<table>
<thead>
<tr>
<th>Paper Code</th>
<th>Courses</th>
<th>Revised syllabus</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basics of Physiology</td>
<td>Data, information, properties, Types of information. computing files, internet, server. Introduction to computer: Introduction to associated terms like CPU, storage devices, peripherals output &amp; input devices etc. MS WORD: Basic. Making new document, editing, formatting the text: text: border, color, spacing, copying the text, undo, redo, etc. Formatting: Paragraph alignment, line spacing, paragraph spacing, paragraph indent, Borders, paragraph border, shading. Spelling and grammar, COLUMN: typing text by defining columns, converting text to column &amp; columns to text. TABLES: selecting the table, insertion of raw columns text: merging the cell converting table to text and text to table insert date, time, foot notes header footer, end notes</td>
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<tr>
<td>Basics of Computer skills</td>
<td>LAB RECORDS: making, storage, annexes, management of histopathology records. Preparing and maintaining Lab records: Lab records. Human Healthcare and Safety regulations: Basic causes of accidents, common types of laboratory accidents. First aid in lab. Human health and Homeostasis, medical care in India, Medical Laboratories of developing countries, Importance of Biomedical Waste, NABL and SOP</td>
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<tr>
<td>Basics of Laboratory Techniques</td>
<td>Basic Lab equipments: Identification, use, maintenance and care of common laboratory glassware and equipments, handling of all glassware: use, principle and care of centrifuge, colorimeter, oven, incubator, microscope, Newber's chamber, AUTOCLAVE etc. Automation: Semi-automatic analysers. Reagent preparation: The metric system, preparation of molar, normal, percent solutions Buffers, Acid, Base, PH (Definition and examples) Lab calculations and graphs. Organization of Lab: Functional components of clinical laboratories: cleanliness, precautions to be taken WRT patients, reports, analysis. Communication between physician patients, and the medical laboratory professional, basic needs of clinical laboratory technician, awareness of soft skills. Quality control:</td>
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<tr>
<td>F4</td>
<td>HSC122</td>
<td>Hematology and Blood Banking</td>
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<td>Screening of sickle cell anaemia, Estimation of foetal haemoglobin, Haemoglobin electrophoresis, Osmotic fragility test, Heinz body preparation, Laboratory diagnosis of protozoan blood parasites, Lupus erythematosus (LE) cell preparation, Preparation of bone marrow smear for microscopic examination, Cytochemical tests.</td>
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<td>Interpretation of laboratory findings in Haematology, Anaemias, Leukaemias, Miscellaneous disorders.</td>
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<td>Introduction to Haematosis and Coagulation, Heamostasis, Mechanism of blood coagulation, Fibrinolysis.</td>
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<td>Laboratory Investigation and Bleeding Disorders, Laboratory preparation for coagulation tests, Routine coagulation tests, Prothrombin time, Plasma recalcification time, Partial thromboplastin time, Thrombin time, Laboratory diagnosis of bleeding disorders.</td>
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<td>Principles of Immunohaematology and Clinical Significance of Blood Transfusion, Principles of immunohaematology, Human blood group systems, Basic ABO blood group systems, Clinical significance of blood transfusion.</td>
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<td>Routine Laboratory Procedures in Blood Bank, Specimen collection for blood bank, General laboratory reagents in blood bank, Preparation of laboratory reagents in blood bank, Reporting of haemagglutination reaction, ABO blood grouping, Rh blood typing, Anti-human globulin (AHG) or crossmatching.</td>
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<td>Transfusion reactions and Haematotoxic Disease of the Newborn, Blood transfusion process, Transfusion reaction, Haemolytic disease of the newborn.</td>
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<td>Auto-analysis - Electrolyte acid base balance.</td>
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<tr>
<td>F5</td>
<td>HSC123</td>
<td>Microbiology and Serology</td>
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<td>Introduction to Microbiology, Disease oriented microbiology, culture &amp; sensitivity test, Aerobic, anaerobic tech.</td>
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<td>Diagnostic microbiology and Microbiological Techniques, Role of microbiology, laboratory, specimen handling, Laboratory records, Safety Regulations, Basic procedures of Diagnostic Rapid and automation methods in Diagnostic Microbiology, Culture environments of microbes, Quality control in microbiology, Quick reference of media and biochemical tests.</td>
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<td>Bacteriology, Gram positive - streptococcus, staphylococcus, bacillus, mycobacterium, Corynebacterium, Gram negative - E-Coli, Klebsiella, Salmonella, Shigella, Vibrio, Pseudomonas.</td>
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<td>Diagnostic and Systemic Bacteriology, Staphylococcus, Streptococcus, spirochaetes, mycoplasma, rickettsiae etc, Systematic grouping of pathogenic bacteria, Laboratory identification of infectious agents, Diagnosis of anaerobic infections, Identifying characteristics of common pathogenic bacteria, Antimicrobial susceptibility test, IMVIC, Urease, catalase, Gelatin liquefaction, Coagulase, oxidase, sugar fermentation, Antibiotic sensitivity test.</td>
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<td>Laboratory diagnosis of Mycotic Infections, Introduction to fungi and parasitic fungi, Specimen collection, Laboratory diagnosis of mycotic infections, Diagnostic mycology.</td>
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<td>Parasitology, Introduction, Protozoa, Helminths, Medical Entomology.</td>
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<td>Laboratory diagnosis of Parasitic Infections, Collection and handling of faecal specimen, Laboratory techniques in parasitological investigation of stool, Processing of specimens other than stool, Lab identification of human parasites.</td>
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<td>Introduction to Serology and Serological Procedures, Principles of immunological reactions, Serodiagnosis.</td>
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<td>Laboratory Procedures in Serology, Collection and preparation of specimen, Serological test for syphilis (STS), Agglutination tests, C-reactive protein test, Rheumatoid arthritis test (RA), Serodiagnosis of streptococcal infection, Serodiagnostic tests for miscellaneous disorders, Immunologic test for pregnancy RIA, ELISA.</td>
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<tr>
<td>P6</td>
<td>HSC124</td>
<td>Clinical Pathology and Biochemistry</td>
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<td>Laboratory Examination of Miscellaneous Body Fluids - CSF, synovial fluid, Cerebrospinal fluid, Laboratory investigation, Serous fluids, Synovial fluid.</td>
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<td>Normal and Abnormal Biochemical Processes of the Body, Basic physiology and biochemistry of the body, interrelated metabolic processes of the body, Functions of various organs and their clinical assessment, Biochemical changes in the body under pathological conditions.</td>
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<td>Routine Biochemical Tests, Phosphatases, transaminases, lactate dehydrogenase, Creatine kinase, Electrolytes, Blood gases and bicarbonate, Determination of serum/plasma bicarbonate.</td>
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<td>Biochemical Test Profile, Liver tests, Renal tests, Endocrine function tests, Lipid profile, Transaminase, LDH, CPK, CPK-MB, SGPT/SGOT, Amylase, GTT.</td>
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<td>Principles of Analytical Techniques, Basic steps in analytical chemistry, titrimerity photometry, Electrochemistry, Immuno - chemistry, Separation and analysis of organic compounds.</td>
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<tr>
<td>P8</td>
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<td>Histology-Cytology: Introduction to Histology and Cytotechnology: Basic terminology, Laboratory equipment for histology and cytology, Use and care of frequently used equipment, Preparation of reagent solutions. Laboratory Techniques in Histology: Logging of specimen, preparation of tissues, processing of tissues Routine staining procedure in histotechnology, special stains and staining techniques, stains for particular substances, Frozen section technique, Handling and embedding of small tissue fragments. Laboratory Techniques in Diagnostic Exfoliative Cytology: Preparation of specimens for cytological evaluation, Cytological stains and staining techniques, Characteristics of benign and malignant cells.</td>
</tr>
<tr>
<td>P9</td>
<td>HSC128</td>
<td>Parasitology and blood cell disorders: Medical Parasitology: Common intestinal worms, Malarial parasites, Filarial parasites, Laboratory Diagnosis of Parasitic infections. Descriptive study of RBC abnormalities, Disorders related to RBC, Normal white cell count and physiological variation. Project work and Internship.</td>
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