**Post Graduate Govt. College for Girls, Sector-42, Chandigarh**

**Teaching Plan (Even Semester) Session (2022-23)**

**Class: BSc micro 2ndSem**  **Name of the Teacher:AkashdeepSandhu**

**Subject: Microbiology Period:3**

**Paper: A & B Room No: 105**

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| **S. No** | **Dates** | **Topics to be Covered** |
| Week 1 | 16/01/2023 –  21/01/2023 | Microscopic examination of micro-organism, bright field microscopy, dark field microscopy, phase contrast microscopy and electron microscopy. |
| Week 2 | 23/01/2023-  28/01/2023 | Staining of microbes, theory of Gram staining. |
| Week 3 | 30/01/2023-  04/02/2023 | Animal Viruses: Morphology, cultivation and viral disease cycle. |
| Week 4 | 06/02/2023-  11/02/2023 | Bacteriophages: Morphology, multiplication, detection and enumeration. |
| Week 5 | 13/02/2023-  17/02/2023 | Biotransformation of  D-Sorbitol to L-Sorbose.  Antibiotics. Steroids. |
| Week 6 | 20/02/2023-  25/02/2023 | Genetic engineering for human welfare:  Production of pharmaceuticals. |
| Week 7 | 27/02/2023-  04/03/2023 | Insect pest control.  Use of Genetically Engineered Microorganisms (GEMs) for control of pollution. |
| Week 8 | 06/03/2023-  11/03/2023 | Microbial Growth: Growth in population, bacterial growth curve, mathematical nature and expression. |
| Week 9 | 13/03/2023-  18/03/2023 | Factors affecting growth in microorganisms.Methods for measurement of growth in microorganisms. |
| Week 10 | 20/03/2023-  25/03/2023 | Mechanisms of enzymes action. Inhibition, control and regulation of enzyme activity. |
| Week 11 | 27/03/2023-  01/04/2023 | Enzyme kinetics: Michaelis-Menten equation.  Microbial Metabolism:  Catabolism of lipids and proteins.  Beta oxidation |
| Week 12 | 03/04/2023-  08/04/2023 | Electron transport chain.  Biochemical mechanisms of generation of ATP.  Microbial Utilization of Energy & Biosynthesis:  Transport of nutrient by bacteria |
| Week 13 | 10/04/2023-  15/04/2023 | Synthesis of Amino Acids: Glutamate, lysine, glutamine, serine, arginine family. Structures and biosynthesis of cell wall peptidoglycan |
| Week 14 | 17/04/2023-  21/04/2023 | Biosynthesis of Carbohydrates (gluconeogenesis) & Phospholipids. |
| Week 15 | 24/04/2023-  29/04/2023 | Replication of DNA molecules, Transcription & Translation (process of protein synthesis). |

**Post Graduate Govt. College for Girls, Sector-42, Chandigarh**

**Teaching Plan (Even Semester) Session (2022-23)**

**Class: BSc Micro IV Sem**  **Name of the Teacher:AkashdeepSandhu.**

**Subject: Microbiology Period: 4**

**Paper:A & B Room No: 105**

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| **S. No** | **Dates** | **Topics to be Covered** |
| Week 1 | 16/01/2023 –  21/01/2023 | Primary and secondary lymphoid organs, Mucosa associated lymphoid tissues (MALT), Cutaneous associated lymphoid tissues (CALT), |
| Week 2 | 23/01/2023-  28/01/2023 | Lymphocyte traffic, Cells of Immune system, |
| Week 3 | 30/01/2023-  04/02/2023 | Antigens; Factors affecting Immunogenicity, Epitopes, Haptens |
| Week 4 | 06/02/2023-  11/02/2023 | Antigenic combining regions of antibodies, Factors influencing antibody production |
| Week 5 | 13/02/2023-  17/02/2023 | Genetic model, Multigene organization, Generation of antibody diversity |
| Week 6 | 20/02/2023-  25/02/2023 | Antigen-antibody Interactions: Widal test, Wasserman’s test, Weil-Felix reaction, Western blotting, Types of Vaccines |
| Week 7 | 27/02/2023-  04/03/2023 | Origin of normal flora, Germ free and gnotobiotic life, Distribution and occurrence of Normal flora of skin, eye, |
| Week 8 | 06/03/2023-  11/03/2023 | respiratory tract, mouth, intestinal tract and genitourinary tract |
| Week 9 | 13/03/2023-  18/03/2023 | Antibacterial drugs viz. sulphonamides, Quinolones, Penicillins, Cephalosporins, Tetracyclines, Erythromycin, and Chloramphenicol |
| Week 10 | 20/03/2023-  25/03/2023 | Virulence and mode of transmission, Emerging and reemerging infectious diseases |
| Week 11 | 27/03/2023-  01/04/2023 | Global travel and health considerations, Nosocomial infections |
| Week 12 | 03/04/2023-  08/04/2023 | Events in infection following penetration, Microbial virulence factors |
| Week 13 | 10/04/2023-  15/04/2023 | Cell Mediated Immune System (CMI), Mechanism of CMI, Types of effector T cells, Helper T cells, Suppressor T cells, Cytotoxic T cells, Killer T cells |
| Week 14 | 17/04/2023-  21/04/2023 | Interactions between T and B lymphocytes |
| Week 15 | 24/04/2023-  29/04/2023 | Drug resistance, Antifungal and antiviral drugs |

**Post Graduate Govt. College for Girls, Sector-42, Chandigarh**

**Teaching Plan (Even Semester) Session (2022-23)**

**Class: BSc micro 6 Sem**   **Name of the Teacher:AkashdeepSandhu**

**Subject: Microbiology Period: 2nd Mon to wed & 5th Thu to Sat**

**Paper: A & B Room No: 105**

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| **S. No** | **Dates** | **Topics to be Covered** |
| Week 1 | 16/01/2023 –  21/01/2023 | Introduction to important diseases caused by *Shigella, Salmonella.* The operative mechanisms, laboratory diagnosis, prevention and control of these diseases. |
| Week 2 | 23/01/2023-  28/01/2023 | *Vibrio, Yersinia*. The operative mechanisms, laboratory diagnosis, prevention and control of these diseases. |
| Week 3 | 30/01/2023-  04/02/2023 | *Hemophilus*and*Mycobacterium.*The operative mechanisms, laboratory diagnosis, prevention and control of these diseases. |
| Week 4 | 06/02/2023-  11/02/2023 | Morphology, pathogenesis, life cycle, laboratory diagnosis, prevention and control of viral disease: Herpes |
| Week 5 | 13/02/2023-  17/02/2023 | Morphology, pathogenesis, life cycle, laboratory diagnosis, prevention and control of viral disease:HIV |
| Week 6 | 20/02/2023-  25/02/2023 | Morphology, pathogenesis, life cycle, laboratory diagnosis, prevention and control of viral disease: Influenza |
| Week 7 | 27/02/2023-  04/03/2023 | Qualitative and Quantitative analysis of food components (proteins, lipids, carbohydrates) |
| Week 8 | 06/03/2023-  11/03/2023 | Microbiologicalexamination of food products including dairy products, food poisoning caused by bacteria and fungi. |
| Week 9 | 13/03/2023-  18/03/2023 | Introduction to Human mycotic infections vizBlastomycosis, Opportunistic mycosis; Candidiasis and Aspergillosis. |
| Week 10 | 20/03/2023-  25/03/2023 | Life cycle, pathogenic mechanisms and control of parasitic infections: Ascariasis |
| Week 11 | 27/03/2023-  01/04/2023 | Filariasis. |
| Week 12 | 03/04/2023-  08/04/2023 | Hook worm. |
| Week 13 | 10/04/2023-  15/04/2023 | Fermentation media, Characteristics of Ideal production media, Common substrates used in Ideal fermentations, |
| Week 14 | 17/04/2023-  21/04/2023 | Batch and continuous fermentations |
| Week 15 | 24/04/2023-  29/04/2023 | Production of organic acids viz. acetic acid, lactic acid, propionic acid, butyric acid and mixed acids. Mass transfer in aerobic fermentations. |