	Meiosis -stages and significance		Power point presentation	
	22 July	27 July	02	Giant chromosomes—Lampbrush chromosome and Polytene chromosome		Power point presentation videos	
July-August	29 July	3 August	02	Mutation—gene and chromosomal mutations, Mutagens (radiations and chemicals)		Power point presentation videos	
August 2024	5 August 2024	10 August	02	Benign and Malignant neoplasms, Characteristics of a cancer cell		Power point presentation videos	
August 2024	12 August	17 August	02	Module III Monohybrid, Dihybrid crosses and Mendel's Laws		Power point presentation	
	19 August	24 August	02	Epistatic interactions (9:7, 12:3:1, 13:3, 15:1)		Power point presentation	
	26 August	31 August	02	Multiple Alleles (Rabbit coat colour), Multiple genes (skin colour		Power point presentation videos	

September 2024	2 September	14 September	02	Sex linked, Sex limited and Sex influenced inheritance.		Power point presentation	
	16 September	21 September	02	Symbols and rules of construction of a pedigree chart (one example each of an autosomal dominant trait, autosomal recessive trait and an X linked recessive trait)		Power point presentation	
	23 September	28 September	02	Sex determination---- Chromosomal---Drosophila (genic balance theory), Humans, Fowl, Grasshopper, Honeybee		Power point presentation	
Sept-October 2024	30 September	5 October	02	Environmental basis of sex determination in Bonelia viridis and		Power point presentation	

				Turtles. Cytoplasmic inheritance ---Kappa particles in Paramoecium			
October 2024	7 October 2024	12 October	02	The role of Mitochondria in Maternal inheritance in Humans		Power point presentation	
	14 October	22 October	01	revision		Power point presentation	

*** Assessment Rubrics**

Component	Max Marks
ISA 1	7.5
ISA 2	7.5
Practical	25
Project	----
Semester End Exam	60