

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI
COURSE PLAN June - November 2024

Department : Zoology
Name/s of the Faculty : Ms Janani N
Course Title : Animal Physiology
Course Code : 23ZL/MC/AP34
Shift : I

COURSE OUTCOMES (COs)

COs	Description	CL
CO1	Students will be able to recall the basic concepts, adaptations, structural, functional and pathophysiological aspects of organs and organ systems, diagnosis and treatment of diseases and disorders, physiology of ageing & sports	K1
CO2	Students will be able to describe the adaptations, structural, functional and pathophysiological aspects of organs and organ systems, diagnosis and treatment of diseases and disorders, physiology of ageing & sports	K2
CO3	Students will be able to apply the knowledge obtained to discuss the adaptations, structural, functional and pathophysiological aspects of organs and organ systems, diagnosis and treatment of diseases and disorders, physiology of ageing & sports	K3
CO4	Students will be able to analyse the physiological concepts, adaptations, structural, functional and pathophysiological aspects of organs and organ systems, diagnosis and treatment of diseases and disorders, physiology of ageing & sports	K4
CO5	Students will be able to evaluate the basic concepts, adaptations, structural, functional and pathophysiological aspects of organs and organ systems, diagnosis and treatment of diseases and disorders and physiology of ageing & sports	K5

Week	Unit No.	Content	Cognitive Level	Teaching Hours	COs	Teaching Learning Methodology	Assessment Methods
Jun 19 – 26, 2024 (Day Order 1 - 6)	1.1	Syllabus and Introduction – Types of Nutrition –Feeding Mechanisms – Types of Digestion	K1 – K5	3	CO1 - CO5	Lecture Audiovisuals relating to feeding mechanisms	Discussion on audiovisuals Crossword puzzle, Picture games
	1.2	Respiratory organs and mechanism of respiration (trachea, gills, skin and lungs)	K1 – K5	2	CO1 - CO5	Top-down teaching Powerpoint presentations	Group discussion
Jun 27 – July 4, 2024 (Day Order 1 - 6)	1.2	Respiratory Pigments	K1 – K5	1	CO1 - CO5	Lecture	Discussion on “How would you prepare a mountaineer to scale Everest”
	1.3	Adaptations to diving and high altitudes	K1 – K5	4	CO1 - CO5	PowerPoint Presentation Audiovisual presentation/ movie clips of people showing physiological distress while diving and at high altitudes	Design infographics on adaptations to diving and high altitudes Quiz Distribution of topics for video assignment

July 5 – 12, 2024 (Day Order 1 - 6)	1.4	Physiological effect of smoking and carbon monoxide in humans Oxygen Therapy: indications, instruments used and precautions - Artificial Respiration: indications and types (manual and instrumental)	K1 – K5	2	CO1 - CO5	Lecture Audiovisual presentation PowerPoint presentations	Discussion Quiz
	2.1	Types of Circulatory Systems (open and closed)	K1 – K5	3	CO1 - CO5		
July 15 – 23, 2024 (Day Order 1 - 6)	2.2	Regulation of heart beat and blood pressure in humans	K1 – K5	3	CO1 - CO5	Audiovisual presentation Lecture	Short answer test
	2.3	Role of drugs / chemicals (Atropine, Pilocarpine and Digitaline) on heart rate in humans – Angiogram, Angioplasty and Echo	K1 – K5	2	CO1 - CO5	Power Point presentation Simulationsoftware	
July 24 – 31, 2024 (Day Order 1 - 6)	2.4	Thermoregulatory mechanisms in insects and vertebrates	K1 – K5	4	CO1 - CO5	Lecture	Discussion
	3.1	Osmoregulatory mechanisms in invertebrates	K1 – K5	1	CO1 - CO5	Power Point presentation Observing thermoregulatory mechanisms of fauna on campus	

Aug 1 – 5, 2024 (Day Order 1 - 3)	3.1	Osmoregulatory mechanisms in vertebrates	K1 – K5	1	CO1 - CO5	Lecture	Discussion
	3.2	Nitrogenous substances excreted by animals – adaptations based on habitat Revision for CAI	K1 – K5	1	CO1 - CO5	Power Point presentation Audiovisual presentations	
Aug 6 – 10, 2024	C.A. Test – I (Max. Marks: 50)						
Aug 12 – 14, 2024 (Day Order 4-6)	3.2	Classification of animals based on nitrogenous products excreted - Ornithine Cycle	K1 – K5	1	CO1 - CO5	Lecture	Discussion
	3.3	Types of synapses (electric and chemical) – neuromuscular synapses	K1 – K5	2	CO1 - CO5	Audio visual presentation Power Point Presentation	
Aug 16 – 23, 2024 (Day Order 1-6)	3.3	Neurotransmitters – Neurotransmission and external agents (Drugs, toxins and pollutants)	K1 – K5	3	CO1 - CO5	Lecture	Quiz
	3.4	Neural control of skeletal muscles: mechanism, Pathophysiology of hemiplegia, paraplegia and muscular dystrophy	K1 – K5	2	CO1 - CO5	Audio visual presentation Power Point Presentation	

Aug 27 – Sep 3, 2024 (Day Order 1-6)	3.4	Vertebrate Autonomic nervous system	K1 – K5	3	CO1 - CO5	Lecture	Quiz
	4.1	Types of sensory receptors - nociception, electroreception and magnetoreception	K1 – K5	2	CO1 - CO5	Audio visual presentation Power Point Presentation	
Sep 4 – 11, 2024 (Day Order 1-6)	4.2	Non vertebrate endocrinology (molluscs, annelids and arthropods) Effect of endocrine disruptor chemicals in humans	K1 – K5	3	CO1 - CO5	Lecture Audio visual presentation	Component 1 Video Assignment on aspects of organ physiology and adaptations Submission Max. Marks: 20
	4.3	Chromophores: mechanism of colour change in cold blooded vertebrates	K1 – K5	2	CO1 - CO5	Power Point Presentation	
Sep 12 - 20, 2024 (Day Order 1-6)	4.4	Bioluminescence: chemistry, mechanism and significance	K1 – K5	5	CO1 - CO5	Lecture Audio visual presentation Power Point Presentation	Discussion on how bioluminescence can be used to solve problems in the real world. E.g. In testing for pollutants

Sep 23 - 26, 2024 (Day Order 1-4)	5.1	Hormones in pregnancy and complications in pregnancy (ectopic pregnancy, breach, placenta previa) Revision for CAII	K1 – K5	3	CO1 - CO5	Audiovisual presentations Power Point Presentation	Short test
Sep 27 – Oct 3, 2024	C.A. Test – II (Max. Marks: 50)						
Oct 4 – 5, 2024 (Day 5 & 6)	5.1	Hormones in lactation, composition and significance of breast milk and factors influencing lactation	K1 – K5	2	CO1 - CO5	Power Point Presentation	Discussion Component 2 Quiz (Units 4.4, 5.1, 5.2) Max. Marks: 30
Oct 7 - 15, 2024 (Day Order 1 to 6)	5.2	Pathophysiology of human disorders/diseases: Anorexia nervosa, Chronic Obstructive Pulmonary Disorder, Alzheimer's, Poly Cystic Ovarian Disorder and Osteoporosis	K1 – K5	5	CO1 - CO5	Audiovisual presentations TEDx talk on Anorexia Research paper on PCOD	Discussion based on TEDx talk Analysis of research paper and interpretation of findings

<p>Oct 16 - 22, 2024 (Day Order 1 to 6)</p>	<p>5.3</p>	<p>Sports Physiology: muscles in exercise, respiration in exercise, cardiovascular system in exercise and body fluids & salts in exercise – drugs and athletes</p>	<p>K1 – K5</p>	<p>3</p>	<p>CO1 - CO5</p>	<p>Audiovisual and Power Point presentations Journaling on daily exercise regimen – measuring pulse and observation of impact on physiology</p>	<p>Discussion on exercise and sports regimens and their impact on the body</p>
	<p>5.4</p>	<p>Physiology of ageing: changes in major systems, causes and theories</p>	<p>K1 – K5</p>	<p>2</p>	<p>CO1 - CO5</p>	<p>Lectures PowerPoint presentation Observing the elderly for age-related physiological changes and keeping a reflective journal on observations Carry out simple exercises for testing muscle strength and flexibility with a group of students. Correlate the findings with the ability of most of</p>	<p>Discussion on observations in the journal.</p>

						the elderly who lose muscle strength and flexibility as they age	
Oct 23 - 24, 2024 (Day Order 1 to 2)	REVISION						

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI
COURSE PLAN June - November 2024

Department : Zoology
Name/s of the Faculty : Dr. S. A. Vidhya
Course Title : Evolution
Course Code : 23ZL/MC/EV33
Shift : I

COURSE OUTCOMES (COs)

COs	Description	CL
CO1	recall the basic and modern concepts, components, theories, evidence, mechanisms, processes, patterns, strategies and molecular aspects of evolution	K1
CO2	explain evolutionary concepts, theories, evidence, the history of life on earth, evolutionary processes, patterns, strategies and molecular aspects of evolution	K2
CO3	apply the acquired knowledge of evolutionary concepts, theories and evidence to discuss evolutionary components, mechanisms, processes, patterns, strategies and recent trends in evolution	K3
CO4	analyse evolutionary principles, theories, evidence, mechanisms, processes, patterns, strategies, phylogenetic trees and recent trends in evolution	K4
CO5	Evaluate evolutionary theories, evidence, processes, mechanisms, patterns, strategies, phylogenetic trees and recent trends in evolution	K5

Week	Unit No.	Content	Cognitive Level	Teaching Hours	COs	Teaching Learning Methodology	Assessment Methods
Jun 19 – 26, 2024 (Day Order 1 - 6)	1.1	Overview of syllabus Introduction Origin of Life – Theories: Special Creation, Catastrophism, Panspermia,	K1 – K5	4	1-5	Lecture with interaction Group Discussion on religious views on Creation/ Evolution	Term paper (topic distribution)

		Abiogenesis, Biogenesis, Modern Hypothesis					
Jun 27 – July 4, 2024 (Day Order 1 - 6)	1.2	Evidence in support of evolution from the fields of comparative morphology and anatomy, physiology, biochemistry and embryology	K1 – K5	4	1-5	Audio-visual presentation	Pop Quiz
July 5 – 12, 2024 (Day Order 1 - 6)	1.3 4.1	Theories of evolution – Lamarckism and Neolamarckism, Darwinism, Neo-Darwinism or Modern Synthetic Theory of Evolution Adaptive radiation in Birds	K1 – K5	4	1-5	Documentary Peppered Moth Simulation Game (https://askabiologist.asu.edu/peppered-moths-game/play.html) Discussion	Flowchart test Diagram test
July 15 – 23, 2024 (Day Order 1 - 6)	1.3 II	Theories of evolution – Mutation theory of de Vries Geological Time Scale	K1 – K5	4	1-5	Lecture with interaction Audio-visual presentation	Propose a theory of evolution activity Component 1 July 19 – Submission of term paper (https://docs.google.com/spreadsheets/d/17yu2YGLAH4Xj)

							https://www.onlea.org/geo-logic-timescale/#/time-scale) Max. Marks: 20
July 24 – 31, 2024 (Day Order 1 - 6)	2.1 2.2	Geological Time Scale (continued) Palaeontology: Fossilisation, dating of fossils	K1 – K5	4	1-5	Simulation (https://www.onlea.org/geo-logic-timescale/#/time-scale) Flipped Classroom	Group Presentation: Jurassic Park dinosaurs – fact versus fiction Group Presentation topic distribution
Aug 1 – 5, 2024 (Day Order 1 - 3)	2.2	Indian fossils – living fossils Revision	K1 – K5	2	1-5	Observation of fossils and living fossils	Hot Seat (game-based quiz for review of key terms)
Aug 6 – 10, 2024	C.A. Test – I (Max. Marks: 50)						
Aug 12 – 14, 2024 (Day Order 4-6)	2.3	Extinction: six major extinction events and role of extinction in evolution	K1 – K5	2	1-5	Documentary Audio-visual presentation	Report on documentary
Aug 16 – 23, 2024 (Day Order 1-6)	3.1	The genetic basis of evolution: Variation, Mutation, Genetic Drift, Founder Effect	K1 – K5	4	1-5	Lecture with interaction	Quiz

	4.1 4.2	and Migration Convergent and divergent evolution – Adaptive radiation in mammals Mimicry and Colouration (types, examples and significance) Coevolution (types, examples and significance)				Audio-visual presentation Documentary: Lemurs of Madagascar (https://www.youtube.com/watch?v=uAvfYtZ4aRU) Hidden object game Nature walk on campus	Photo montage Compile a list of local examples of mimicry and colouration/ coevolution
Aug 27 – Sep 3, 2024 (Day Order 1-6)	3.2 4.3	Types of Natural selection: stabilising selection, directional selection and disruptive selection (examples and case studies) Micro, macro and megaevolution (causes, examples and significance)	K1 – K5	4	1-5	Lecture with interaction Audio-visual presentation	Case study analysis Compile examples
Sep 4 – 11, 2024 (Day Order 1-6)	3.3	Species concept: Speciation (Allopatric	K1 – K5	4	1-5	Lecture with interaction	Group discussion Component 2

	4.4	and Sympatric)- Subspecies - Sibling Species - Isolation in Speciation Distribution of Animals: Types, Zoogeography Barriers and Methods of Dispersal of Animals in the marine, freshwater and terrestrial environments				Audio-visual presentation	Group Presentation on dinosaurs Max. Marks:15 ‘Fill the map with animals’ activity
Sep 12 - 20, 2024 (Day Order 1-6)	5.1	Evolution of Horse: stages and significance	K1 – K5	4	1-5	Documentary	Examination of limb and teeth of horse
	5.2	Human Evolution: Stages (<i>Ardipithecus</i> group, <i>Australopithecus</i> group, <i>Paranthropus</i> group and <i>Homo</i> group)				Lecture with interaction	Quiz
Sep 23 - 26, 2024 (Day Order 1-4)	5.2	Human Evolution: Stages (<i>Ardipithecus</i> group, <i>Australopithecus</i> group, <i>Paranthropus</i> group and <i>Homo</i> group) -continued Human Evolution: Biological History	K1 – K5	3	1-5	Audio-visual presentation Discussion Visit to a virtual museum:	Pop Quiz

		Revision				https://humanorigins.si.edu/evidence/human-evolution-interactive-timeline https://humanorigins.si.edu/exhibit/exhibit-floorplan/exhibit-floorplan-interactive)	
Sep 27 – Oct 3, 2024	C.A. Test – II (Max. Marks: 50)						
Oct 4 – 5, 2024 (Day 5 & 6)	5.2	Human Evolution: Cultural History	K1 – K5	1	1-5	Flipped classroom	Group Discussion: Culture – Then and Now
Oct 7 - 15, 2024 (Day Order 1 to 6)	5.3	Molecular Evolution: Molecular Clocks Phylogenetic trees - Systematics: Phenetics and Cladistics	K1 – K5	4	1-5	Audio-visual presentation Phylogenetic Tree Simulation	Component 3 Quiz (Units 4.3, 5.1, 5.2) Max. Marks: 15 Create a phylogenetic tree using phyloT (phylot.biobyte.de)
Oct 16 - 22, 2024 (Day Order 1 to 6)	5.4	Modern Evolutionary Concepts: Evolutionary Medicine - Evolution and Conservation	K1 – K5	4	1-5	Lecture with interaction TED talk: An Evolutionary	Group Discussion

						perspective on human health and disease (https://www.youtube.com/watch?v=g3zrprEu0Q)	
Oct 23 - 24, 2024 (Day Order 1 to 2)	REVISION						

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI COURSE PLAN June - November 2024		
Department	: Zoology	
Name/s of the Faculty	: Dr. Kalpana Jayaraman, Dr. S.A.Vidhya and Ms. Janani N	
Course Title	: Animal Physiology and Evolution Practicals	
Course Code	: 23ZL/MC/P332	
Shift	: I	
COURSE OUTCOMES (COs)		
COs	Description	CL
CO1	Students will be able to submit a record of the practical work carried out in the laboratory and a report on the different types of evolutionary strategies observed on campus	K1
CO2	Students will be able to describe modes of fossilisation, living fossils, examples on coevolution, mimicry and other evolutionary strategies, stages in human evolution, working and significance of the flame photometer, various organ systems in humans (not for evaluation)	K2

CO3	Students will be able to apply the knowledge gained to calculate salt loss and salt gain by a fish, amylase activity in relation to temperature, Q_{10} and amylase activity in relation to pH						K3
CO4	Students will be able to measure blood pressure and pulse and interpret the results, answer questions relating to physiological experiments on digestive and cardiovascular systems (simulatory software PhysioEx 10.0) and interpret the given phylogenetic tree						K4
CO5	Students will be able to evaluate oxygen consumed by the given aquatic animal with reference to body weight and the type of nitrogenous waste in different samples						K5
Week	Unit No.	Content	Cognitive Level	Teaching Hours	COs	Teaching Learning Methodology	Assessment Methods
Jun 19 – 26, 2024 (Day Order 1 - 6)	4	Syllabus and instructions Study of various organ systems in a fiberglass human model	K2	3	CO2	Observation of fiberglass model of human	Quiz on human anatomy
	4	Observation and identification of the following: Different modes of fossilisation Living fossils	K2		CO2	Observation of fossil specimens Discussion on different modes of fossilization and living fossils	Evaluation of observation notebook
	5	Observation Notebook	K1		CO1		
Jun 27 – July 4, 2024 (Day Order 1 - 6)	1	Oxygen consumption in an aquatic animal with reference to body weight.	K5	3	CO5	Experiment, observations, results, interpretation	Evaluation of observation notebook

	5	Observation Notebook	K1		CO1		
July 5 – 12, 2024 (Day Order 1 - 6)	1	Oxygen consumption in an aquatic animal with reference to body weight. (repeated)	K5	3	CO5	Experiment, observations, results, interpretation	Evaluation of observation notebook
	4	Observation and identification of the following: Coevolution (Plant-pollinator and Predator-prey)	K2		CO2	Observation of photographic plates on evolutionary strategies	
	5	Observation Notebook	K1		CO1		
July 15 – 23, 2024 (Day Order 1 - 6)	2	Study of frog cardiovascular physiology using Physio Ex 10.0. Assessing digestion of proteins, carbohydrates and fats using Physio Ex 10.0	K4	3	CO4	PhysioEx 10.0 software	Quiz
	5	Observation Notebook	K1		CO1		Evaluation of observation notebook

July 24 – 31, 2024 (Day Order 1 - 6)	3	Determination and analysis of salt loss and saltgain in fish	K3	3	CO3	Experiment, observations, results, interpretation	Evaluation of observation notebook
	5	Observation Notebook	K1		CO1		
Aug 1 – 5, 2024 (Day Order 1 - 3)		No practicals					
Aug 6 – 10, 2024	C.A. Test - I						
Aug 12 – 14, 2024 (Day Order 4-6)		Experiment, observations, results, interpretation Quiz/Inference based on given data Calculations/Analysing and interpreting of given data Identification and commenting on evolutionary strategies/specimens	K1 – K5	3	CO1 – CO5		CA I (Max. Marks: 50 K1 = 5 marks K2 = 12 marks K3 = 7 marks K4 = 6 marks K5 = 20 marks)
Aug 16 – 23, 2024 (Day Order 1-6)	1	Detection of nitrogenous waste products, qualitative estimation of	K5	3	CO5	Experiment, observations, results, interpretation	Observations and inference

	5	Ammonia, (fish) Uric acid (bird excreta) and Urea (mammalian kidney) Observation Notebook	K1		CO1		Evaluation of observation notebook
Aug 27 – Sep 3, 2024 (Day Order 1-6)	3	Determination of amylase activity in relation to temperature and calculation of Q_{10} (temperature coefficient) Determination of amylase activity in relation to pH	K3	3	CO3	Experiment, observations, results, interpretation Simulation, Physio Ex 10.0	Calculation of temperature coefficient Correlating temperature and pH changes with amylase activity
	5	Observation Notebook	K1		CO1		Evaluation of observation notebook
Sep 4 – 11, 2024 (Day Order 1-6)	2	Measurement of BP and Pulse and interpretation	K4	3	CO4	Experiment, observations, results, interpretation Observation of photographic plates on evolutionary strategies	Observation, results and inference Evaluation of observation notebook
	5	Observation Notebook	K1		CO1		
	4	Observation and documentation of the following: Mimicry (Batesian and Mullerian) and Colouration (Protective	K2		CO2		

	5	and Aggressive) Observation Notebook	K1		CO1		
Sep 12 - 20, 2024 (Day Order 1-6)	4	Observation and identification of evolutionary strategies (mimicry, colouration and coevolution) on SMC campus	K2	3	CO2	Studying the evolutionary strategies through observation and documentation on SMC campus	Quiz
	5	Report					Compilation of report
		Stages in human evolution (<i>Sahelanthropus tchadensis</i> , <i>Australopithecus afarensis</i> , <i>Homo erectus</i> , <i>Homo neanderthalensis</i> and <i>Homo sapiens</i>)				Observation and study of slides on human evolution	
	2	Analyse and interpret the given phylogenetic tree	K4		CO4	Case Studies	Evaluation of observation notebook
	5	Observation Notebook	K1		CO1		
Sep 23 - 26, 2024		No practicals					

(Day Order 1-4)							
Sep 27 – Oct 3, 2024	C.A. Test - II						
Oct 4 – 5, 2024 (Day 5 & 6)	3	Detection of nitrogenous waste products, qualitative estimation of Ammonia, (fish) Uric acid (bird excreta) and Urea (mammalian kidney) (repeated)	K5	3	CO5	Experiment, observations, results, interpretation	Evaluation of observation notebook
	5	Observation Notebook	K1		CO1		
Oct 7 - 15, 2024 (Day Order 1 to 6)		Experiment, observations, results, interpretation Quiz/Inferring based on given data Calculations/Analysing and interpreting of given data/phylogenetic tree Identification and commenting on evolutionary strategies/specimens	K1 – K5	3	CO1 – CO5		CA I (Max. Marks: 50) K1 = 5 marks K2 = 12 marks K3 = 7 marks K4 = 6 marks K5 = 20 marks) (model practical examination) Evaluation of Record Notebook included

Oct 16 - 22, 2024 (Day Order 1 to 6)	4	Estimation of Na and K content in food samples by Flame Photometry (demo)	K2	3	CO2	Demonstration of experiment, observation, results and interpretation	Submission of records and report on evolutionary strategies observed on campus
Oct 23 - 24, 2024 (Day Order 1 to 2)	REVISION						

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI COURSE PLAN June - November 2024		
Department	: Zoology	
Name/s of the Faculty	: Ms. Albina Jerome D	
Course Title	: Genes, Diseases and Society	
Course Code	: 23ZL/GE/GD22	
Shift	: I	
COURSE OUTCOMES (COs)		
COs	Description	CL
CO1	recall the role of gametes, structure of DNA, Mendelian inheritance, pedigree analysis, multiple allelic and polygenic inheritance, lethal genes, patterns of genetic inheritance, disorders with genetic predisposition,	K1

	metabolic disorders, impact of consanguineous marriage, significance of genetic counselling, recent advances in the field of Genetics and their ethical and social implications							
CO2	explain the role of gametes, structure of DNA, Mendelian inheritance, multiple allelic and polygenic inheritance, types and significance of lethal genes, patterns of genetic inheritance, disorders with genetic predisposition, metabolic disorders, impact of consanguineous marriage, significance of genetic counselling, recent advances in the field of Genetics and their ethical and social implications							K2
CO3	apply the knowledge gained to discuss the role of gametes, structure of DNA, concepts of Mendelian genetics, multiple allelic and polygenic inheritance, types and significance of lethal genes, patterns of genetic inheritance, disorders with genetic predisposition, metabolic disorders, impact of consanguineous marriage, significance of genetic counselling, recent advances in the field of Genetics and their ethical and social implications							K3
Week	Unit No.	Content	Cognitive Level	Teaching Hours	COs	Teaching Learning Methodology	Assessment Methods	
Jun 19 – 26, 2024 (Day Order 1 - 6)	1.1	Introduction - Human Gametes and their Role in Heredity – DNA the Genetic Material - Mendelian Inheritance: Monohybrid and Dihybrid Cross Experiments	K1 -K3	2	CO 1 - CO 3	Lecture PowerPoint Presentation	Quiz	
Jun 27 – July 4, 2024 (Day Order 1 - 6)	1.1	Identification of Mendelian Traits in Humans - Pedigree Analysis and its Applications	K1 -K3	2	CO 1 - CO 3	PowerPoint Presentation Interpretation of Pedigree charts	Activity based on Mendelian traits Problems based on Mendelian traits	
July 5 – 12, 2024	1.2	Lethal Genes: Definition, Types and Inheritance	K1 -K3	2	CO 1 - CO 3	Presentation	Discussion	

(Day Order 1 - 6)							
July 15 – 23, 2024 (Day Order 1 - 6)	1.3	Multiple Allelic Inheritance: ABO and Rh Blood Types in Humans – ABO Blood Grouping and Rh Typing, Practical – Case Study/Problem Solving - Polygenic Inheritance (Skin Colour in Humans)	K1 -K3	2	CO 1 - CO 3	Lecture Practical Demonstration Case study Analysis	Component 1 - Creating a pedigree chart for the ABO blood groups in their family Max. Marks: 15
July 24 – 31, 2024 (Day Order 1 - 6)	2.1	Autosomal Recessive Inheritance (Albinism) - Autosomal Dominant Inheritance (Familial Hypercholesterolemia)	K1 -K3	2	CO 1 - CO 3	Lecture	Problems based on Patterns of Inheritance
Aug 1 – 5, 2024 (Day Order 1 - 3)	2.1	X-Linked Dominant Inheritance (Hypophosphatemia) – X-Linked Recessive Inheritance (Haemophilia)	K1 -K3	1	CO 1 - CO 3	Presentation	Problems based on Patterns of Inheritance
Aug 6 – 10, 2024	C.A. Test - I						
Aug 12 – 14, 2024 (Day Order 4-6)	2.1	Y- Linked Inheritance (Hypertrichosis) – Mitochondrial Inheritance (Kearns Sayre Syndrome)	K1 -K3	1	CO 1 - CO 3	Lecture	Problems based on Patterns of Inheritance

Aug 16 – 23, 2024 (Day Order 1-6)	2.2	Disorders with Genetic Predisposition: Diabetes, Breast Cancer, and Alzheimer's Disease	K1 -K3	2	CO 1 - CO 3	PowerPoint Presentation	Discussion
Aug 27 – Sep 3, 2024 (Day Order 1-6)	2.2	Chromosomal Disorders: Down's Syndrome, Turner's Syndrome, Klinefelter's Syndrome -	K1 -K3	2	CO 1 - CO 3	Lecture	Quiz
Sep 4 – 11, 2024 (Day Order 1-6)	2.2	Metabolic Disorders: Phenylketonuria, Huntington Disease and Lactose Intolerance	K1 -K3	2	CO 1 - CO 3	PowerPoint Presentation	Component 2 - Poster submission (Unit 2) Max Marks: 10
Sep 12 - 20, 2024 (Day Order 1-6)	2.3	Consanguineous Marriage and its Impact in the Society- Genetic Counselling	K1 -K3	2	CO 1 - CO 3	Lecture Discussion	Genetic Counselling Role Play
Sep 23 - 26, 2024 (Day Order 1-4)	3.1	Applications of Genetic Engineering: Genetically Modified Organisms, Gene Therapy and Gene Cloning	K1 -K3	2	CO 1 - CO 3	Audio Visual Presentation	Questioning based on the presentation
Sep 27 – Oct 3, 2024	C.A. Test - II						
Oct 4 – 5, 2024 (Day 5 & 6)	No Class						
Oct 7 - 15, 2024	3.2	Predictive Genetic Testing: DNA	K1 -K3	2	CO 1 - CO 3	Simulation	Case study Analysis

(Day Order 1 to 6)		Fingerprinting (Case Study)				Audio Visual Presentation	
Oct 16 - 22, 2024 (Day Order 1 to 6)	3.3	Ethical, Legal and Societal Issues (ELSI) related to techniques in Genetics	K1 -K3	2	CO 1 - CO 3	Lecture	Debate CA Test (Units 1, 2, 3.1) Max. Marks: 25
Oct 23 - 24, 2024 (Day Order 1 to 2)	REVISION						