

Lesson Plan for Course:...GENETICS..... Code...ZOOACOR12T.....**Credit.....04.....**

- Course coordinator:.....Arpita Mondal.....
- Course Outcome
 - ✓ CO1: To understand the gene, allele, chromosomes composition in living organism and their genetical analysis.
 - ✓ CO2: To analyse the mathematical problems of genetics and gene distance of chromosomes.
 - ✓ CO3: To learn the information about the human disease and their genetical aspects.
 - ✓ CO4: To understand the mutagens and their effect and the important element of living organism.

Course planner

Sl	Course Topic	Teacher	Class-hour	Remarks*
Jul	Unit-1: MENDELIAN GENETICS and its EXTENSION 1. Background of Mendel's Experiments.	AM	01	Online Lecture Method, PPT Presentation.
	2. Principles of Mendelian Inheritance.	AM	01	Online Lecture Method, PPT Presentation. You Tube animation. https://youtu.be/ADnlPrFJccA
Aug	Unit-1: 3. Incomplete Dominance and Codominance, Multiple alleles.	AM	01	Online Lecture Method, PPT presentation, You Tube Animation. https://youtu.be/BAodvx5wOfU
	4. Epistasis, Lethal alleles, Pleiotropy.	AM	02	Online Lecture Method, PPT presentation. You Tube animation https://youtu.be/EP8ZytVnU3Q
	5. Sex- linked, Sex-influenced and Sex-limited inheritance, Polygenic inheritance.	AM	01	Online Lecture Method, PPT presentation, A question answer section will be held on 21 st Aug on Unit1 in Meet.
	Unit-2:LINKAGE CROSSING OVER and CHROMOSOMAL MAPPING: 1. Linkage and Crossing over.	AM	01	Online Lecture Method, PPT Presentation.

	2. Molecular basis of Crossing Over.	AM	01	Online Lecture Method, PPT presentation, You Tube Animation. https://youtu.be/Y9vDb0QoD9o
	3. Measuring Recombination frequency and Linkage intensity using three factor Crosses.	AM	02	Online Lecture Method, PPT Presentation. Problem solution.
	4. Interference and Codominance.	AM	01	Online Lecture Method, PPT Presentation. Math Problem solution in video conference by meet app.
Sep	Unit-3: MUTATION 1. Types of Gene Mutation (Classification), Types of Chromosomal aberrations (Classification with one suitable example of each). Chromosomal aberration.	AM	02	Study through e-book (pdf format). PPT presentation. Lecture Method.
		AM	01	A question answer section will be held in Meet app.
	2. Gene Mutation and Human diseases (Down's, Klienfelter's, Cri du chat, Sickle cell, Haemophilia, Thallassimia, Albinism – only genetical aspects here, details of physiological consequences not required).	AM	02	Lecture Method. PPT presentation. You Tube Animation. https://youtu.be/LOX_59RSF68
		AM	01	A question answer section will be held in meet app on Human disease.
	3. Sex chromosomes and Sex-linked inheritance.	AM	01	Lecture method. PPT presentation.
	4. Non- disjunction and Variation in chromosome number; Molecular basis of mutations in relation to UV light and chemical mutagens.	AM	02	Lecture Method. PPT presentation You Tube Animation. https://youtu.be/EA0qxhR2oOk
	EXAM ON UNIT-3	AM	01	. An Exam was held in 29 th Sep on Unit2 in Google Classroom.

Oct	Unit- 4: SEX DETERMINATION 1. Mechanisms of sex determination and Drosophila with reference to alternative splicing.	AM	01	Lecture Method. PPT presentation. You Tube Animation. https://youtu.be/uBzz9s0_ixc
	2. Sex determination in Mammals	AM	01	Lecture Method. PPT presentation. You Tube Animation. https://youtu.be/uBzz9s0_ixc
	3. Dosage compensation in Drosophila and Human. EXAM ON UNIT-4	AM AM	01 01	Lecture Method. PPT Presentation. Study through e-book. An Exam was held in 10 th Oct in Google Classroom on Unit-4.
	Unit-5: EXTRA-CHROMOSOMAL INHERITANCE 1. Criteria for extra chromosomal inheritance.	AM	01	Lecture Method. PPT Presentation.
	2. Antibiotic resistance in Chlamydomonas , Kappa particle in Paramecium Shell spiraling in snail.	AM	02	Study through e-book.Online Lecture Method. PPT presentation.
ASSESSMENT: Mid Semester Exam				
	OCT 22 nd to 17 th Nov Puja Vacation			
Nov	Unit-6: Recombination in Bacteria and Viruses 1. Conjugation, Transformation, Transduction.	AM	03	Lecture Method. PPT presentation. You Tube Animation. https://youtu.be/iJGY1boNOdg
	EXAM ON RECOMBINATION	AM	01	An Exam was held in GC on 28 th Nov.

Dec	2. Complementation test in Bacteriophage		02	Lecture Method. PPT presentation. You Tube Animation. https://youtu.be/_aVUuMi3i_I
				A question answer section will be held on UNIT-6
	Unit-7: TRANSPOSABLE GENETIC ELEMENT		02	Lecture Method. PPT presentation. Study through e-book.
	1. Transposons in Bacteria.			
	2. Ac-Ds elements in Maize and P elements in Drosophila.		02	Lecture Method. PPT presentation. A question answer section will be held in MEET app.
	3. LINE, SINE, ALU elements in humans.		01	Lecture Method. PPT presentation. You Tube animation. https://youtu.be/PErzQijx0ds
	EXAM ON UNIT-7		01	An Exam was held in GC on 19 th Dec on Unit 7
	Assessment: End-term Test		Total: 40 Hrs	

Resources :

- Books: iGenetics (A Molecular Approach Third Edition) Peter J. Russel

GENETICS (Principles and Analysis Fourth Edition).

Principles of GENETICS SIXTH EDITION (SNUSTAD . SIMMONS).

- Other resources : Internet sources such as Wikipedia. Some links like ocw.mit.edu

*Remarks will specify

- The nature of the class-topic (viz. Theoretical, Practical, and Tutorial).
- Methodology of teaching (whether using ICT, engaging students in group discussion, quiz etc. etc.)
- Different modes of assessment. (Please check UGC evaluation reforms).