ACADEMIC SCHEDULE OF PATHOLOGY

3RD SEMESTER

(Cell Injury, Inflammation, Hemodynamic Disturbance, Genetics, Immunity, Neoplasia, Infectious , Environment & Nutritional Disease)

Total duration- 15 Weeks **Teaching hours- 77 Hour**

Week	Lecture - 1	Lecture - 2	Lecture - 3	Practical
1	**Introduction of Pathology - 1** **Role of Pathologist** in Diagnosis & Management of Disease. Role of Artificial Intelligence in Pathology.	**Introduction of Pathology - 2** Scientific study of disease **History & Evolution of Pathology.** -Etiology, Pathogenesis & Morphology of Diseases discussion	Cause, mechanism, types & effect of **Cell injury** & clinical significance. Difference between **Reversible & Irreversible cell injury.** **Mechanism** of cell injury. **Morphology** of reversible cell injury.	**Type of Microscopy** **Blood collection in Pathology**
2	**Cell Death** – Irreversible cell injury. **Necrosis & Apoptosis** – Types, Example, morphology & Pathogenesis	**Intracellular accumulation** of Fat, proteins, carbohydrate & Pigments.	**Pathological Calcification & Gangrene**.	**H & E Staining** in Pathology. Methods of staining
3	Definition & Features of Inflammation. Vascular & cellular events in **Acute Inflammation**. **Phagocytosis**.	**Chemical Mediators of Inflammation**	**Chronic Inflammation** Etiology, Types & Example.	Forms of **Cell Injury**. Consequences of cell injury in gross & microscopic appearance
4	Process of Repair. **Wound Healing** & pathological aspects. -Keloid & Hypertrophic scar	**Edema, Hyperaemia & Systemic Congestion.** **CVC Spleen, Liver & Lung.**	Normal Haemostasis & **Thrombosis.** **Embolism.**	**Acute Inflammation** .
5	**Infarction & Shock.**	Patterns of inheritance and **molecular diagnosis** of genetic disorders	Disorders due to **genetic defects in structural, enzyme and receptor**	**Hemodynamic Disturbance**.

ACADEMIC SCHEDULE OF PATHOLOGY

			proteins	
6	**Cytogenetic disorders** and Trinucleotide repeat disorders	Principle, mechanism & types of **immunity**	**Hypersensitivity reaction**	**Tissue Processing** & Fixatives
7	**HLA system** & transplant rejection	**Autoimmunity** & Tolerance, SLE	Immunodeficiency disorder & **HIV AIDS**	**FNAC** & other diagnostic procedure in cytology
8	**Amyloidosis**	1. Definition, Classification, and **Nomenclature of Tumors**. 2. Biology, Behavior and Spread of the Tumor. 3. Differences between Benign & Malignant Tumors.	**Molecular basis of cancer** Outline. 1. Self-Sufficiency in Growth Signals: Oncogenes. 2. Insensitivity to Growth Inhibition: Tumor Suppressor Genes	**Chronic Inflammation**. Pathological aspects of **Wound repair**
9	**MIDSEMESTER**	**Molecular basis of cancer** 3. Growth –Promoting Metabolic Alterations: The Warburg Effect 4. Evasion of Cell Death, 5. Limitless replicative potential: The stem cell-like properties of cancer cells 6. Angiogenesis	**Molecular mechanism** of Invasion and Metastasis	**Benign Tumors**
10	**Evasion of Immune Surveillance** by cancer cells. Dysregulation of cancer –Associated Genes.	Carcinogens- Outline. Process of Carcinogenesis with special Emphasis on **Chemical Carcinogenesis**	**Radiation and Microbial carcinogenesis**	**Malignant tumor**
11	Effect of Tumor on host including **Paraneoplastic syndrome** Outline **grading & staining** of tumor.	**Formative Assessment of Genetics, Immunity & Neoplasia**	Pathology of **Malaria and Leishmaniasis**	**Body Fluid Examination** Difference between transudate & exudate
12	Metazoal Infections with Special Emphasis on	Pathology of **Leprosy**	**Bacterial** Infection – Gram-Positive Bacterial Infections	**Infectious disease**

ACADEMIC SCHEDULE OF PATHOLOGY

	Cysticercosis and Hydatid Disease		Gram-Negative Bacterial Infections Spirochete Infections Chlamydia & Clostridial infections Pathology of Fungal Infection	
13	**Viral Infections, Rickettsia Infections**	Pathological Effects & Pathogenesis of disorder of **Alcohol and Tobacco**	Pathological effects & Pathogenesis of disorder **of PEM & Starvation**	**ESR Estimation** techniques & interpretation
14	Pathogenesis & Consequences of **Obesity**	**Haematopoiesis, Role of Anticoagulant in Haematology**	Definition, Classification & Investigation of **Anemia**	**Hb Estimation**
15	Outline of Iron Metabolism. Classification, Investigations, PS findings & Differential diagnosis of **Microcytic Hypochromic Anemia**	Outline of B12 Metabolism. Etiopathogenesis, Lab investigations & Peripheral Blood finding of **Macrocytic Anemia**	Definition, Classification, Key clinical features & Peripheral Blood findings in case of **Haemolytic Anemia**	**Peripheral smear examination & Anemia** **Differential WBC Count**

Didactic Lectures	45	45 Hours
SGD	01	02 Hour
Practical Sessions	15	30 Hour

4th Semester

(Hematology, Cardiovascular Disease, Leukocyte & Lymph node Disorder, RBC Disorder, Respiratory Pathology, Blood Vessel, GIT, Liver, Renal System)

Total duration- 20 weeks **Teaching hours- 102 hour**

ACADEMIC SCHEDULE OF PATHOLOGY

Week	Lecture - 1	Lecture - 2	Lecture - 3	Practical
1	Etiopathogenesis, Lab investigations, Peripheral smear findings & Bone marrow findings in case of **Aplastic Anemia**	Leucocytosis, Leukopenia & **Leukemoid reaction**		**Leukaemia & MDS**
2	Etiopathogenesis, Genetics, classification & Haematological features of **Acute leukaemia**	Etiopathogenesis, Genetics, classification & Haematological features of **Chronic leukaemia**	Pathology of Plasma cell myeloma	**Total Leukocyte count** **Toral RBC Count**
3	Pathology of **Tuberculous lymphadenitis**	Etiopathogenesis, Pathology & differentiating features of Hodgkin's **Lymphoma** Differential diagnosis of **splenomegaly**		**Lymphoma Pathology**
4	Etiopathogenesis, Pathology and Lab findings of Vascular & Platelet disorder including **ITP & Haemophilia**	Etiopathogenesis, Lab Findings, Pathology in case of **DIC**	**Non-Hodgkin's Lymphoma**	**Approach to case of bleeding disorder**
5	**Acquired Haemolytic anemia with special emphasis on immune haemolytic anemia**	Formative Assessment		**Approach to haemolytic anemia**
6	Etiology, types, pathogenesis, stages, morphology and complications of **Pneumonia.**	Etiology, types, exposure, environmental influence, pathogenesis, stages, morphology, microscopic appearance and complications of **Occupational lung disease.**	**Lung Abscess & Bronchiectasis** Etiology, Pathogenesis & Morphology.	**TB Lymphadenitis**
7	Etiopathogenesis, exposure, genetics environmental influence, stages, morphology, microscopic appearance, metastases and complications of **Tumors of the lung**	Arteriosclerosis Vs atherosclerosis. Pathogenesis and pathology of various causes and types of **arteriosclerosis.**		**Respiratory Pathology**

ACADEMIC SCHEDULE OF PATHOLOGY

	and pleura. Etiopathogenesis, types, exposure, genetics environmental influence, morphology, microscopic appearance and complications of mesothelioma.			
8	Etiology, dynamics, pathology types and complications of **aneurysms** including aortic aneurysms	Etiology, pathophysiology, pathology, gross and microscopic features, criteria and complications of **rheumatic fever**	Epidemiology, risk factors, Etiology, pathophysiology, pathology, presentations, gross and microscopic features, diagnostic tests and complications of **ischemic heart diseases**	MIDSEMESTER
9	Etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of **Infective endocarditis**	**Heart Failure**		**Cardiovascular Pathology**
10	**Pericarditis & Pericardial Effusion**	**Cardiomyopathy**	MIDSEMESTER	**Special Test in Haematology**
11	Etiopathogenesis, pathology, microbiology, clinical and microscopic features of **Peptic ulcer disease**	Etiopathogenesis and pathologic features of **Carcinoma of the stomach**		**Disease of Alimentary system 1**
12	Etiopathogenesis and pathologic and distinguishing features of **Inflammatory bowel disease**.	Etiopathogenesis, pathology and distinguishing features of **carcinoma of the colon**	Etiopathogenesis and pathologic features of **Tuberculosis of the intestine**.	**Disease of Alimentary system 2**
13	Etiopathogenesis, pathology and clinical features of **oral cancers**	Etiology and pathogenesis of viral and toxic **Hepatitis**: distinguish the causes of hepatitis based on the clinical and laboratory features.		**Liver Function test**

ACADEMIC SCHEDULE OF PATHOLOGY

		Pathology, complications and consequences of hepatitis		
14	Pathophysiology, pathology and progression of **Alcoholic liver disease** including cirrhosis	**Inherited Liver Disease, Liver tumour**	Hepatic Failure	**Liver Pathology Morphology**
15	Portal Hypertension	**Exocrine Pancreatic Cancer**		**Semen analysis**
16	**Normal Kidney Histology.** **Acute & Chronic Renal Failure.**	Define and classify **glomerular diseases**. Etiopathogenesis, pathology, distinguishing of **glomerulonephritis** with special emphasis on **PSGN.**	Etiopathogenesis, pathology, laboratory, urinary findings, progression and complications of **IgA nephropathy.**	**Renal function test (SGD)**
17	**Membranous Nephropathy, Minimal change disease, FSGS, MPGN, RPGN**	**Glomerular manifestation** Morphology of **systemic diseases** with clinical features		**Blood Grouping**
18	Findings in glomerular manifestations of systemic disease. Diseases affecting the tubular interstitium. **Acute Tubular Necrosis.**	Etiopathogenesis, pathology, laboratory findings, distinguishing features progression and complications of **Acute and chronic pyelonephritis** and reflux nephropathy	**Cystic disease of kidney**	**Splenomegaly**
19	**Renal Stone disease & Obstructive Uropathy**	Etiopathogenesis, Clinical features & Morphology of **Renal Tumours**.		**Urine Examination**
20	Etiopathogenesis pathology, laboratory, urinary findings, distinguishing features progression and complications of **vascular disease of the kidney**.	**Urothelial Tumours**	Formative Assessment	**Renal Pathology**

Didactic Lectures	50	50 Hours

ACADEMIC SCHEDULE OF PATHOLOGY

SGD	01	02 Hour
Practical Sessions	20	40 Hour
Integrated Lecture	05	10 Hour

Integrated Lecture List

1.Malaria.
2.Sickle cell, Thalassemia.
3.Hyperbilirubinemia Jaundice.
4.Thyroid Swelling.
5.Obstructive Lung disease – Emphysema & Chronic Bronchitis

5th Semester

(Male Genital System, Female Genital System, Breast, CNS, Soft tissue, Musculoskeletal System, Endocrine & Blood Banking, Skin, Miscellaneous.)

Total duration- 14 Weeks **Teaching hours- 92 hours**

Week	Lecture - 1	Lecture - 2	Lecture - 3	Practical
1	**BPH Pathology**	**Prostate carcinoma Pathology**	**Etiology, Pathogenesis & Morphology of Testicular tumours**	**Male GUT Pathology**
2	**Carcinoma Penis Pathology**	**Endometrial hyperplasia & carcinoma Pathology**	**Leiomyoma, leiomyosarcoma, GTD Pathology**	**Female GUT Pathology**
3	**Cervicitis, Endometriosis, Adenomyosis Pathology**	Pathology of **Benign Breast Disease & stromal benign tumor of breast**	Pathology of **Carcinoma Breast**	**CNS Pathology**
4	**Gynecomastia Pathology**	Etiopathogenesis, Classification, Clinical feature, Pathology of **Osteomyelitis**	Etiopathogenesis, Classification, Clinical feature,	**Bone marrow aspiration & biopsy**

ACADEMIC SCHEDULE OF PATHOLOGY

			Pathology of **Bone Tumours**	
5	Etiopathogenesis, Classification, Clinical feature, Pathology of **soft tissue tumours** Etiopathogenesis, Classification, Clinical feature, Pathology of **Rheumatoid arthritis & osteoarthritis**	**Metabolic Bone diseases Pathology**	**Paget Disease Pathology**	**Bone Pathology**
6	Etiopathogenesis, Clinical feature, Pathology of **Squamous cell carcinoma**	**Basal cell carcinoma Pathology**	Etiopathogenesis, Clinical feature, Pathology of **Nevus and melanoma**	**Skin Pathology**
7.	Etiopathogenesis, Clinical feature, Classification & Pathology of **CNS Tumours**	Etiopathogenesis, Clinical feature, GENETICS & Pathology of **Retinoblastoma**	**Muscular dystrophy and Nerve tumours**	**CSF Examination**
8.	**Hyperparathyroidism Hypoparathyroidism Pathology**	**Adrenal insufficiency & Cushing syndrome Pathology**	**Adrenal Neoplasm Pathology**	**Endocrine disorder**
9.	**Blood Components Blood transfusion Reaction**	**Blood Group System** **Cross Match of Blood**	**Flow cytometry Haematology Analyzer**	**Thyroid Function Test**
10.	**FISH, PCR, NGS**	**IHC & Immunofluorescence**	Electrophoresis & it's types. **Serum & Urine protein electrophoresis**.	**Instruments** in Pathology
11.	**High Performance Liquid Chromatography** application in pathology	**Tumours of infancy and childhood**	**Soft tissue tumor pathology**	**Interpretation of Various Reports**
12.	**Vasculitis Pathology**	Autoimmune disease especially **SLE**	**Cell aging**	**Exfoliative Cytology**
13.	**Syphilis** Pathology	**Revision**	**Revision**	Revision
14.	**Revision**	**Revision**	**Revision**	Revision

Didactic Lectures	42	42 Hours
SGD	01	02 Hour
Practical Sessions	14	28 Hour
Integrated Lecture	03	06 Hour

ACADEMIC SCHEDULE OF PATHOLOGY

Tutorials	06	12 Hour

List of Tutorial Topic

1.Artificial Intelligence in Pathology 2.Hemolytic Anemia 3.Differentiating features of Lymphadenopathy 4.Viral Hepatitis Pathology 5.Special stains used in cytopathology & histopathology 6.Leukemia

List of Integrated Lecture

1.Daibetes
2. Meningitis
3.Carcinoma Cervix
4.Oral Squamous cell carcinoma