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MGM INSTITUTE OF HEALTH SCIENCES

Accredited by NAAC with 'A' Grade

(Deemed University u/s 3 of UGC Act, 1956)

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COMPETENCY BASED MEDICAL EDUCATION (CBME)

(With effect from 2019-20 Batches)

Curriculum for Second M.B.B.S Pathology

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Registrar

MGM Institute of Health Sciences
(Deemed University u/s 3 of UGC Act, 1956)
Navi Mumbai- 410 209

Approved as per BOM -57/2019, [Resolution No. 3.1.2.2], Dated 26/04/2019

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Annexure Item 3

1. **Item:**Restructuring the 2nd MBBS syllabus in line with Competency based medical education (CBME) guidelines by MCI

- MCI has proposed the following teaching hours for 2nd Professional YR (MBBS) subjects

Subjects	Lectures (Hours)	Small Group Teaching / Tutorials / Integrated Learning / Seminars / Practical (Hours)	Clinical Postings (Hours)	Self directed learning (Hours)	Total (Hours)
Pathology	80	138		12	230
Pharmacology	80	138		12	230
Microbiology	70	110		10	190
Community Medicine	20	30		10	60
Forensic Medicine and Toxicology	15	30		5	50
Clinical Subjects	75		540		615
Professional Development including Ethics (AETCOM etc.)		29		8	37
Sports and Extracurricular activities					28
Formative assessment and term examinations					?
Total					1440

CBME UG CURRICULUM (II-MBBS)

Pathology

Lectures	Practical//Tutorials/Integrated Learning /Seminars / Small group teaching	SDL	TOTAL
80 hrs	138 hrs	12 hrs	230 hrs

Pathology

	Hrs
Lectures	80
Integrated	26
Small group Discussions	14
Tutorials	18
Seminars	18
DOAP/ Practicals	62
SDL	12
Total :	230 hrs

	Sr. No.	COMPETENCY The student should be able to	Suggested Teaching Learning Method	Topics	Number of Hours
Topic: Introduction to Pathology	PA1.1	Describe the role of a pathologist in diagnosis and management of disease	Lecture	Introduction & Departmental orientation	1
	PA1.2	Enumerate common definitions and terms used in Pathology.		Introduction, history and evaluation. Common definitions in pathology and causes of cell injury.	
	PA 1.3	Describe the history and evolution of			

		Pathology			
Cell injury and Adaptation	PA2.1	Demonstrate knowledge of the causes, mechanisms, types and effects of cell injury and their clinical significance	Lecture	Modes of cell injury: Mechanisms of cell injury	1
	PA2.2	Describe the etiology of cell injury. Distinguish between reversible-irreversible injury: mechanisms; morphology of cell injury.	Lecture	Reversible cell injury: Definitions, cellular swelling, fatty change. Irreversible cell injury: Definition Necrosis: definitions & types	1
	PA2.3	Intracellular accumulation of fats, proteins, carbohydrates, pigments.	Lecture	Intracellular accumulations & alterations: Types of Intracellular accumulations with alterations in cell organelles & cytoskeleton.	1
	PA2.4	Describe and discuss Cell death- types, mechanisms, necrosis, apoptosis (basic as contrasted with necrosis), autolysis	Lecture	Apoptosis & its relevance. Difference Between Apoptosis and Necrosis	1
	PA 2.5	Describe and discuss pathologic calcifications, gangrene	Lecture	Calcification and Gangrene	1
	PA2.6	Describe and discuss cellular adaptations: atrophy, hypertrophy, hyperplasia, metaplasia, dysplasia.	DOAP session	Retogressive changes & disorders of cell growths	2

	PA2.7	Describe and discuss the mechanisms of cellular aging and apoptosis	Lecture	Cellular ageing and mechanism	1
	PA2.8	Identify and describe various forms of cell injuries, their manifestations and consequences in gross and microscopic specimens	DOAP session	Necrosis & gangrene	2
Amyloidosis	PA3.1	Describe the pathogenesis and pathology of amyloidosis	Lecture	Amyloidosis: Definition, physical & chemical nature of amyloid, classification, pathogenesis, morphology, lab diagnosis with special stain & clinical correlation.	1
	PA 3.2	Identify and describe amyloidosis in a pathology session.	DOAP session	Amyloidosis:morphology , lab diagnosis with special stain.	2
Inflammation	PA4.1	Define and describe the general features of acute and chronic inflammation including stimuli, vascular and cellular events	Lecture	Acute inflammation: Define & describe cellular & vascular changes. Outcomes & morphological patterns of acute inflammation.	1
	PA4.2	Enumerate and describe the mediators of acute inflammation	Lecture	Chemical mediators of inflammation: definition, classification, description of each type, role in acute & chronic inflammation.	1
	PA4.3	Define and describe chronic inflammation including causes,	Lecture	Chronic inflammation: definition & causes.Granulomatous	1

		types, non-specific and granulomatous; and enumerate examples of each		inflammation: etiology, pattern & systemic effects of granulomas.	
	PA 4.4	Identify and describe acute and chronic inflammation in gross and microscopic specimens	DOAP session	Acute inflammation ,Chronic inflammation & repair	2
Healing and repair	PA5.1	Define and describe the process of repair and regeneration including wound healing and its types	Lecture	Regeneration & repair: Healing by primary & secondary intention with local & systemic factors affecting wound healing. Repair in specialized tissue:	1
Hemodynamic disorders	PA6.1	Define and describe edema, its types, pathogenesis and clinical correlations	Lecture	Edema: Define, classify, pathogenesis & correlate morphology with clinical significance	1
	PA6.2	Define and describe hyperemia, congestion, hemorrhage.	Lecture	Hyperemia, congestion, hemorrhage.	1
	PA6.3	Define and describe shock, its pathogenesis and its stages	Lecture	Shock: Define, classify, pathogenesis, mediators & stages of shock.	1
	PA6.4	Define and describe normal haemostasis and the etiopathogenesis and consequences of thrombosis	Lecture	Thrombosis: Definition, etiopathogenesis, morphology, fate & effects of thrombosis.	1
	PA6.5	Define and describe embolism and its causes and common	Lecture	Embolism : Define types with clinical significance.	1

		types			
	PA6.6	Define and describe Ischaemia/infarction its types, etiology, morphologic changes and clinical effects	Lecture	Hyperemia & congestion ,Infarction: Define types with clinical significance.	1
	PA 6.7	Identify and describe the gross and microscopic features of infarction in a pathologic specimen	DOAP session	Circulatory disturbance	2
Neoplastic disorders	PA7.1	Define and classify neoplasia. Describe the characteristics of neoplasia including gross, microscopy biologic, behaviour and spread. Differentiate between benign from malignant neoplasms	Lecture	Nomenclature, classification & differentiation between benign & malignant neoplasms.Precancerous lesions.	1
	PA7.2	Describe the molecular basis of cancer.	Lecture	Molecular basis of cancer & Biology of tumor growth	1
	PA7.3	Enumerate carcinogens and describe the process of carcinogenesis	Lecture	Carcinogenesis	1
	PA7.4	Describe the effects of tumor on the host including paraneoplastic syndrome	Lecture	Tumor host interactions: Systemic effects & paraneoplastic syndromes.	1
	PA7.5	Describe immunology and the immune response to cancer	Lecture	Lab Diagnosis: Diagnostic workup including tumor markers..Spread, grading	1

				& staging. Tumor immunology	
Basic diagnostic cytology	PA8.1	Describe the diagnostic role of cytology and its application in clinical care	Tutorials	Cytology and its application (FNAC)	2
	PA 8.2	Describe the basis of exfoliative cytology including the technique & stains used.	Tutorials	Exfoliative cytology	2
	PA 8.3	Observe a diagnostic cytology and its staining and interpret the specimen.	DOAP session	Cytology and stains	2
Immunopathology and AIDS	PA9.1	Describe the principles and mechanisms involved in immunity.	Lecture	Principles and mechanisms involved in immunity.	1
	PA9.2	Describe the mechanism of hypersensitivity reaction.		Hypersensitivity reactions: Types & differentiate between different types of hypersensitivity reactions.	
	PA9.3	Describe the HLA system and the immune principles involved in transplant and mechanism of transplant rejection.	Seminar	Transplant rejections & HLA System	2
	PA9.4	Define autoimmunity. Enumerate autoimmune disorders.	Lecture	Autoimmune diseases: Mechanism of autoimmunity.	1

	PA9.5	Define and describe the pathogenesis of systemic Lupus Erythematosus.		Systemic Lupus Erythematosus	
	PA9.6	Define and describe the pathogenesis and pathology of HIV and AIDS.	Lecture	AIDS: Epidemiology, etiopathogenesis.	1
	PA9.7	Define and describe the pathogenesis of other common autoimmune diseases	Tutorials	Common autoimmune diseases.	2
Infections and infestations	PA10.1	Define and describe the pathogenesis and pathology of malaria	Integrated	Parasitic: Malaria: Types, morphological features in P. Vivax & Falciparum Malaria & lab diagnosis.	1
	PA10.2	Define and describe the pathogenesis and pathology of cysticercosis .	Small group Discussion	Leishmaniasis, Filariasis, Hydatid, Cysticercosis	1
	PA10.3	Define and describe the pathogenesis and pathology of leprosy	Integrated	Leprosy: Classify, pathogenesis, differentiate between different types of leprosy, histological features & sequelae.	1
	PA10.4	Define and describe the pathogenesis and pathology of common bacterial, viral, protozoal and helminthic diseases	Lecture	Typhoid fever: Pathogenesis, morphology & clinical features. Syphilis: Classify various stages, pathogenesis & morphology.	1
Genetic and paediatric diseases	PA11.1	Describe the pathogenesis and features of common cytogenetic	Small group Discussion	Cytogenetic abnormalities and mutations in childhood.	1

		abnormalities and mutations in childhood.			
	PA11.2	Describe the pathogenesis and pathology of tumor and tumour- like conditions in infancy and childhood	Seminar	Tumor and tumour- like conditions in infancy and childhood	2
	PA11.3	Describe the pathogenesis of common storage disorders in infancy and childhood	Seminar	Storage disorders in infancy and childhood	2
Environmental and nutritional diseases	PA12.1	Enumerate and describe the pathogenesis of disorders caused by air pollution, tobacco and alcohol	Seminar	Disorders caused by air pollution, tobacco and alcohol	2
	PA12.2	Describe the pathogenesis of disorders caused by protein calorie malnutrition and starvation	Seminar	Protein calorie malnutrition and starvation	2
	PA12.3	Describe the pathogenesis of obesity and its consequences	Integrated	Obesity	1
Introduction to haematology	PA13.1	Describe hematopoiesis and extramedullary hematopoiesis.	Lecture	Introduction to hematology & hemopoiesis	1
	PA13.2	Describe the role of anticoagulants in	DOAP session	Anticoagulants , Blood collection & Hb	2

		hematology		Estimation	
	PA13.3	Define and classify anemia.	Lecture	Anemia: classification and clinical features.	1
	PA13.4	Enumerate and describe the investigation of anemia			
	PA 13.5	Perform, Identify and describe the peripheral blood picture in anemia	DOAP session	PCV, ESR & Peripheral Smear	2
Microcytic anemia	PA14.1	Describe iron metabolism.	Lecture	Iron metabolism.	1
	PA14.2	Describe the etiology, investigations and differential diagnosis of microcytic hypochromic anemia		Nutritional anemia: Iron deficiency.	
	PA 14.3	Identify and describe the peripheral blood picture of microcytic anemia	DOAP session	Development of Blood & BM , Peripheral smear findings in microcytic anemia	2
Macrocytic anemia	PA15.1	Describe the metabolism of Vitamin B12 and the etiology and pathogenesis of B12 deficiency.	Integrated	Metabolism, etiology and pathogenesis of Vitamin B12	1
	PA15.2	Describe laboratory investigations of macrocytic anemia	Lecture	laboratory investigations in Folic acid/ Vit B12 deficiency anemia including pernicious anemia.	1
	PA 15.3	Identify and describe the peripheral blood picture of macrocytic	DOAP session	Peripheral smear findings in macrocytic anemia	2

		anemia.		&anemia Charts	
	PA15.4	Enumerate the differences and describe the etiology and distinguishing features of megaloblastic and non-megaloblastic macrocytic anemia	Tutorials	Megaloblastic and non-megaloblastic macrocytic anemia	2
Hemolytic anemia	PA16.1	Define and classify hemolytic anemia.	Integrated	Classification of hemolytic anemia.	1
	PA16.2	Describe the pathogenesis and clinical features and hematologic indices of hemolytic anemia	Lecture	Hemolytic anemia: Definition, classification, pathogenesis and investigations.	1
	PA16.3	Describe the pathogenesis, features, hematologic indices and peripheral blood picture of sickle cell anemia and thalassemia.	Lecture	Haemoglobinopathies: Thalassemia, Sickle cell anemia.	1
	PA16.4	Describe the etiology pathogenesis, hematologic indices and peripheral blood picture of Acquired hemolytic anemia	Lecture	Hereditary spherocytosis and G6PD deficiency	1
	PA16.5	Describe the peripheral blood picture in different hemolytic anaemias	Integrated	Peripheral blood picture in different hemolytic anaemias	1
	PA 16.6	Prepare a peripheral blood smear and identify hemolytic	DOAP session	PS Staining & Dfferential WBC count	2

		anaemia from it			
	PA16.7	Describe the correct technique to perform a cross match	DOAP session	Blood group estimation and correct technique to perform a cross match	2
Aplastic anemia	PA 17.1	Enumerate the etiology, pathogenesis and findings in aplastic anemia	Tutorials	Aplastic anemia	2
	PA17.2	Enumerate the indications and describe the findings in bone marrow aspiration and biopsy	DOAP session	Development of blood & bone marrow examination.	2
Leukocytic disorder	PA18.1	Enumerate and describe the causes of leucocytosis leucopenia lymphocytosis and leukemoid reactions	DOAP session	Total WBC Count / Leukemia/ Leucocytosis, leucopenia, Leukemoid reaction	2
	PA 18.2	Describe the etiology, genetics, pathogenesis classification, features, hematologic features of acute and chronic leukemia	Lecture	Acute leukemia: classification and diagnosis. Chronic leukemia: classification and diagnosis.	1
Lymph node and spleen	PA19.1	Enumerate the causes and describe the differentiating features of lymphadenopathy.	Small group discussion	Lymphadenitis: Non-specific	1
	PA19.2	Describe the pathogenesis and pathology of tuberculous lymphadenitis.		Lymphadenitis: granulomatous	
	PA 19.3	Identify and describe	DOAP	Lymphnode	2

		the features of tuberculous lymphadenitis in a gross and microscopic specimen	session		
	PA19.4	Describe and discuss the pathogenesis, pathology and the differentiating features of Hodgkin's and non-Hodgkin's lymphoma.	Lecture	Hodgkin's and non-Hodgkin's lymphoma.	1
	PA 19.5	Identify and describe the features of Hodgkin's lymphoma in a gross and microscopic specimen	DOAP session	Hodgkin's lymphoma in a gross and microscopic specimen and Tumor Pathology (Benign & Malignant tumors)	2
	PA19.6	Enumerate and differentiate the causes of splenomegaly.	Integrated	Diseases of spleen: Splenomegaly and effects	1
	PA 19.7	Identify and describe the gross specimen of an enlarged spleen	DOAP session	Gross specimen of an enlarged spleen & Leukemias	2
Plasma Cell disorders	PA 20.1	Describe the features of plasma cell myeloma	DOAP session	Plasma cell myeloma & other bone tumors	2
Hemorrhagic disorders	PA21.1	Describe normal hemostasis.	Lecture	Hemorrhagic disorders: Classify and lab. Screening tests for hemorrhagic disorders. Platelet deficiency, ITP & hemophilia	1
	PA21.2	Classify and describe the etiology, pathogenesis and pathology of vascular and platelet disorders including ITP and haemophilia's.			

	PA21.3	Differentiate platelet from clotting disorders based on the clinical and hematologic features.	DOAP session	Coagulopathies: Coagulation factor deficiency, DIC /Bleeding Disorders	2
	PA21.4	Define and describe disseminated intravascular coagulation, its laboratory findings and diagnosis of disseminated intravascular coagulation.	Integrated	DIC	1
	PA21.5	Define and describe disseminated intravascular coagulation, its laboratory findings and diagnosis of Vitamin K deficiency	Seminar	DIC & Vitamin K deficiency	2
Blood banking and transfusion	PA22.1	Classify and describe blood group systems (ABO and RH).	Lecture	Blood groups and its relevance in transfusion medicine and hematology. Erythoblastosis foetalis.	1
	PA22.2	Enumerate the indications, describe the principles, enumerate and demonstrate the steps of compatibility testing			
	PA22.4	Enumerate blood components and describe their clinical uses	Lecture	Blood Components & Autologous Transfusion	1
	PA22.5	Enumerate and describe infections transmitted by blood	Tutorials	Blood transfusion transmissible infections including HIV and	2

		transfusion.		hepatitis.	
	PA22.6	Describe transfusion reactions and enumerate the steps in the investigation of a transfusion reaction	Lecture	Blood transfusion: Indications, selection of donor criteria, cross matching, untoward reactions.	1
	PA22.7	Enumerate the indications and describe the principles and procedure of autologous transfusion	Small group discussion	Autologous transfusion	1
Clinical Pathology	PA 23.1	Describe abnormal urinary findings in disease states and identify and describe common urinary abnormalities in a clinical specimen	DOAP session	Urine Examination	2
	PA23.2	Describe abnormal findings in body fluids in various disease states	Small group discussion	Body fluids	1
	PA 23.3	Describe and interpret the abnormalities in a panel containing semen analysis, thyroid function tests, renal function tests or liver function tests	DOAP session	Thyroid function tests, renal function tests or liver function tests (Charts)	2
Gastrointestinal tract	PA24.1	Describe the etiology, pathogenesis, pathology and clinical features of oral cancers	Lecture	Precancerous lesions of oral cavity and oral cancers: etiopathogenesis, gross and microscopic features. Differential diagnosis of swelling of	1

				salivary gland.	
	PA24.2	Describe the etiology, pathogenesis, pathology, microbiology, clinical and microscopic features of peptic ulcer disease.	Lecture	Peptic ulcer: definition, etiopathogenesis, gross and microscopic features and complications.	1
	PA24.3	Describe and identify the microscopic features of peptic ulcer	DOAP session	Ulcers and tumors of intestine & Stomach (GIT)	2
	PA24.4	Describe and etiology and pathogenesis and pathologic features of carcinoma of the stomach	Lecture	Tumors of upper Gastrointestinal Tract: Gastric carcinoma: etiopathogenesis, classification, gross and microscopic features and clinical features. Carcinoid tumors of GIT. Esophagus: etiopathogenesis, morphology and clinical features.	1
	PA24.5	Describe and etiology and pathogenesis and pathologic features of Tuberculosis of the intestine	Lecture	Ulcerative lesions of GIT	1
	PA24.6	Describe and etiology and pathogenesis and pathologic and distinguishing features of Inflammatory bowel disease	Lecture	Idiopathic inflammatory bowel disease: etiopathogenesis, morphology and differences between Crohn's disease and ulcerative colitis	1

	PA24.7	Describe the etiology, pathogenesis, pathology and distinguishing features of carcinoma of the colon	Lecture	Tumors of lower Gastrointestinal Tract: Carcinoma colon- Etiopathogenesis, morphology and clinical features. Intestinal polyps and gastrointestinal stromal tumors.	1
Hepatobiliary system	PA25.1	Describe bilirubin metabolism, enumerate the etiology and pathogenesis of jaundice, distinguish between direct and indirect hyperbilirubinemia	Integrated	Jaundice	1
	PA25.2	Describe the pathophysiology and pathologic changes seen in hepatic failure and their clinical manifestations, complications and consequences	Integrated	Hepatic failure	1
	PA25.3	Describe the etiology and pathogenesis of viral and toxic hepatitis: distinguish the causes of hepatitis based on the clinical and laboratory features. Describe the pathology, complications and consequences of hepatitis	Lecture	Viral hepatitis: Etiopathogenesis, types, clinical source, pathology, serologic diagnosis, sequelae.	1

	PA25.4	Describe the pathophysiology, pathology and progression of alcoholic liver disease including cirrhosis	Lecture	Alcoholic liver disease: Pathogenesis, morphology and correlation with clinical features.	1
	PA25.5	Describe the etiology, pathogenesis and complications of portal hypertension	Lecture	Cirrhosis: Etiopathogenesis, classification, pathology, complications & differential diagnosis & Portal Hypertension	1
	PA 25.6	Interpret liver function and viral hepatitis serology panel. Distinguish obstructive from non-obstructive jaundice based on clinical features and liver function tests	DOAP session	Hepatobiliary System	2
Respiratory system	PA26.1	Define and describe the etiology, types, pathogenesis, stages, morphology and complications of pneumonia	DOAP session	Respiratory I & II	2
	PA26.2	Describe the etiology, gross and microscopic appearance and complications of lung abscess	Tutorials	Lung abscess: Etiopathogenesis, Morphology and complications. and atelectasis and hyaline membrane disease.	2
	PA26.3	Define and describe the etiology, types, pathogenesis, stages, morphology and complications and	Lecture	Chronic obstructive pulmonary disease: Bronchial asthma and Bronchiectasis - Etiopathogenesis,	1

		evaluation of Obstructive airway disease (OAD) and bronchiectasis		Morphology and complications.	
			Lecture	Chronic bronchitis and Emphysema: Etiopathogenesis, Morphology types of emphysema and complications	1
	PA26.4	Define and describe the etiology, types, pathogenesis, stages, morphology microscopic appearance and complications of tuberculosis	Integrated	Pulmonary tuberculosis: primary and secondary, morphologic types including pleuritis, clinical course.	1
	PA26.5	Define and describe the etiology, types, exposure, environmental influence, pathogenesis, stages, morphology, microscopic appearance and complications of Occupational lung disease	Lecture	Occupational lung disorders: Anthracosis, silicosis, asbestosis, mesothelioma.	1
	PA26.6	Define and describe the etiology, types, exposure, genetics environmental influence, pathogenesis, stages, morphology, microscopic appearance, metastases and complications of tumors of the lung	Lecture	Tumors of lung and pleura: Classification, etiopathogenesis, gross and microscopic features, pattern of spread, staging, clinical course, paraneoplastic syndromes.	1

		and pleura			
	PA26.7	Define and describe the etiology, types, exposure, genetics environmental influence, pathogenesis, morphology, microscopic appearance and complications of mesothelioma	Integrated	Complications of mesothelioma	1
Cardiovascular system	PA27.1	Distinguish arteriosclerosis from atherosclerosis. Describe the pathogenesis and pathology of various causes and types of arteriosclerosis	Lecture	Atherosclerosis: Definition, etiopathogenesis, gross and microscopic features, complications and clinical correlation	1
	PA27.2	Describe the etiology, dynamics, pathology types and complications of aneurysms including aortic aneurysms	Tutorials	Other diseases of blood vessels : Aneurysms & Vasculitis	2
	PA27.3	Describe the etiology, types, stages pathophysiology, pathology and complications of heart failure	Integrated	Heart failure	1
	PA27.4	Describe the etiology, pathophysiology, pathology, gross and microscopic features, criteria and	Lecture	Rheumatic heart disease: Incidence, etiology, Pathogenesis, morphology, complications, clinical	1

		complications of rheumatic fever		course & investigations.	
	PA27.5	Describe the epidemiology, risk factors, etiology, pathophysiology, pathology, presentations, gross and microscopic features, diagnostic tests and complications of ischemic heart disease	Integrated	Ischemic heart disease: Categories and pathogenesis. Myocardial infarction : incidence, risk factors, pathogenesis, morphology, complications, clinical course and investigations	1
	PA27.6	Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of infective endocarditis	Lecture	Infective endocarditis: Causes, Pathogenesis, morphology, complications and differential diagnosis of cardiac vegetations.	1
	PA27.7	Describe the etiology, pathophysiology, pathology, gross and microscopic features, diagnosis and complications of pericarditis and pericardial effusion	Lecture	Pericarditis and other pericardial diseases	1
	PA 27.8	Interpret abnormalities in cardiac function testing in acute coronary syndromes	DOAP session	Cardiovascular System including cardiac function testing in acute coronary syndromes	2
	PA 27.9	Classify and describe the etiology, types, pathophysiology, pathology, gross and microscopic features,	Integrated	Cardiomyopathies	1

		diagnosis and complications of cardiomyopathies			
	PA27.10	Describe the etiology, pathophysiology, pathology features and complications of syphilis on the cardiovascular system	Small group discussion	Syphilis	1
Urinary Tract	PA28.1	Describe the normal histology of the kidney	Lecture	Normal histology of the kidney & Renal failure: definitions, criteria, etiology, systemic manifestations and investigations.	1
	PA 28.2	Define, classify and distinguish the clinical syndromes and describe the etiology, pathogenesis, pathology, morphology, clinical and laboratory and urinary findings, complications of renal failure			
	PA28.3	Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory urinary findings, progression and complications of acute renal failure	Small group discussion	Acute renal failure	1
	PA 28.4	Define and describe the etiology, precipitating factors, pathogenesis, pathology, laboratory	Small group discussion	Chronic renal failure	1

		urinary findings progression and complications of chronic renal failure			
	PA28.5	Define and classify glomerular diseases. Enumerate and describe the etiology, pathogenesis, mechanisms of glomerular injury, pathology, distinguishing features and clinical manifestations of glomerulonephritis	Lecture	Glomerulonephritis: Classification, Acute nephritis, rapidly progressive glomerulonephritis.	1
	PA28.6	Define and describe the etiology, pathogenesis, pathology, laboratory, urinary findings, progression and complications of IgA nephropathy	Small group discussion	IgA nephropathy	1
	PA28.7	Enumerate and describe the findings in glomerular manifestations of systemic disease	Integrated	Glomerular manifestations of systemic disease	1
	PA28.8	Enumerate and classify diseases affecting the tubular interstitium	Lecture	Pyelonephritis and interstitial nephritis: etiopathogenesis of acute and chronic, morphology and clinical correlation.	1
	PA 28.9	Define and describe the etiology, pathogenesis, pathology, laboratory,	Lecture	Acute Tubular Necrosis	1

		urinary findings, progression and complications of acute tubular necrosis			
	PA28.10	Describe the etiology, pathogenesis, pathology, laboratory findings, distinguishing features progression and complications of acute and chronic pyelonephritis and reflux nephropathy	DOAP session	Renal System I & II	2
	PA28.11	Define classify and describe the etiology, pathogenesis pathology, laboratory, urinary findings, distinguishing features progression and complications of vascular disease of the kidney.	Small group discussion	Renal vascular disorders and malformations,	1
	PA28.12	Define classify and describe the genetics, inheritance, etiology, pathogenesis, pathology, laboratory, urinary findings, distinguishing features, progression and complications of cystic disease of the kidney	Small group discussion	Polycystic kidney.	1
	PA28.13	Define classify and describe the etiology, pathogenesis, pathology, laboratory,	Lecture	Nephrolithiasis and obstructive nephropathy	1

		urinary findings, distinguishing features progression and complications of renal stone disease and obstructive uropathy			
	PA28.14	Classify and describe the etiology, genetics, pathogenesis, pathology, presenting features, progression and spread of renal tumors	Lecture	Tumors of kidney and pelvis: classifications, morphology, clinical course and paraneoplastic syndromes of common tumors.	1
	PA28.15	Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of thrombotic angiopathies	Small group discussion	Thrombotic angiopathies	1
	PA28.16	Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of urothelial tumors	Lecture	Urinary bladder: cystitis and carcinoma	1
Male Genital Tract	PA29.1	Classify testicular tumors and describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of testicular tumors	Lecture	Testicular tumors	1

	PA29.2	Describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the penis	Lecture	Carcinoma of penis	1
	PA29.3	Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, urologic findings & diagnostic tests of benign prostatic hyperplasia	Integrated	Prostate : prostatitis Nodular hyperplasia, carcinoma	1
	PA29.4	Describe the pathogenesis, pathology, hormonal dependency presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of the prostate	Lecture	Prostate : carcinoma	1
	PA29.5	Describe the etiology, pathogenesis, pathology and progression of prostatitis	DOAP session	Male Genital System	2
Female Genital Tract	PA30.1	Describe the epidemiology, pathogenesis, etiology, pathology, screening, diagnosis and progression of	Lecture	Diseases of cervix: cervicitis, cervical carcinoma, etiology cytological diagnosis	1

		carcinoma of the cervix			
	PA30.6	Describe the etiology and morphologic features of cervicitis			
	PA30.2	Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the endometrium	Lecture	Carcinoma of the endometrium	1
	PA30.3	Describe the pathogenesis, etiology, pathology, diagnosis and progression and spread of carcinoma of the leiomyomas and leiomyosarcomas.	DOAP session	Female Reproductive System	2
	PA30.4	Classify and describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of ovarian tumors	Lecture	Ovarian tumours	1
	PA30.5	Describe the etiology, pathogenesis, pathology, morphology, clinical course, spread and complications of gestational trophoblastic neoplasms	Lecture	Trophoblastic diseases: hydatidiform mole, choriocarcinoma.	1

	PA30.7	Describe the etiology, hormonal dependence, features and morphology of endometriosis	Integrated	Diseases of Uterus: Endometriosis & adenomyosis.	1
	PA30.8	Describe the etiology and morphologic features of adenomyosis	Integrated	Adenomyosis	1
	PA30.9	Describe the etiology, hormonal dependence and morphology of endometrial hyperplasia	Integrated	Endometrial hyperplasia	1
Breast	PA31.1	Classify and describe the types, etiology, pathogenesis, pathology and hormonal dependency of benign breast disease	Lecture	Breast: Non-neoplastic Lesions	1
	PA31.4	Enumerate and describe the etiology, hormonal dependency and pathogenesis of gynecomastia			
	PA31.2	Classify and describe the epidemiology, pathogenesis, classification, morphology, prognostic factors, hormonal dependency, staging and spread of carcinoma of the breast	Lecture	Neoplastic lesions of the breast- Classification, Morphology, grading of carcinoma of breast and differential diagnosis of breast swellings.	1

	PA 31.3	Describe and identify the morphologic and microscopic features of carcinoma of the breast	DOAP session	Tumors of Breast and Diseases of the endocrine organs	2
Endocrine system	PA32.1	Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings	Lecture	Thyroid: Differential diagnosis of thyroid nodule.	1
	PA32.2	Describe the etiology, cause, iodine dependency, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis	Tutorials	Thyrotoxicosis	2
	PA 32.3	Describe the etiology, pathogenesis, manifestations, laboratory and imaging features and course of thyrotoxicosis/ hypothyroidism	Integrated	Thyrotoxicosis/ Hypothyroidism	1
	PA32.4	Classify and describe the epidemiology, etiology, pathogenesis, pathology, clinical laboratory features, complications and progression of diabetes mellitus	Integrated	Diabetes mellitus: Classification, pathogenesis of system involvement, sequelae and complications.	1

	PA32.5	Describe the etiology, genetics, pathogenesis, manifestations, laboratory and morphologic features of hyperparathyroidism	Small group discussion	Parathyroid hyperplasias and tumours, hyperparathyroidism. Pituitary tumours	1
	PA32.6	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications and metastases of pancreatic cancer	Integrated	Pancreatic cancer	1
	PA32.7	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of adrenal insufficiency	Seminar	Adrenal diseases: Cortical hyperplasia, atrophy, tuberculosis.	2
	PA32.8	Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications of Cushing's syndrome	Seminar	Cushing's syndrome	2
	PA32.9	Describe the etiology, pathogenesis, manifestations, laboratory and morphologic features of adrenal neoplasms	Seminar	Adrenal diseases: tumours of cortex and medulla	2
Bone and soft	PA33.1	Classify and describe the etiology,	Lecture	Osteomyelitis and Metabolic diseases:	1

tissue		pathogenesis, manifestations, radiologic and morphologic features and complications of osteomyelitis		rickets / osteomalacia, osteoporosis, hyperparathyroidism	
	PA33.2	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of bone tumors	Lecture	Tumors: Primary, osteosarcoma, osteoclastoma, Ewing's sarcoma, chondrosarcoma, metastatic	1
	PA33.3	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications and metastases of soft tissue tumors	Small group discussion	Classification, morphological features of lipomatous, fibrous, blood vessels tumours, Neural, muscle and fibro histiocytic tumours.	1
	PA33.4	Classify and describe the etiology, pathogenesis, manifestations, radiologic and morphologic features and complications of Paget's disease of the bone	Integrated	Paget's disease of the bone	1
	PA33.5	Classify and describe the etiology, immunology, pathogenesis, manifestations, radiologic and	Integrated	Arthritis: rheumatoid, osteoid and tuberculosis	1

		laboratory features, diagnostic criteria and complications of rheumatoid arthritis			
Skin	PA34.1	Describe the risk factors pathogenesis, pathology and natural history of squamous cell carcinoma of the skin	Lecture	Skin tumours: Non-pigmented -classification and morphology & Basal Cell Carcinoma	1
	PA34.2	Describe the risk factors pathogenesis, pathology and natural history of basal cell carcinoma of the skin			
	PA34.3	Describe the distinguishing features between a nevus and melanoma. Describe the etiology, pathogenesis, risk factors morphology clinical features and metastases of melanoma	Lecture	Skin tumours: pigmented-classification and morphological features of common nevi and malignant melanoma.	1
	PA 34.4	Identify, distinguish and describe common tumors of the skin	DOAP session	Diseases of Skin	2
Central Nervous System	PA35.1	Describe the etiology, types and pathogenesis, differentiating factors, CSF findings in meningitis	Lecture	CSF and its disturbances: Cerebral oedema, raised intracranial pressure. Inflammatory disorders: Pyogenic and tuberculous meningitis, brain abscess, tuberculoma.	1

	PA35.2	Classify and describe the etiology, genetics, pathogenesis, pathology, presentation sequelae and complications of CNS tumors	Lecture	Classify CNS tumours - primary glioma and meningioma and metastatic.	1
	PA 35.3	Identify the etiology of meningitis based on given CSF parameters (Including CNS lesions)	DOAP session	CSF Examination Including CNS lesions	2
Eye	PA36.1	Describe the etiology, genetics, pathogenesis, pathology, presentation, sequelae and complications of retinoblastoma	Integrated	Retinoblastoma	1
