STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule: November 2024 - April 2025

Department **: Zoology**

Name of the Faculty **: Dr. S. A. Vidhya**

Course Title **: Animal Behaviour**

Course Code **: 19ZL/MC/AB64**

Shift **: I**

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 18 – 25, 2024 (Day Order 1-6)	Syllabus **Unit 1** Introduction Behaviour – Causes and Significance Ethology –History Methods of studying behaviour: Studies in laboratories and in the wild: Identification and location of individuals, observation, description	Storytelling Discussion	Animal Watching – Desmond Morris Animal Behaviour – Reena Mathur Biology of Animal Behaviour – Grier Understanding Biology – Raven and Johnson	Pre- and post-test
Nov 26- Dec 3, 2024 (Day Order 1 to 6)	**Unit 1** Methods of studying behaviour: recording and cataloguing, constructing Ethogram, interpreting, and presenting data	Workshop Campus behaviour bingo	Animal Behaviour – Reena Mathur Animal Behaviour – An Evolutionary Approach- Alcock Animal Behaviour –Psychology – ethology and evolution – McFarland	Construct an ethogram (for an animal on campus)- activity

Dec 4-11, 2024 (Day Order 1 to 6)	**Unit 1** Concepts and Terminology: Motivation – Fixed Action Pattern (FAP) – Sign Stimulus Innate Releasing Mechanism (IRM) – Action Specific Energy (ASE)	Lecture Role play (by student volunteers)	Animal Behaviour – Reena Mathur Animal Behaviour – An Evolutionary Approach- Alcock Animal Behaviour –Psychology – ethology ad evolution – McFarland	Post-activity discussion
Dec 12-19, 2024 (Day Order 1 to 6)	**Unit 1** Concept of Behavioural Genetics – Evolution of Behaviour **Unit 2** Basic and Maintenance Behaviour: Maintenance and Related Behaviour, Foraging and Caching	Lecture with interaction Audiovisual presentation	Animal Behaviour – Reena Mathur Animal Behaviour – An Evolutionary Approach- Alcock Animal Behaviour –Psychology – ethology ad evolution – McFarland	Problem-solving activity
Dec 20, 2024 (Day Order 1)	No class			
Jan 3 – 7, 2025 (Day Order 3 to 6)	**Unit 2** Shelter Seeking, Nests and other constructions - Finding a Place to Live: Habitat Selection and Territory	Walk around campus – observation of birds' nests Discussion	Animal Behaviour – Reena Mathur Biology of Animal Behaviour – Grier A Textbook of Animal Behaviour – Harjinder Singh	Guess who built the nest – pictorial quiz
Jan 8 – 17, 2025 (Day Order 1 to 6)	**Unit 2** Homing-Chronobiology, Rhythms – Sleep Play: General Attributes of Play, Examples/ Descriptions of Play Behaviour, Theories	Lecture Audiovisual presentation Documentary	Animal Behaviour – Reena Mathur Biology of Animal Behaviour – Grier A Textbook of Animal Behaviour – Harjinder Singh	Construct your body clock – activity Propose a theory - activity

Jan 18 - 23, 2025	**C.A. Test – I**			
Jan 24 - 30, 2025 (Day Order 1 to 6)	**Unit 3** Animal Communication – Modes and Mechanisms: Chemical, Auditory, Visual, Tactile and Electrical	Lecture with interaction Documentary	Biology of Animal Behaviour – Grier A Textbook of Animal Behaviour – Harjinder Singh	Find the modes of communication used in the documentary - activity
Feb 3-8, 2025 (Day Order 1 to 6)	**Unit 3** Animal Learning – Different forms of Animal Learning Behaviour and Reproduction: Breeding Patterns, Courtship	Lecture with interaction	Biology of Animal Behaviour – Grier A Textbook of Animal Behaviour – Harjinder Singh	Written test
Feb 10– 18, 2025 (Day Order 1 to 4)	**Unit 3** Interspecific Behaviour: Aggregations, Commensalism, Mutualism, Parasitism and Predation	Lecture with interaction Audiovisual presentation	Biology of Animal Behaviour – Grier A Textbook of Animal Behaviour – Harjinder Singh	Photo documentation of interspecific interactions on campus – group activity
Feb 19- 26, 2025 (Day Order 1-6)	**Unit 4** Psychoactive Drugs and Human Behaviour, Pre-Menstrual Syndrome and Peri-Menopausal Behaviour	Research-based Pedagogical Tool (RBPT)	Introduction to Biopsychology – John P.J Pinel Biology of Human Reproduction – Ramon Pinon	Post-activity discussion

Feb 27- Mar 6, 2025 (Day Order 1 to 6)	**Unit 4** Abnormal Behaviour in Humans – Neurotic Disorder (Anxiety Disorder): Phobic and Obsessive-Compulsive Disorder, Psychotic Disorder:Schizophrenia, & Depression	Audiovisual Presentation Case studies	Introduction to Psychology – Kalat. J. W	Questionnaire
Mar 7 – 11, 2025 (Day Order 1 to 3)	**Unit 4** Psychotic Disorder: Suicidal tendencies and Bipolar Disorder	Audiovisual Presentation Case studies	Introduction to Psychology – Kalat. J. W	Case study analysis
Mar 12 –17, 2025	**C.A. Test – II**			
Mar 18 – 20, 2025 (Day 4 to 6)	**Unit 5** Science, Ethics and Law in Human Welfare - Welfare Assessment in Animals – Five Freedoms – Concept of Needs	Audiovisual Presentation	WSPA – World Society for the Protection of Animals	Case study - Welfare assessment **Component 1 Submission of Animal Behaviour Projects (25 marks)**
Mar 21 - 28, 2025 (Day Order 1 to 6)	**Unit 5** Recognition of Normal Behaviour in Animals Abnormal Behaviour in Pet, Domestic and Zoo Animals -Possible causes for Abnormal Behaviour – Prevention of abnormal behaviour – Behavioural Enrichment	Lecture with interaction	WSPA – World Society for the Protection of Animals	**Component 2 Quiz (25 marks)**
Mar 29- April 3, 2025 (Day Order 1 to 3)	**Unit 5** Animal Protection Laws	Flipped Classroom	The Laws Protecting Animals and Ecosystems – Paul Rees	Group Discussion
	REVISION			

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule: November 2024 – April 2025

Department : Zoology

Name of the Faculty : Dr RITA JAYARAJ (5 hrs)

Course Title : Ecology

Course Code : 19ZL/MC/EC64

Shift : I

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 18 – 25, 2024 (Day Order 1-6)	**Unit 1** Introduction to Ecology Soil Formation Texture Profile – Classifications - Properties	Lecture PPT	Animal Ecology and distribution of animals. - Veer Bala Rastogi and Jayaraj	Discussion
Nov 26- Dec 3, 2024 (Day Order 1 to 6)	**Unit 1** Soil Formation - Texture – Profile – Classifications – Properties Abiotic Factors: Temperature Thermal Stratification Range of Temperature Tolerance	Lecture PPT	Animal Ecology and distribution of animals. - Veer Bala Rastogi and Jayaraj	Concept Mapping
Dec 4-11, 2024 (Day Order 1 to 6)	**Unit 1** Light – Composition. Light on Land and Water- Biological Effects of Light on Aquatic and Terrestrial Organisms- Role of pH	Lecture PPT Group Discussion	Ecology and Environment - P.D. Sharma	Infographic Inquiry-based question – Why do some animals come out only in the night
Dec 12-19, 2024 (Day Order 1 to 6)	**Unit 1** Limiting factors: Liebig's law of minimum – Shelford's law of tolerance.	Lecture Audio Visual Presentation Case Studies	Ecology by Cain, Michael	Quiz
Dec 20, 2024 (Day Order 1)	**Unit 1** Biogeochemical cycle – Gaseous cycle: Oxygen, Carbon, Sedimentary cycle	Lecture	Ecology by Cain, Michael	Infographic

	– Phosphorus; Attributes of population:Density, Natality, Mortality and Age distribution	Audio Visual Presentation		
Jan 3 – 7, 2025 (Day Order 3 to 6)	**Unit 2** Habitat ecology: Terrestrial habitat: Biomes, tundra, grassland, forest (coniferous, tropical, temperate and deciduous) – Ecotones (Shola forest) Deserts: Fauna, adaptations of animals inhabiting deserts and caves	Lecture With maps and photographs Field Trip to Wetland /coastal area	Principles of Ecology by Verma and Agarwal	Report on habitat ecology of wetland/coastal area
Jan 8 – 17, 2025 (Day Order 1 to 6)	**Unit 2** Deserts: Fauna, adaptations of animals inhabiting deserts and caves Ecosystem: Productivity – Carbon sequestration – Biomass Exobiology : Space ecology – Microbiota – Extra terrestrial life – Cosmic life	Documentaries Ecosystem mapping Lecture PPT Documentary	Animal Ecology and distribution of animals. - Veer Bala Rastogi and Jayaraj Animal Ecology and distribution of animals. - Veer Bala Rastogi and Jayaraj Ecology and Environment – P.D. Sharma	Infographic
Jan 8 – 17, 2025 (Day Order 1 to 6)	**Unit 3** Fresh water ecology: Physico-chemical nature of freshwater-biotic communities – Lotic habitats (rivers), Lentic habitats (Lakes-Pulicat Lake and Ponds) Marine Ecology: Physico-chemical characteristics-biotic communities of pelagic and benthic zone	Chalk and talk Videos Chalk and talk Videos	Aquatic Ecology –Mishra	Case Study Analysis
Jan 18 - 23, 2025	**C.A. Test – I**			

Jan 24 - 30, 2025 (Day Order 1 to 6)	**Unit 3** Estuarine systems: Physico – chemical characteristics – biotic communities	Lecture Video	Principles of Ecology by Verma and Agarwal	Case Study Analysis
Feb 3-8, 2025 (Day Order 1 to 6)	**Unit 3** Estuarine systems: Physico – chemical characteristics – biotic communities **Unit 4** Ecosystems – Definition – Classification – Functions - Processes – Water cycle	Lecture Video	Principles of Ecology by Verma and Agarwal	Discussion on Adyar Estuary **Component 1** **Exzoobition (20 marks)**
Feb 10– 18, 2025 (Day Order 1 to 4)	**Unit 4** Biodiversity: Definition - Magnitude Laws related to biodiversity Biodiversity of India Magnitude Distribution Conservation: Biosphere Reserves – National Parks – Wildlife Sanctuaries	Lecture PPT	Ecology and Environment – P.D. Sharma	Group Discussion
Feb 19- 26, 2025 (Day Order 1-6)	**Unit 5** Analysis of ecological data using Biostatistics – Collection of Data – Census and sampling methods. Variable: Discrete and continuous	Chalk and talk	Introduction to Biostatistics – N. Gurumani	Case Studies **Component 2** **Quiz (30 marks)**
Feb 27- Mar 6, 2025 (Day Order 1 to 6)	**Unit 5** Presentation of data: Classification and tabulation – Diagrams and graphs : Bar, Pie, Histogram, Line graph	Lecture PPT	Introduction to Biostatistics – N. Gurumani	Case Studies Problem solving
Mar 7 – 11, 2025 (Day Order 1 to 3)	**Unit 5** Concept of statistical population and sample	Lecture	Introduction to Biostatistics – N.	Case Studies Problem solving

	characteristics of frequency distribution Measures of Central tendency: Mean, Median, Mode and Weighted Arithmetic Mean	PPT Chalk and talk	Gurumani	
Mar 12 –17, 2025	**C.A. Test – II**			
Mar 18 – 20, 2025 (Day 4 to 6)	**Unit 5** Measures of Dispersion: Range, Quartile deviation, Mean deviation and Standard deviation Correlation and Regression	Lecture Chalk and talk	Introduction to Biostatistics – N. Gurumani	Case Studies Problem solving
Mar 21 - 28, 2025 (Day Order 1 to 6)	**Unit 5** Measures of Dispersion: Correlation and Regression	Lecture Chalk and talk	Introduction to Biostatistics – N. Gurumani	Case Studies Problem solving
Mar 29- April 3, 2025 (Day Order 1 to 3)	**REVISION**			

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule: November 2024 – April 2025

Department : Zoology

Name/s of the Faculty : Ms. Albina Jerome D

Course Title : Immunology

Course Code : 19ZL/MC/IM64

Shift : I

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 18 – 25, 2024 (Day Order 1-6)	**Unit 1** Introduction History & Basics of Immunology Cells & molecules of Immune system - types, sources & salient features	Interaction Lecture	Kuby Immunology by Goldsby, R.A , Thomas J. Kindt& Barbara A. Osborne Essential Immunology by Roitt, I M	Short test

Nov 26- Dec 3, 2024 (Day Order 1 to 6)	**Unit 1** Primary and secondary Lymphoid organs – Structure and functions	PowerPoint Presentation	Kuby Immunology by Goldsby, R.A , Thomas J. Kindt& Barbara A. Osborne Essential Immunology by Roitt, I M	Class Test
Dec 4-11, 2024 (Day Order 1 to 6)	**Unit 1** Types of Immunity: Natural and Acquired Immunity - Cellular and Humoral Immunity - Active and Passive Immunity with Examples	Lecture	Kuby Immunology by Goldsby, R.A , Thomas J. Kindt& Barbara A. Osborne	Questioning
Dec 12-19, 2024 (Day Order 1 to 6)	**Unit 2** Antigens: Definition, Classification, Functional characteristics Antibody: Structure, Classification, Functions	Lecture PowerPoint Presentation	Kuby Immunology by Goldsby, R.A , Thomas J. Kindt& Barbara A. Osborne	**Component 1 Formative Test (20 marks)**
Dec 20, 2024 (Day Order 1)	**Unit 2** Antibody: Structure, Classification, Functions (contd.)	Lecture	Kuby Immunology by Goldsby, R.A , Thomas J. Kindt& Barbara A. Osborne	Discussion
Jan 3 – 7, 2025 (Day Order 3 to 6)	**Unit 2** Antigen-Antibody reactions: types	Audio Visual Presentation	Kuby Immunology by Goldsby, R.A , Thomas J. Kindt& Barbara A. Osborne Immunology by Ajoy Paul	Short test
Jan 8 – 17, 2024 (Day Order 1 to 6)	**Unit 2** Antigen-Antibody reactions: types - Applications	Audio Visual Presentation	Kuby Immunology by Goldsby, R.A , Thomas J. Kindt& Barbara A. Osborne Immunology by Ajoy Paul	Quizziz Test
Jan 18 - 23, 2025	**C.A. Test – I**			
Jan 24 - 30, 2025 (Day Order 1 to 6)	**Unit 3** Complement System: three Major pathways – functions	PowerPoint Presentation Simulation	Kuby Immunology by Goldsby, R.A , Thomas J. Kindt& Barbara A. Osborne Immunology by Ajoy	**Component 2 Molecular Role play on Complement**

			Paul	**System (20 marks)**
Feb 3-8, 2025 (Day Order 1 to 6)	**Unit 3** Hypersensitivity Reactions: Types and Immune reactivity	Lecture PowerPoint Presentation	Kuby Immunology by Goldsby, R.A , Thomas J. Kindt& Barbara A. Osborne Essential Immunology by Roitt, I M	Constructing concept maps
Feb 10– 18, 2025 (Day Order 1 to 4)	**Unit 3** Transplant Rejection: types of Transplant Causes for rejection – Immuno-suppression	Video Lecture	Kuby Immunology by Goldsby, R.A , Thomas J. Kindt& Barbara A. Osborne Essential Immunology by Roitt, I M	Discussion
Feb 19- 26, 2025 (Day Order 1-6)	**Unit 4** Cytokines : Definition, Properties, Classification and functions Signal Transduction through Cytokine receptors – therapeutic uses of Cytokines	PowerPoint Presentation	Kuby Immunology by Goldsby, R.A , Thomas J. Kindt& Barbara A. Osborne Essential Immunology by Roitt, I M	Concept Mapping
Feb 27- Mar 6, 2025 (Day Order 1 to 6)	**Unit 4** Immune Reactions in Viral, Bacterial and Parasitic infections	Lecture PowerPoint Presentation	Kuby Immunology by Goldsby, R.A , Thomas J. Kindt& Barbara A. Osborne Essential Immunology by Roitt, I M	Class test
Mar 7 – 11, 2025 (Day Order 1 to 3)	**Unit 5** Autoimmune Disorders: examples, causes, characteristics	PowerPoint Presentation	Kuby Immunology by Goldsby, R.A , Thomas J. Kindt& Barbara A. Osborne Essential Immunology by Roitt, I M	Discussion
Mar 12 –17, 2025	**C.A. Test – II**			
Mar 18 – 20, 2025 (Day 4 to 6)	**Unit 5**	Audio Visual	Kuby Immunology by Goldsby, R.A ,	Discussion

	Vaccines: Principles and types	Presentation	Thomas J. Kindt& Barbara A. Osborne Essential Immunology by Roitt, I M	Case study Analysis
Mar 21 - 28, 2025 (Day Order 1 to 6)	**Unit 5** Infectious diseases and Vaccines Immunisation Schedule	Lecture PowerPoint Presentation	Kuby Immunology by Goldsby, R.A , Thomas J. Kindt& Barbara A. Osborne Essential Immunology by Roitt, I M	Self-study and Interaction **Component 3 Quiz (10 marks)**
Mar 29- April 3, 2025 (Day Order 1 to 3)	**REVISION**			

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule: November 2024 – April 2025

Department : Zoology

Name/s of the faculties : Dr. Rita Jayaraj (2 hours) & Ms. Janani N (3 hours)

Course Title : Environmental Biotechnology

Course Code : 19ZL/ME/EB45

Shift : I

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 18 – 25, 2024 (Day Order 1-6)	**Unit 1:** Environmental monitoring and Introduction. **Unit 2:** Bioremediation Introduction: Synthetic Compounds-Petrochemical Compounds and Inorganic Wastes in the Environment.	Chalk and talk Lecture and discussion	Environmental Biotechnology-Alan Scragg Textbook of Biotechnology-Sathyamurthy	Recapitulation Questioning

Nov 26- Dec 3, 2024 (Day Order 1 to 6)	**Unit 1:** Sampling – Air, Soil and Water **Unit 2:** Bioaugmentation using Genetically Modified Organisms, Bioremediation Strategies, Phytoremediation and Bioaugmentation.	Lecture Powerpoint Presentation	Environmental Biotechnology - Alan Scragg	Recapitulation Oral Quiz
Dec 4-11, 2024 (Day Order 1 to 6)	**Unit 1:** Analysis – Air, Soil and Water **Unit 2:** Metal and gaseous Bioremediation, Bioremediation Techniques	Lecture Audio video presentation	Environmental Biotechnology- Allen K.	Comprehension Discussion
Dec 12-19, 2024 (Day Order 1 to 6)	**Unit1:** Determination of Biodegradable Organic Material, Monitoring Pollution **Unit 2:** Case Studies: Taj Mahal (Agra), Lotus temple (Delhi)	Lecture Discussion on case studies	Environmental Biotechnology - Alan Scragg Textbook of Biotechnology- Sathyamurthy	Questioning Group discussion
Dec 20, 2024 (Day Order 1)	**Unit 2:** Case studies: Golden Temple (Amritsar) and Charminar (Hyderabad)	Discussion	Environmental Biotechnology - Alan Scragg Textbook of Biotechnology- Sathyamurthy	Debate about Case studies
Jan 3 – 7, 2025 (Day Order 3 to 6)	**Unit 1**: Toxicity Testing Using Biological Material – Bio-indicators **Unit 3:** Sewage Treatment Methods: STP - Sludge Treatment and Disposal	Lecture Powerpoint Presentation	Environmental Biotechnology - Alan Scragg Textbook of Biotechnology- Sathyamurthy	Questioning and recall Quiz

Jan 8 – 17, 2024 (Day Order 1 to 6)	**Unit 1:** Biomarkers and Biosensors **Unit 3**: AnaerobicDigestion	Powerpoint Presentation Lecture and Discussion	Environmental Biotechnology - Alan Scragg Textbook of Biotechnology- Sathyamurthy	Recapitulation Questioning and recall
Jan 18 - 23, 2025	**C.A. Test – I**			

Jan 24 - 30, 2025 (Day Order 1 to 6)	**Unit 5:** Introduction- need for recovery of resources **Unit 3:** Treatment of Agricultural Wastes - Removal of Nitrogen and Phosphorus	Interactive session Lecture	Environmental Biotechnology - Alan Scragg	**Component 1 Research article summary (10 marks)** Discussion Oral quiz
Feb 3-8, 2025 (Day Order 1 to 6)	**Unit 5:** Oil recovery: Enhanced oil recovery **Unit 3:** Treatment of Industrial Effluents: ETP – Distillery industry	Powerpoint Presentation Powerpoint Presentation	Environmental Biotechnology - Alan Scragg Introduction to Environmental Biotechnology- Chatterji, A.K.	Discussion Recapitulation
Feb 10– 18, 2025 (Day Order 1 to 4)	**Unit 5:** Microbially enhanced oil recovery **Unit 3:** Treatment of Industrial Effluents: ETP – Dairy industry	Lecture Lecture and discussion	Environmental Biotechnology - Alan Scragg	Quiz
Feb 19- 26, 2025 (Day Order 1-6)	**Unit 5:** Bioleaching – Types of Bioleaching and Biomining **Unit 3:** Treatment of Industrial Effluents: ETP – Tannery industry	Powerpoint presentation Audio video Presentation	Environmental Biotechnology - Alan Scragg Textbook of Biotechnology- Sathyamurthy	Discussion **Component 2 Poster (20 marks) Topics Bioremediation**

				Environmental Monitoring Wastewater Treatment **Sustainable Agriculture** **Biofuels**
Feb 27- Mar 6, 2025 (Day Order 1 to 6)	**Unit 5:** Extraction of copper **Unit 3:** Treatment of Industrial Effluents: Textile and Sugar Industries	Lecture Powerpoint Presentation	Environmental Biotechnology - Alan Scragg Textbook of Biotechnology- Sathyamurthy	Discussion Interaction and questioning
Mar 7 – 11, 2025 (Day Order 1 to 3)	**Unit 5-**Extraction of Uranium **Unit 4:** Biofertilizers in an Agro Ecosystem	Lecture Discussion	Environmental Biotechnology - Alan Scragg	Questioning
Mar 12 –17, 2025	**C.A. Test – II**			
Mar 18 – 20, 2025 (Day 4 to 6)	**Unit 5:** Extraction of Gold **Unit 4:** Biopesticides: Types and Mode of Action of *Bacillus thuringiensis*	Lecture Audio video Presentation	Environmental Biotechnology - Alan Scragg Introduction to Environmental Biotechnology- Chatterji, A.K.	**Component 3 Quiz (20 marks)** Group Quiz
Mar 21 - 28, 2025 (Day Order 1 to 6)	**Unit 4:** Biofuels: Biogas and Biodiesel Ethanol and Hydrogen	Powerpoint Presentation	Environmental Biotechnology- Allen K.	Group Discussion
Mar 29- April 3, 2025 (Day Order 1 to 3)	**REVISION**			

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule: November 2024 – April 2025

Department : Zoology

Name/s of the Faculty : Dr. Kalpana Jayaraman (3 hours) and Ms Parimalam Pari (2 hrs.)

Course Title : **Introduction to Marine Biology**

Course Code : **19ZL/ME/IB45**

Shift : **I**

Week & No. of hours	Units & Topics	Teaching Methodolo	Text & References	Method of Evaluation
Nov 18 – 25, 2024 (Day Order 1-6)	**Unit 1** **Introduction** Oceanography Geologic History of Oceans – Seas Continental Shelf – Continental Slope **Unit 3** Threats to marine biodiversity: physical alteration and habitat loss, overexploitation	Chalk and Talk PowerPoint Presentation Video on oceans	Oceanography: An Invitation to Marine Science - Tom Garrison and Robert Ellis	Questions on ocean video Discussion on threats to marine biodiversity
Nov 26- Dec 3, 2024 (Day Order 1 to 6)	**Unit 1** Oceanic Currents Ocean Water Masses and Circulation Waves and Tsunamis **Unit 3** Pollution, alien species, climate change, acidification	Lecture PowerPoint Presentation	Essentials of Oceanography – Alan P. Trujillo and Harold V. Thurman Marine Biology – Peter Castro and Michael E Huber	Discussion on 2004 Tsunami Quiz on major marine pollutants
Dec 4-11, 2024 (Day Order 1 to 6)	**Unit 1** Ocean Water Masses and Circulation Waves and Tsunamis **Unit 3** Ocean pollution: kinds and quantities of pollutants entering oceans – sewage and nutrients from rivers	Lecture PowerPoint Presentation Visit to coast	Essentials of Oceanography – Alan P. Trujillo and Harold V. Thurman Oceanography: An Invitation to Marine Science - Tom Garrison and Robert Ellis	Questioning Discussion on the physical attributes of Marina Beach/Besant Nagar Beach

Dec 12-19, 2024 (Day Order 1 to 6)	**Unit 1** Tides: Origin - Hydrothermal Vents **Unit 3** Trace metals – heavy metals - nuclear waste – fate of pollutants – toxic effects **Unit 3** Trace metals – heavy metals - nuclear waste –	Lecture PowerPoint Presentation Videos	Essentials of Oceanography – Alan P. Trujillo and Harold V. Thurman Introduction to Marine Biology by Brooks Cole	Analysing tide charts
Dec 20, 2024 (Day Order 1)	**Unit 1** Polar Seas Marine Instrumentation: Echosounder, Side-scanning Sonar, Marine Navigator, Underwater Camera Resources	Lecture PowerPoint Presentation Expedition Timeline	Essentials of Oceanography – Alan P. Trujillo and Harold V. Thurman Invitation to Oceanography – Paul R Pinet	Discussion on the objectives and instruments needed during scientific expeditions
Jan 3 – 7, 2025 (Day Order 3 to 6)	**Unit 2** Ocean Resources and Exploration - Expeditions Bioresources of the Sea: Food, Mineral and Petroleum Resources Marine Zoogeography **Unit 3** Plastic pollution in the marine environment: nature of plastics, impact – oil spills, impact Biofouling: definition, biofouling organisms	Lecture PowerPoint Presentation Coastal faunal survey	Elements of Marine Ecology – R. V. Tait and F. A. Dipper Marine Biology – Peter Castro and Michael E Huber Web Source: Marine Biotechnology - Kim	Quiz on resources provided by the ocean Reviewing video on plastic pollution **Component 1** **Report on coastal fauna and observation of plastic pollution on the coast (10 marks)**

Jan 8 – 17, 2024 (Day Order 1 to 6)	**Unit 2** Marine Biodiversity – Definition, Importance, Assessment Techniques Marine Invertebrates and Chordates (General) Biodiversity at Regional and Global Level Pelagic Organisms: Plankton and Nekton; Benthic Fauna -Deep Sea Life: Adaptations, Factors Affecting Populations **Unit 3** Problems due to biofouling – pollution due to antifouling paints – biofouling control – Case		Elements of Marine Ecology – R. V. Tait and F. A. Dipper Marine Biology – Peter Castro and Michael E Huber Web Source: Marine Biotechnology - Kim	Quiz on marine fauna
Jan 18 - 23, 2025	**C.A. Test – I**			

Jan 24 - 30, 2025 (Day Order 1 to 6)	**Unit 2** Coastal Biodiversity - Inter-tidal, Littoral and Sub-littoral Zones - Sea-grass and other halophytes Mangroves - fauna associated with mangroves -Coral Reefs - fauna associated with reefs **Unit 5** Marine microbes: bacteria, fungi and protozoans	Lecture PowerPoint Presentation Guest Lecture	Elements of Marine Ecology – R. V. Tait and F. A. Dipper Marine Biology – Peter Castro and Michael E Huber Introduction to Marine Biology by Brooks Cole	**Component 2 Group Presentations (10 marks)** Plankton and Nekton Climate Change and the Marine Environment Marine Exploration Mariculture
Feb 3-8, 2025 (Day Order 1 to 6)	**Unit 2** Marine microfauna (foraminiferans and radiolarians) Sea Birds – Diversity, Adaptations and Unique Behaviour **Unit 5**	PowerPoint Presentation Examining of beach sands for foraminifera	Marine Biology – Peter Castro and Michael E Huber Biology of Marine Birds ed. By E.A.Schreiber and Joanna Burger Web Source: Marine Biotechnology - Kim	Discussion on adaptation in sea birds Observing foraminiferan ooze

	Microbial biofilms – carbohydrate products and derivatives – nitrogenous compounds			
Feb 10– 18, 2025 (Day Order 1 to 4)	**Unit 2** Marine Mammals - Diversity, Adaptations and Unique Behaviour **Unit 5** Production and applications of marine microbial products – pigments: Astaxanthin, β carotene	PowerPoint Presentation Guest Lecture	Marine Biology – Peter Castro and Michael E Huber Web Source: Marine Biotechnology - Kim	Discussion on few research papers on behaviour of marine mammals Discussion
Feb 19- 26, 2025 (Day Order 1-6)	**Unit 4** Mariculture – Definition, importance, present status in India, types of culture Commercial Marine Fishery Sources of India and Tamil Nadu **Unit 5** Bioadhesives and thermostable enzyme – Probiotic bacteria and their importance in aquaculture	Lecture PowerPoint Presentation Guest Lecture	Coastal Aquacultures and Mariculture – S. Athithan Marine Biotechnology - R Ulber	Discussion on marine fisheries
Feb 27- Mar 6, 2025 (Day Order 1 to 6)	**Unit 4** Marine Ornamental Aquatic Organisms: Crustaceans, Molluscs, Fishes – their suitability for Aquaria **Unit 5** Drugs from marine animals: Sources, Importance - Antibiotic compounds Steroids,carotenoids and Sterols from marine forms	PowerPoint Presentation Group Discussion Guest Lecture	Coastal Aquacultures and Mariculture – S. Athithan Web Source: Marine Biotechnology - Kim	Discussion on suitability of fish for aquaria
Mar 7 – 11, 2025	**Unit 4**		Fossils at a Glance – Clare Milsom	**Component 3 Quiz (30**

(Day Order 1 to 3)	Marine Ornamental Aquatic Organisms: Crustaceans, Molluscs, Fishes – their suitability for Aquaria (contd.) **Unit 5** Toxins from marine animals: Types, Functional properties	PowerPoint Presentation	and Sue Rigby Web Source: Marine Biotechnology - Kim	**marks)**
Mar 12 –17, 2025	**C.A. Test – II**			
Mar 18 – 20, 2025 (Day 4 to 6)	**Unit 4** Marine fossils: Coelenterates, Trilobites, Gastropods, Cephalopods **Unit 5** – Venom in marine animals: sea snake-- Pharmacological and toxicological properties	PowerPoint Presentation Clay modeling of marine fossils	Fossils at a Glance – Clare Milsom and Sue Rigby	Clay models of marine fossils and discussion relating to fossils
Mar 21 - 28, 2025 (Day Order 1 to 6)	**Unit 4** Marine fossils: Pelecypods, Brachiopods, Echinoderms and Ichthyosaurs **Unit 5** Fish and Molluscs - Pharmacological and toxicological properties	Lecture	Marine Biotechnology by R Ulber	Quiz on toxins from marine fauna
Mar 29- April 3, 2025 (Day Order 1 to 3)	**REVISION**			

STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI

Course Schedule: November 2024 – April 2025

Department : Zoology

Name/s of the Faculty : Dr. Parimalam M

Course Title : **Nutrition and Therapeutic Diet**

Course Code : **19ZL/GE/ND22**

Shift : **I**

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 18 – 25, 2024 (Day Order 1-6)	Introduction to the syllabus **Unit 1.1** Sources and functions of Micronutrients and macronutrients	Interaction and discussion	Human nutrition - Srilakshmi	Discussion
Nov 26- Dec 3, 2024 (Day Order 1 to 6)	**Unit 1.1** Sources and functions of antioxidants and fibres **Unit1.2** Balanced diet-Food groups	Power point	Discovering Nutrition, InselPaul *et al*	Infographic on micro and macronutrients
Dec 4-11, 2024 (Day Order 1 to 6)	Food guide and Nutrigenomics **Unit 1.3** Protein Energy Malnutrition, Iodine Deficiency	Power point	Nutrition Now Brown Judith E	Quiz
Dec 12-19, 2024 (Day Order 1 to 6)	**Unit 1.3** Vitamin A deficiency and **Unit 1.4** Eating disorders	Lecture Power point	Nutrition Now Brown Judith E Perspective in Nutrition – Gordon M.Wardlaw and Jeffrey S. Hampl	Group discussion
Dec 20, 2024 (Day Order 1)	No Class			

Jan 3 – 7, 2025 (Day Order 3 to 6)	**Unit 2.1** Diet Therapy: Purpose and Principles - Food Acceptance in Illness	Chalk and Talk	Food and Nutrition Goyal	Short quiz
Jan 8 – 17, 2024 (Day Order 1 to 6)	**Unit 2.1** Therapeutic diets- Tube feeding- Parenteral feeding	Power point Presentation/Video	Fundamentals of food, nutrition and diet therapy -Mudabi, S.R and M. V. Rajagopal	Group Discussion
Jan 18 - 23, 2025	**C.A. Test – I**			
Jan 24 - 30, 2025 (Day Order 1 to 6)	**Unit 2.2** Diet for Diabetes mellitus and cardiovascular diseases	Power point	Dietetics- Srilakshmi	Short Quiz
Feb 3-8, 2025 (Day Order 1 to 6)	**Unit 2.3** Diet Therapy for Addictive Behaviors - Anorexia nervosa Case Studies	Power point/Video	Perspectives in Nutrition- Gordon M.Wardlaw and Jeffrey S. Hampl	Group Discussion Of Case studies
Feb 10– 18, 2025 (Day Order 1 to 4)	**Unit 2.3** Bulimia nervosa and Alcoholism	Power point	Discovering Nutrition, Insel Paul *et al*	Discussion
Feb 19- 26, 2025 (Day Order 1-6)	**Unit 3.1** Meal Planning – Nutritious food. Calculation of calories	Power Point	Fundamentals of food, nutrition and diet therapy -Mudabi, S.R. and M. V. Rajagopal	**Component 1 Presentations on Meal Planning (15 marks)**
Feb 27- Mar 6, 2025 (Day Order 1 to 6)	**Unit 3.2** Preparation of Low Cost Nutritious Food **Unit 3.3** Nutritious food for Anaemic Individuals	Powerpoint Lecture	Subject expert Fundamentals of food, nutrition and diet therapy Mudabi, S.R and M.V. Rajagopal	Discussion Oral Quiz
Mar 7 – 11, 2025 (Day Order 1 to 3)	**No Class**			

Mar 12 –17, 2025	**C.A. Test – II**			
Mar 18 – 20, 2025 (Day 4 to 6)	**Unit 3.3** Nutritious food for Adolescents, Pregnant women, Elderly Preparation of suitable dishes for the above	Power point/Video	Fundamentals of food, nutrition and diet therapy -Mudabi	**Component 2 Preparation of Specific recipes for adolescents, pregnant women and elderly (10 marks)**
Mar 21 - 28, 2025 (Day Order 1 to 6)	Summarizing Course content	Power point/Lecture	Caroll A. Lutz, (2015) Nutrition and Diet therapy, (6th ed)., Philadelphia: F.A. Davis Company	Discussion **CA TEST (25 marks)**
Mar 29- April 3, 2025 (Day Order 1 to 3)	No Class			