**CURRICULUM PLAN**

**(Semester I, III & V 2024-25)**

**Name–** Dr. Manisha Arora Pandit

**Subject**- **DSC 9: Human Physiology: Life Sustaining Systems**

(02 Theory + 04 Practical); Sem III

**Practical Shared with-** Mr. Vikash Yadav

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| **Days** | **Units Covered/ To be covered** | **Topics** |
| 01/08/2024- 21/08/2024 | Unit 1: Physiology of Digestion | Overview of gastrointestinal tract and its associated glands; digestion; Absorption of carbohydrates, lipids, proteins; Hormonal control of secretion of enzymes in gastrointestinal tract. |
| 27/08/2024- 04/09/2024 | Unit 2: Blood | Structure and functions of haemoglobin; Blood clotting system, Fibrinolytic system. |
| 01/08/2024-12/09/2024 | Practical: | 1. Preparation of haemin and haemochromogen crystals. 2. Measurement and statistical analysis of variations observed in the student population in the class for the following parameters: a) Red blood cells using haemocytometer b) White blood cells using haemocytometer |
| 10/09/2024-01/10/2024 | Unit 3: Physiology of Heart | Structure of heart; Coronary circulation; Origin and conduction of cardiac impulses; Cardiac cycle; Cardiac output and its regulation; nervous and chemical regulation of heart rate.  **Assignment & Tests** |
| 08/10/2024-  25/10/2024 | Unit 4: Physiology of Respiration | Overview of respiratory system; Mechanism of respiration, Respiratory volumes and capacities; Transport of oxygen and carbon dioxide in blood; Dissociation curves and the factors influencing it; regulation of respiration. |
| 19/09/2024-24/10/2024 | Practical: | 1. Measurement and statistical analysis of variations observed in the student population in the class for the following parameters: a) Hemoglobin b) Blood pressure 2. Examination of histological sections of mammalian oesophagus, stomach, duodenum, ileum, rectum, liver, trachea, lung, kidney. 3. To study whole blood hemolysis with ammonium chloride solution. 4. To understand the components of blood, their functions and Hematopoiesis. 5. Study of Electrocardiogram; Analysis of ECG records and calculation of heart rate. |
| 05/11/2024-  27/11/2024 | Unit- 5: Renal Physiology | Structure of kidney and its functional unit; Mechanism of urine formation; Regulation of water balance; Regulation of acid-base balance. |
| 05/11/2024-  27/11/2024 | Practical: | 1. Detection of abnormal constituents in urine and their physiological significance. 2. Revision and Mock Practical |

**Name–** Dr. Manisha Arora Pandit

**Subject**- DSC 3; Concepts of Ecology (04 Practical); Sem I

**Shared with-** Dr. M. Rojina Devi

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| **Days** | **Units Covered/ To be covered** | **Topics** |
| 06/09/2024- 13/09/2024 | Practical: | 1. Study of an aquatic ecosystem: a) Phytoplankton and zooplankton b) Measurement of temperature, turbidity/penetration of light, determination of pH 2. c) Dissolved oxygen content (Winkler’s method), |
| 20/09/2024- 25/10/2024 | Practical: | 1. Study of an aquatic ecosystem: a) Free carbon dioxide and alkalinity 2. Determination of population density in a natural or a hypothetical community by quadrate method and calculation of Shannon-Weiner diversity index. 3. Study of life tables and plotting of survivorship curves of different types from hypothetical/ real data |
| 05/11/2024-26/11/2024 | Practical: | 1. Study of ten endemic animals of India with slides/pictures/videos. 2. Report on a visit to a National Park/Biodiversity Park/Wildlife Sanctuary. |

**Name–** Dr. Manisha Arora Pandit

**Subject**- Basic Lab Techniques (SEC) (02 Practical); Sem I

**Shared with-** Dr. Priyanka Dahiya

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| **Days** | **Units Covered/ To be covered** | **Topics** |
| 03/09/2024- 25/10/2024 | Practical: Unit 1 – Laboratory safety and standards  Unit 2– Preparation of solutions/ media | 1. Preparation of solution (w/w, w/v, Molar, Normal, Stock, standard and serial dilutions) 2. Preparation of buffer solution, pH scale, pH meter, Henderson-Hasselbalch equation, pK, (acetate/ phosphate buffer) |
| 04/11/2024- 25/11/2024 | Practical: Unit 3– Microbial Techniques | 1. Instrumentation (Microscopy, Laminar Hood, autoclave, shaker incubator, BOD incubator hot air oven) 2. Sterilization methods 3. Types of Microbial media: Microbial growth media: Minimal Media, Defined media, Complex media, Enriched media, Selective media, and Differential media. 4. Staining techniques for microbes |
| 28/11/2024- 09/12/2024 |  | Final Evaluation and Internal Assessment |

**Name–** Dr. Manisha Arora Pandit

**Subject**- Healthy and Sustainable Food Choices (SEC) (02 Practical); Sem III

**Shared with-** Dr. Neeti Pandey

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| **Days** | **Units Covered/ To be covered** | **Topics** |
| 01/08/2024- 12/09/2024 | Practical: Unit 1: Healthy food choices | 1. Food labels and basics of nutrient profiling models to classify foods as HFSS 2. Nutrient profiling of commonly consumed food items |
| 13/09/2024- 25/10/2024 | Practical: Unit 1: Healthy food choices  Unit 3: Basics of food preparation | 1. Exploring the food environment by mapping the food outlets and food available near home and college. 2. Planning and preparation of healthy and nutritious dishes |
| 04/11/2024- 25/11/2024 | Practical: Unit 3: Basics of food preparation | 1. Planning and preparation of the following:   -  Snacks  - Soups and Salads  -  Desserts  -  Meal combinations |
| 28/11/2024- 09/12/2024 |  | Final Evaluation and Internal Assessment |

**Name–** Dr. Manisha Arora Pandit

**Subject**- Ayurveda and Nutrition (VAC) (02 Theory); Sem I & III

**Shared with-** Dr. Gulshan Yadav

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| **Days** | **Units Covered/ To be covered** | **Topics** |
| 01/08/2024- 12/09/2024 | Unit- I Introduction to Ayurvedic Nutrition | • Ayurveda and Indian food cultures • Nutrition and lifestyle transition over the years • Regional Food Traditions of India |
| 13/09/2024- 25/10/2024 | Unit- II Basic principles of Food and Nutrition and Ayurveda  Unit- Ill Ayurvedic Diets | Understanding rich sources of nutrients • Concept of Doshas & assessment • Ayurvedic Principles of food habits and factors determining quality of food (Ahara vidhi visheshaayatana) • FSSAI regulations on Ayurvedic Aahar Planning and preparation of healthy and nutritious dishes. • Principles of Diet: Aharavidhi vidhan, Sattvic, Rajasi, Tamasic foods • Incompatible food (Viruddha Ahara), Pathya; Apathya; Viprita Ahaar |
| 05/11/2024-  20/11/2024 | Unit- Ill Ayurvedic Diets | • Lifestyle Management with Dincharya and Ritucharya • Application of Ayurvedic diets to stress linked food behaviour |

Dr Manisha Arora Pandit,

Assistant Professor,

Department of Zoology