

**STELLA MARIS COLLEGE (AUTONOMOUS), CHENNAI**

**Course Schedule: November 2023 - April 2024**

**Department:** Zoology  
**Name of the Faculty:** Ms. Albina Jerome D  
**Course Title:** Microbiology  
**Course Code:** 19ZL/MC/MB44  
**Shift :** I

<b>Week &amp; No. of hours</b>	<b>Units &amp; Topics</b>	<b>Teaching Methodology</b>	<b>Text &amp; References</b>	<b>Method of Evaluation</b>
Nov 22 – 23, 2023 (Day Order 1 & 2)	<b>Unit 1</b> Syllabus Scope – History Outline Classification – Prokaryotes and Eukaryotes	Interaction & Discussion	Microbiology by Prescott  Microbiology by Bauman  A textbook of Microbiology – R.C Dubey and D.K. Maheshwari	Timeline activity
Nov 24-30, 2023 (Day Order 1 to 6)	<b>Unit 1</b> Characteristic Features of Prokaryotes and eukaryotes Classification of bacteria Classification of Viruses Microscopy -Types	PowerPoint Presentation  Audio Visual Presentation	Microbiology by Prescott  Microbiology by Bauman  A textbook of Microbiology – R.C Dubey and D.K. Maheshwari	Questioning
Dec 1-7, 2023 (Day Order 1 to 6)	<b>Unit 1</b> Specimen preparation and Staining Techniques Media Preparation and types of culture media Preservation of culture – Pure culture techniques <b>Unit 2</b> Archaea –Brief Outline	Lecture  Audio Visual Presentation	Microbiology by Bauman  Microbiology by Prescott  A textbook of Microbiology – R.C Dubey and D.K. Maheshwari	Questioning
Dec 8-9, 2023 (Day Order 1, 3)	<b>Unit 2</b> Bacteria: Gross	Lecture	Microbiology – An Introduction	Recapitulati on

	Morphology of Bacterial Cells - Size, Shape and Arrangement; Structure of a Bacterium: Cell Wall, flagellum – flagellar arrangement	PowerPoint Presentation	by Tortora, Funke and Case  Principles of Microbiology Volume II -Powar and Daginawala	
Dec 11-15, 2023 (Day Order 2 to 6 )	<b>Unit 2</b> Chemical Composition and Characteristics of Gram Positive and Gram Negative Bacteria – Molecular Structure of Nucleoid – Types and Functions of Plasmids- cytoplasmic inclusions.	Lecture  PowerPoint Presentation	Microbiology – An Introduction by Tortora, Funke and Case  Principles of Microbiology Volume II -Powar and Daginawala	Molecular Role Play
Dec 16 – 22, 2023 (Day Order 1 to 6)	<b>Unit 2</b> Viruses - General properties - isolation and cultivation of viruses Structure and reproduction of T <sub>4</sub> phage Multiplication of an animal virus. Subviral Particles-Virions and Prions	Lecture  PowerPoint Presentation	Microbiology – An Introduction by Tortora, Funke and Case	<b>Component - Project design</b>
Jan 3 – 6, 2024 (Day Order 1 to 4)	<b>Unit 2</b> Reproduction and Growth of Bacterial Population - Growth Curve – Measurement of Microbial Growth	Lecture  PowerPoint Presentation	Microbiology – An Introduction by Tortora, Funke and Case	Questioning
Jan 8 – 12, 2024	<b>C.A. Test – I</b>			
Jan 13, 2024 (Day Order 1)	<b>Unit 3</b> Physical Conditions Required for Growth of Bacteria: Temperature, Oxygen and pH	Lecture  Audio Visual Presentation	Microbiology – An Introduction by Tortora, Funke and Case  Principles of Microbiology Volume II -Powar and Daginawala	Questioning Discussion
Jan 18 -20, 2024	<b>Unit 3</b>	PowerPoint	Microbiology –	Questioning

(Day Order 4 to 6)	Nutritional Requirements - General Nutritional Classification of Bacteria	Presentation	An Introduction by Tortora, Funke and Case	
Jan 22-29, 2024 (Day Order 1 to 6)	<b>Unit 3</b> Recombination in Bacteria: Transformation, Conjugation and Transduction  Microbial Control Importance of control Control of microbes by physical agents Control by chemical agents Antibiotics and their mechanism of action	Lecture  Audio Visual Presentation	Principles of Microbiology Volume II -Powar and Daginawala  Microbiology – A Human Perspective- Nester	Quiz
Jan 30 – Feb 2, 2024 (Day Order 1 to 4)	<b>Unit 4</b> Normal microbiota of the human body Disease cycle of a communicable disease Epidemiology of infectious diseases Fomite borne disease Nosocomial infections	Discussion  PowerPoint Presentation	Microbiology – An Introduction by Tortora  Microbiology by Bauman	Discussion
Feb 3, 2024 (Day Order 2)	<b>Unit 4</b> Infection through body fluids - Hepatitis B and Ebola	PowerPoint Presentation	Microbiology – An Introduction by Tortora  Microbiology by Bauman	Discussion
Feb 5- 6, 2024 (Day Order 5 to 6)	<b>Unit 4</b> Airborne Diseases - Influenza, Pneumonia, Measles Foodborne and Waterborne diseases - Hepatitis A, Typhoid, Polio	PowerPoint Presentation	Microbiology – An Introduction by Tortora  Microbiology by Bauman	Questioning
Feb 7 – 14, 2024 (Day Order 1 to 6)	<b>Unit 4</b> Zoonotic diseases - Dengue fever, Swine flu, Leptospirosis	Lecture  Audio Visual Presentation	Microbiology – An Introduction by Tortora	Questioning

	Sexually transmitted diseases - Gonorrhoea, Syphilis, Genital Herpes			
Feb 15 – 22, 2024 (Day Order 1 to 6)	<b>Unit 5</b> Microbiology of Food: Sources and Types of Microorganisms in Milk Tests for contamination Pasteurization of milk Sterilization; Dairy Products	Lecture  PowerPoint Presentation	A textbook of Microbiology – R.C Dubey and D.K. Maheshwari	Oral Quiz
Feb 23 – 24, 2024 (Day Order 1 & 5)	<b>Unit 5</b> Fermented Food; Probiotics; Spoilage of food and its control - Food Poisoning; Indicator Organisms	Lecture  PowerPoint Presentation	A textbook of Microbiology – R.C Dubey and D.K. Maheshwari	Questioning
Feb 26 – Mar 1, 2024 (Day Order 2 to 6)	<b>Unit 5</b> Soil Microbiology: Role of Microorganisms in soil fertility Nitrogen Cycle	Lecture  PowerPoint Presentation	Microbiology – An Introduction by Tortora, Funke and Case  Principles of Microbiology Volume II -Powar and Daginawala	<b>Component - Project report submission &amp; Viva</b>
Mar 2, 2024 (Day Order 1)	<b>Unit 5</b> Sulphur Cycle	Audio Visual Presentation	Microbiology – An Introduction by Tortora, Funke and Case  Principles of Microbiology Volume II -Powar and Daginawala	Discussion
Mar 4 –8, 2024	<b>C.A. Test – II</b>			
Mar 9 – 16, 2024 (Day 6 & Day Order 1 to 6)	<b>Unit 5</b> Microbial damage of materials : Natural fabrics, and Paper	Lecture  Audio Visual Presentation	Microbiology – An Introduction by Tortora, Funke and Case  Principles of Microbiology Volume II -Powar	<b>Component Quiz</b>

			and Daginawala	
Mar 18 - 19, 2024 (Day Order 2 to 3)	<b>Unit 5</b> Microbial damage of materials : Cosmetics	Audio Visual Presentation	Microbiology – An Introduction by Tortora, Funke and Case	Discussion
Mar 20-22, 2024 (Day Order 4 to 6)	<b>REVISION</b>			

**Department** : Zoology  
**Name/s of the Faculty** : Dr. M. Parimalam  
**Course Title** : Applied Zoology  
**Course Code** : 19ZL/MC/AZ45  
**Shift** : 1

<b>Week &amp; No. of hours</b>	<b>Units &amp; Topics</b>	<b>Teaching Methodology</b>	<b>Text &amp; References</b>	<b>Method of Evaluation</b>
Nov 22 – 23, 2023 (Day Order 1 & 2)	Introduction to the syllabus	Lecture	Text book on Applied Zoology- Shukla and Upadhyay	Questioning
Nov 24-30, 2023 (Day Order 1 to 6)	<b>Unit1.1</b> Types of Aquaculture: Mono, Poly, Extensive, Semi-Intensive, Intensive, Super Intensive	Powerpoint	Text book on Applied Zoology- Shukla and Upadhyay	Discussion
Dec 1-7, 2023 (Day Order 1 to 6)	Monosex, Sewage-fed culture and Integrated Fish Farming	Powerpoint/video	Text book on Applied Zoology- Shukla and Upadhyay	Oral Quiz
Dec 8-9, 2023 (Day Order 1, 3)	<b>Unit 1.2</b> Culture of Prawn, Lobster,	Powerpoint/ Lecture/Video	Ahsan, J. & Sinha, S.P. (2009). Handbook of Economic Zoology. New Delhi: S. Chand.	Discussion

Dec 11-15, 2023 (Day Order 2 to 6)	Edible Oyster and Live Feed Animals ( <i>Artemia</i> sp., <i>Daphnia</i> sp., and Rotifers )	Powerpoint/ Lecture/Video	Text book on Applied Zoology- Shukla and Upadhyay	Discussion
Dec 16 – 22, 2023 (Day Order 1 to 6)	<b>Unit 1.3</b> Preservation and Processing of Fish and Prawn: Chilling, Freezing, Freeze Drying, Smoking, Salting and Canning – Byproducts of fishing	Powerpoint	Aquaculture –K Shanmugham	Quiz
Jan 3 – 6, 2024 (Day Order 1 to 4)	<b>Unit 1.4</b> Aquarium setting and maintenance: ornamental fishes, safety measures and devices - prospects of Ornamental fisheries - export potential	Powerpoint/ videos	Aquaculture - K.Shanmugham	Discussion
Jan 8 – 12, 2024	<b>C.A. Test – I</b>			
Jan 13, 2024 (Day Order 1)	<b>Unit 2.1</b> Sericulture Industry in India - Central Silk Board - Silk Research Institutes in India	Processes and techniques focused by power point and discussion Lecture	Applied Zoology- Shukla and Upadhyay	Quiz
Jan 18 -20, 2024 (Day Order 4 to 6)	<b>Unit 2.2</b> Insect Pests: Salient Features, Nature of Destruction and Control Measures of the following pests: Pests of Paddy, Cotton,	Chalk and talk	Handbook on Economic Zoology – Jawahar Ahsan and Sinha	Discussion
Jan 22-29, 2024 (Day Order 1 to 6)	Insect Pests: Sugar Cane and Stored Food Grains (Any Three Major Pests of each Crop/Stored Food Grains)	Power point	General and Applied Entomology - Vasanthraj, B. & Ananthkrishnan T.N	Comprehension

Jan 30 – Feb 2, 2024 (Day Order 1 to 4)	<b>Unit 2.2</b> Pests of Sugar Cane and Stored Food Grains <b>Unit 2.3</b> Identification, damage and control of any 3 common Pests of Fruits and Vegetables	Lecture	Handbook on Economic Zoology – Jawahar Ahsan and Sinha	<b>Component Assignment Submission</b>
Feb 3, 2024 (Day Order 2)	<b>Unit 2.4</b> Integrated Pest Management (IPM)	Powerpoint	Text book on Applied Zoology- Shukla	Discussion
Feb 5- 6, 2024 (Day Order 5 to 6)	Continuation of IPM	Power point	General and Applied Entomology - Vasanthraj, B. & Ananthakrishnan, T.N	Discussion
Feb 7 – 14, 2024 (Day Order 1 to 6)	<b>Unit 3.1</b> Soil Microarthropods, Millipedes, Centipedes, Snails and Slugs – Their Importance in Soil Ecosystem <b>Unit 3.2</b> Termites: Characteristics of Mound Soils – Decomposition of Organic Matter –	Powerpoint	Text book on Applied Zoology- Shukla and Upadhyay  Handbook on Economic Zoology – Jawahar Ahsan and Sinha	Questions
Feb 15 – 22, 2024 (Day Order 1 to 6)	<b>Unit 3.2</b> Termitophiles – Termite Damage to Crops and Buildings – Control Measures <b>Unit 3.3</b> Soil Microarthropods: Sampling Methods and Identification of any five soil micro-arthropods extracted using Berlese Funnel	Lecture  Demonstration	Text book on Applied Zoology- Shukla and Upadhyaya  Handbook on Economic Zoology – Jawahar Ahsan and Sinha	Quiz

Feb 23 – 24, 2024 (Day Order 1 & 5)	<p><b>Unit 4.1</b> Medicinal Significance of Sponges, Corals, Scorpion venom, Bee venom, Snake venom, Shells</p> <p><b>Unit 4.2</b> Poultry Science: Quail Farming - Different Breeds - Selective Breeding, Housing and Rearing - Role of Nutrition in Egg Laying - Common Diseases - Economic Importance</p>	Lecture	<p>Text book on Applied Zoology- Shukla and Upadhyaya</p> <p>Handbook on Economic Zoology – Jawahar Ahsan and Sinha</p>	Class Discussion
Feb 26 – Mar 1, 2024 (Day Order 2 to 6)	<p><b>Unit 4.2</b> Role of Nutrition in Egg Laying - Common Diseases - Economic Importance</p> <p><b>Unit 4.3</b> Economic Importance of Mammals: Indirect and Direct Value of Mammals -</p>	<p>Lecture</p> <p>Powerpoint</p>	Text book on Applied Zoology- Shukla and Upadhyaya	Questions
Mar 2, 2024 (Day Order 1)	<p><b>Unit 4.3</b> Rabbit farming, Piggery and Dairy</p> <p><b>Unit 5.1</b> Role of women in small scale industries</p>	<p>Chalk and talk</p> <p>Field Visit</p>	Text book on Applied Zoology- Shukla and Upadhyaya	Class Discussion
Mar 4 –8, 2024	<b>C.A. Test – II</b>			
Mar 9 – 16, 2024 (Day 6 & Day Order 1 to 6)	<p><b>Unit 5.2</b> Government and Research organisations: CIBA, ZSI, CMFRI, IARI, ICAR, CRRI, FAO, MSSRF, IIBAT and FSI</p>	Powerpoint	Research organization websites	<b>March 15 – Component quiz</b>
Mar 18 - 19, 2024 (Day Order 2 to 3)	<p><b>Unit 5.3</b> Entrepreneurial Skills: Marketing and Financial Support - Branding - Promotion</p>	Lecture	<p>Aquaculture - K. Shanmugham</p>	Discussion



Mar 20-22, 2024  
(Day Order 4 to 6)

**REVISION**

**Department** : Zoology  
**Name/s of the Faculty** : Dr. Kalpana Jayaraman  
**Course Title** : Medical Laboratory Technology  
**Course Code** : 19ZL/ME/LT45  
**Shift** : I

Week & No. of hours	Units & Topics	Teaching Methodology	Text & References	Method of Evaluation
Nov 22 – 23, 2023 (Day Order 1 & 2)	<b>Unit 1 - Introduction</b> Good Lab Practices (GLP)	Lecture Discussion	Medical Laboratory Technology , Methods and Interpretations – Sood	Mind Mapping
Nov 24-30, 2023 (Day Order 1 to 6)	<b>Unit 1</b> Good Lab Practices (contd.) Sterilization of laboratory items Preparation of reagents – RBC fluid, WBC fluid, Normal saline and Leishman’s stain Venous and capillary blood collection techniques	Discussion on lab design Study of working of instruments and chemicals used in labs for sterilization Lecture Demonstration	Baker and Silverton’s Introduction to Medical Laboratory Technology – Baker, Silverton and Pallister Medical Laboratory Technology , Methods and Interpretations – Sood	Making lab blueprints Questioning Discussion
Dec 1-7, 2023 (Day Order 1 to 6)	<b>Unit 1</b> Anticoagulants - Modes of Action and Uses  Biomedical Wastes: Classification, Characteristics and Potential Health Hazards, Biomedical Waste Management: Rules and Regulations  <b>Unit 2 - Haematology</b> Red Blood Corpuscle: Normal Structure	Lecture  Audio visual on Biomedical Waste Management  Power Point	Baker and Silverton’s Introduction to Medical Laboratory Technology – Baker, Silverton and Pallister  Lynch’s Medical Laboratory Technology - Raphael	Quiz Discussion

Dec 8-9, 2023 (Day Order 1, 3)	<b>Unit 2</b> Abnormal RBCs Erythropoiesis	Lecture	Lynch's Medical Laboratory Technology - Raphael	Recapitulation
Dec 11-15, 2023 (Day Order 2 to 6)	<b>Unit 2</b> Total Count-Packed cell volume - Wintrobe's and Microhaematocrit techniques  Total reticulocyte count Erythrocyte sedimentation rate: Westergren's method  Haemoglobin Estimation: Sahli's, Drabkin's method	Demo of RBC Count and Drabkin's method  Lecture	Baker and Silverton's Introduction to Medical Laboratory Technology – Baker, Silverton and Pallister  Lynch's Medical Laboratory Technology - Raphael	Recapitulation
Dec 16 – 22, 2023 (Day Order 1 to 6)	<b>Unit 2</b> Different types of Anaemia  Polycythemia  White Blood Corpuscle Different types of WBC Leucopoiesis	Lecture  Power Point Presentation	Baker and Silverton's Introduction to Medical Laboratory Technology – Baker, Silverton and Pallister  Medical Laboratory Technology – Polansky	Quiz on types of anaemia  Questioning
Jan 3 – 6, 2024 (Day Order 1 to 4)	<b>Unit 2</b> Total WBC count  Preparation of blood smear for differential count  Leucopenia	Demo  Lecture  Power Point Presentation	Baker and Silverton's Introduction to Medical Laboratory Technology – Baker, Silverton and Pallister  Medical Laboratory Technology – Polansky Lynch's Medical Laboratory Technology -Raphael	Questioning
Jan 8 – 12, 2024	<b>C.A. Test – I</b>			
Jan 13, 2024 (Day Order 1)	<b>Unit 2</b> Leucocytosis	Lecture  Power Point Presentation	Baker and Silverton's Introduction to Medical Laboratory Technology – Baker, Silverton and Pallister  Medical Laboratory Technology – Polansky	
Jan 18 -20, 2024	<b>Unit 2</b>	Lecture	Baker and Silverton's Introduction to Medical	<b>Component – Poster</b>

(Day Order 4 to 6)	Leukaemia	Power Point Presentation	Laboratory Technology – Baker, Silverton and Pallister  Medical Laboratory Technology – Polansky Lynch’s Medical Laboratory Technology -Raphael	<b>presentations begin</b>
Jan 22-29, 2024 (Day Order 1 to 6)	<b>Unit 2</b>  Blood platelets Platelet counting  <b>Unit 3</b> <b>Tranfusion and Coagulation</b> Immunohaematological Studies – importance -	Lecture   Power Point Presentation	Baker and Silverton’s Introduction to Medical Laboratory Technology – Baker, Silverton and Pallister  Medical Laboratory Technology – Polansky Lynch’s Medical Laboratory Technology -Raphael	
Jan 30 – Feb 2, 2024 (Day Order 1 to 4)	<b>Unit 3</b>  Blood groups and Rh types  Transfusion of Blood and Blood Components - Tests for Compatibility	Lecture  Power Point Presentation  Testing blood in the lab for blood group and Rh	Baker and Silverton’s Introduction to Medical Laboratory Technology – Baker, Silverton and Pallister  Lynch’s Medical Laboratory Technology - Raphael	Oral Quiz
Feb 3, 2024 (Day Order 2)	<b>Unit 3</b>  Blood Coagulation: Factors - Process and Theory - Bleeding Time - Clotting Time - Prothrombin Time	Power Point Presentation  Demo - estimating prothrombin time	Baker and Silverton’s Introduction to Medical Laboratory Technology – Baker, Silverton and Pallister	Discussion
Feb 5- 6, 2024 (Day Order 5 to 6)	<b>Unit 4</b> <b>Pathology</b>  Urine – macroscopic, microscopic and chemical analysis	Lecture   Power Point Presentation	Lynch’s Medical Laboratory Technology – Raphael Baker and Silverton’s Introduction to Medical Laboratory Technology – Baker, Silverton and Pallister	Recapitulation
Feb 7 – 14, 2024 (Day Order 1 to 6)	<b>Unit 4</b>  Examination of Blood Smear	Power Point	Baker and Silverton’s Introduction to Medical Laboratory Technology	Questioning

	for Malarial Parasites and Microfilariae  Motion analysis for common protozoan and helminthic intestinal parasites	Presentation	– Baker, Silverton and Pallister	
Feb 15 – 22, 2024 (Day Order 1 to 6)	<b>Unit 4</b> Analysis of Cerebrospinal Fluid  Analysis of Seminal Fluid	PowerPoint Presentaion	Medical Laboratory Technology , Methods and Interpretations – Sood	Small Test
Feb 23 – 24, 2024 (Day Order 1 & 5)	<b>Unit 4</b> Mode of Infection, Pathological changes and Symptoms of Acquired Immuno Deficiency Syndrome (AIDS) And Hepatitis	PowerPoint Presentaion	Baker and Silverton’s Introduction to Medical Laboratory Technology – Baker, Silverton and Pallister	Quiz
Feb 26 – Mar 1, 2024 (Day Order 2 to 6)	<b>Unit 4</b> Mode of Infection, Pathological changes and Symptoms of Tuberculosis (TB)	PowerPoint Presentaion	Baker and Silverton’s Introduction to Medical Laboratory Technology – Baker, Silverton and Pallister	
Mar 2, 2024 (Day Order 1)	<b>Unit 5</b> <b>Clinical Tests</b> Blood Glucose - Ranges in Health and Disease and Interpretation	Demo	Medical Laboratory Technology, Methods and Interpretations – Sood	Quiz  Discussion
Mar 4 –8, 2024	<b>C.A. Test – II</b>			
Mar 9 – 16, 2024 (Day 6 & Day Order 1 to 6)	<b>Unit 5</b> Blood Urea - Ranges in Health and Disease and Interpretation  Total Serum Cholesterol Estimation - Ranges in Health and Disease and Interpretation  Physiology and biochemistry of serum enzymes – Aspartate Transaminase (AST) and Alanine Transaminase (ALT)	Lecture  Demo  Demo	Medical Laboratory Technology, Methods and Interpretations – Sood  Baker and Silverton’s Introduction to Medical Laboratory Technology – Baker, Silverton and Pallister	Discussion  <b>March 15 – Component Case Study and Quiz</b>

<p>Mar 18 - 19, 2024 (Day Order 2 to 3)</p>	<p><b>Unit 5</b>  Laboratory Pregnancy Tests PAP Smear and its Significance</p>	<p>Power Point presentation  Lecture  Pregnancy Card demo</p>	<p>Baker and Silverton's Introduction to Medical Laboratory Technology – Baker, Silverton and Pallister</p>	
<p>Mar 20-22, 2024 (Day Order 4 to 6)</p>	<p><b>REVISION</b></p>			