Faculty of Medicine

JSS Academy of Higher Education & Research
(Deemed to be University)
Accredited "A+" Grade by NAAC
Sri Shivarathreeshwara Nagar, Mysuru – 570 015

MBBS 2019: Regulations & Syllabus

PHASE III PART II- CBME SYLLABUS

(THEORY AND CLINICALS)

(GENERAL MEDICINE, GENERAL SURGERY)

COMPILED BY: MEDICAL EDUCATION UNIT

VOLUME 1

MBBS 2019: Regulations & Syllabus

PHASE III PART II- CBME SYLLABUS
(Theory and Clinicals)

GENERAL MEDICINE, GENERAL SURGERY

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GENERAL MEDICINE

PREAMBLE

The undergraduate medical education program is designed with a goal to create an "Indian Medical Graduate" (IMG) possessing requisite knowledge, skills, attitudes, values and responsiveness, so that she or he may function appropriately and effectively as a physician of first contact of the community while being globally relevant.

Excerpts from GMER- Regulations on Graduate Medical Education (Amendment), 2019 and UG Curriculum Volume-2 have been utilized in preparing this syllabus document for MBBS Third Professional (Part II). Alignment / Integration between topics & subjects has been attempted.

As per GMER 2019, Table 2, page.no.68: Distribution of subjects by Professional Phase. Third Professional MBBS Part II (13 months) includes the following:

- General Medicine, Pediatrics, General Surgery,Orthopedics, Obstetrics and Gynecology including Family welfare and allied specialties
- Clinical subjects /postings
- Attitude, Ethics & Communication Module (AETCOM)

As per GMER 2019, table 9, page.no.75 - Focus of Learner - Doctor Program:

(History taking, physical examination, assessment of change in clinical status, communication and patient education, choice of investigations, basic procedures and continuity of care)

Year 4: All of the above and decision making, management & outcomes

Keeping the above format as guiding framework, the department of General Medicine plans to continue Clinical Medicine to MBBS students

GOAL AND OBJECTIVES

Syllabus in Gen.Medicine for Third Professional MBBS Part II (13 months)

GOAL:

The broad goal of the teaching of Third Professional MBBS Part II, undergraduate students in General Medicine is to continue with Clinical Medicine so that students are oriented further, towards clinical medicine and go through a smooth transition towards internship

OBJECTIVES:

A) KNOWLEDGE

At the end of the Third Professional MBBS Part II, undergraduate students in General Medicine should be able to describe a few more diseases and their work-up & treatment pertaining to selected topics (see below) in General Medicine

B) SKILLS (**As per UG Curriculum document Vol 2, page.no.18: 3.1.5-9**)

At the end of Third Professional MBBS Part II, the student should be able to:-

- Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is complete and relevant to disease identification, disease prevention and health promotion.
- Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is contextual to gender, age, vulnerability, social and economic status, patient preferences, beliefs and values.
- Demonstrate ability to perform a physical examination that is complete and relevant to disease identification, disease prevention and health promotion.
- Demonstrate ability to perform a physical examination that is contextual to gender, social and economic status, patient preferences and values
- Demonstrate effective clinical problem solving, judgment and ability to interpret and integrate available data in order to address patient problems, generate differential diagnoses and develop individualized management plans that include preventive, promotive and therapeutic goals.

C) Attitude (Affective)

Communicate effectively with peers and teachers in various teaching learning activities in a manner that encourages participation and shared decision-making.

Demonstrate ability to behave & communicate with sensitivity and due respect towards patients and their relatives during history taking & physical examination

D) INTEGRATION

At the end of Third Professional MBBS-Part II (13 months) training he/she should be able to integrate the causes of disease and relationship of different etiological factors (social, economic and environmental) and that contribute to the natural history of diseases most prevalent in India and describe a few more diseases and their work-up & treatment pertaining to selected topics (see below) in General Medicine and perform a physical examination that is contextual

OUTCOME

At the end of Third Professional MBBS-Part II (13 months), Students would be oriented further, towards clinical medicine, patients & diseases and would have a smooth transition further, towards internship

As per GMER 2019, page.no.82: 10.6. Third Professional (Part II) - 10.6.1. General Medicine – as per 10.5.1

(a) Competencies: The student must demonstrate ability to do the following in relation to common medical problems of the adult in the community:

1. Demonstrate understanding of the patho-physiologic basis, epidemiological profile, signs and symptoms of disease and their investigation and management,
2. Competently interview and examine an adult patient and make a clinical diagnosis,
3. Appropriately order and interpret laboratory tests,
4. Initiate appropriate cost-effective treatment based on an understanding of the rational drug prescriptions, medical interventions required and preventive measures,
5. Follow up of patients with medical problems and refer whenever required,
6. Communicate effectively, educate and counsel the patient and family,
7. Manage common medical emergencies and refer when required,
8. Independently perform common medical procedures safely and understand patient safety issues.

(b) Integration: The teaching should be aligned and integrated horizontally and vertically in order to provide sound biologic basis and incorporating the principles of general medicine into a holistic and comprehensive approach to the care of the patient

As per GMER 2019, table 9, page.no.75 - Focus of Learner - Doctor Program:

(History taking, physical examination, assessment of change in clinical status, communication and patient education and choice of investigations, basic procedures and continuity of care, decision making, management & outcomes)

As per GMER 2019, page.no.74: The learner will function as a part of the health care team with the following responsibilities:

(i) Be part of the unit's outpatient services on admission days,
(ii) Remain with the admission unit until 6 PM except during designated class hours,
(iii) Be assigned patients admitted during each admission day for whom he/she will undertake responsibility, under the supervision of a senior resident or faculty member,
(iv) Participate in the unit rounds on its admission day and will present the assigned patients to the supervising physician,
(v) Follow the patient's progress throughout the hospital stay until discharge,
(vi) Participate, under supervision, in procedures of assigned patients (according to responsibilities outlined above in first 3 lines of this page, as per GMER 2019- table 9),
(vii) Participate in unit rounds on at least one other day of the week excluding the admission day,
(viii) Discuss ethical and other humanitarian issues during unit rounds,
(ix) Attend all scheduled classes and educational activities,
(x) Document his/her observations in a prescribed log book / case record.
(d) No learner will be given independent charge of the patient

TERMS AND TEACHING GUIDELINES

1. LECTURE

Is a teaching-learning method which includes traditional and interactive sessions involving a large group.

2. Seminar /Tutorial: An interactive teaching - learning session wherein students participate in the discussion

3. SMALL GROUP DISCUSSION (BEDSIDE CLINICS/OPD Teaching as applied to CLINICAL POSTINGS in GENERAL MEDICINE) & SEMINARS/TUTORIALS

Is an instructional method involving small groups of students in an appropriate learning context. (ward/opd teaching as applied to CLINICAL POSTINGS in GENERAL MEDICINE); also includes **include Seminars/tutorials wit interactive teaching - learning sessions wherein students participate actively in the discussion.**

The clinical postings in the third professional part II shall be 18 hours per week (**3 hrs per day from Monday to Saturday as per GMER 2019, table no.7; page.no.70 & 71**) covering History taking, Symptomatology, GPE & Systemic examination pertaining to all major systems & disorders

3. Learner-doctor method of clinical training (Clinical Clerkship)

Provides learners with experience in longitudinal patient care being part of the health care team with Hands-on care of patients in outpatient and inpatient setting. (**as per GMER 2019, 9.5.1-2, page.no.74**).

4. CORE

A competency that is necessary in order to complete the requirements of the subject (traditional must know)

5. NON – CORE

A competency that is optional in order to complete the requirements of the subject (traditional nice (good) to know/ desirable to know.

Syllabus at a glance

Gen.Medicine for Third Professional MBBS Part II (13 months)

Number of teaching hours:

Teaching method	**Hours**
Lecture	**70** (1hr X 70)
Seminars /Tutorials /Integrated Teaching	**125**
Self-directed learning	**15**
Total	**210**
Clinical postings	(18 hours per week - 3 hrs per day from Monday to Saturday)

LECTURE CLASSES

Sl.No	Topic	Number of competencies	Lecture (Hrs)
1	Heart Failure…etc		10
2	Fever & Febrile Syndromes		12
3	Miscellaneous infections		
4	Liver disease		11
5	GI Bleeding		
6	Rheumatology		10
7	AKI & CKD		05
8	Headache, etc		04
9	CVA		03
10	Movement Disorders		02
11	Geriatrics		13
	Total		**70**

Detailed Breakup(hrs): Competencies in separate tables-see later

1) HF – 4, AF -1, Ac.RhF-1, RHD –valv.disease-2, IE-1, Adult CHD-1
2) Fever & infections: Fever -2, Malaria-2, Dengue-1,Lepto-1,Rickettsial-1,Enteric-1,Sepsis -1,FUO-1, Rabies-1,Tetanus-1
3) Liver etc : Liver basics-1, Viral hepatitis+vaccines-3, ALD-1,Cirrhosis-portal HTN-1 with complications & mgmt.-2 GI bleed -2, APD +H.pylori- 1
5) AKI-2, CKD+RRT-3
6) Headache: basics-1, Migraine-1, Meningitis-1. 8) Movement disorders: basics-1, Parkinson's -1

Seminars /Tutorials /SGD – 125 hrs; covering topics (other than the above didactic lectures) which include interactive teaching - learning sessions wherein students participate actively in the discussion

Self-directed learning – 15 hrs; including important topics which are not covered under above (power point presentation by students moderated by a teacher)

SGD - SEMINARS/TUTORIALS - 30 sessions; 2hrs each

Sl.No	Topic	Sessions
1	ECG	3
2	CXR	1
3	ABG, Acid-base disorders	2
4	Electrolyte disorders	2
5	LP-CSF analysis	1
6	Snake bite, other envenomation	1
7	OP poisoning etc	1
8	Obesity	1
9	Nutrition	1
10	Vitamin deficiencies	2
11	HIV	3
12	Pneumonia	1
13	Diarrhea	1
14	Hypothyroidism	1
15	Hyperthyroidism	1
16	Anemias	3
17	HTN	2
18	IHD-ACS	2
19	DM	2
	Total	**30 Sessions**

Self Directed Learning – 7 sessions; 2hrs each

Sl.No	Topic
1	Transfusion therapy
2	AIDP-CIDP
3	Peripheral neuropathy
4	Myasthenia gravis
5	MND, MS
6	Vasculitis
7	ARDS, Pulmonary embolism
	Total - 7 sessions

Clinical postings 18 hours per week - 3 hrs per day from Monday to Saturday

Sl No	Topic
1	CVS
2	RS
3	Abdomen
4	CNS
5	Locomotor system/Rheumatology
6	Miscellaneous (endocrine.infections Etc.)
7	other topics of III MBBS Part II

Assessments:

There will be one clinical internal assessment at the end of clinical postings.
Two theory Internal assessments and a summative assessment at the end of the Phase.

COMPETENCIES, SPECIFIC LEARNING OBJECTIVES, TEACHING LEARNING & ASSESSMENT METHODS

(CODE: IM; Competencies have been combined if they are similar)

TOPIC 1: Heart Failure **Number of competencies: (16)** **Number of procedures that require certification: (NIL)**							
Number	**Competency & SLOs** (At the end of the session, student shall be able to: ……..)	**Domain**	**Millers pyramid level**	**Core**	**T&L Methods**	**Assessment methods**	**Integration**
IM1.1	**Describe and discuss the epidemiology, pathogenesis clinical evolution and course of common causes of heart disease including: rheumatic/ valvular, ischemic, hypertrophic inflammatory**.	K	KH	Y	Lecture	Short notes Viva voce	Pathology, Physiology
	1.1.1 Describe epidemiology of heart disease. 1.1.2 Describe pathogenesis of heart disease. 1.1.3 Enumerate causes of heart disease. 1.1.4 Enumerate causes of ischemic heart disease. 1.1.5 Discuss hypertrophic heart disease						
IM1.2	**Describe and discuss the genetic basis of some forms of heart failure**	K	KH	Y	Lecture	Short notes	Pathology, Physiology
	1.2.1.Define heart failure. 1.2.2.Describe genetic basis of heart						

	failure 1.2.3.List different types of heart failure. 1.2.4.Differentiate different types of heart failure						
IM1.3	**Describe and discuss the etiology microbiology pathogenesis and clinical evolution of rheumatic fever, criteria, degree of rheumatic activity and rheumatic valvular heart disease and its complications including infective endocarditis**	K	KH	Y	Lecture	Long essay Viva voce	Pathology, Physiology, Microbiology
	1.3.1 Describe etiology of rheumatic fever. 1.3.2.Discuss pathogenesis of rheumatic fever 1.3.3.Discuss evolution of rheumatic fever. 1.3.4.Discuss Jones criteria. 1.3.5. Enlist rheumatic valvular heart disease. 1.3.6.Enumerate rheumatic fever complications. 1.3.7 Enumerate causes of endocarditis						
IM1.4	**Stages of heart failure**	K	KH	Y	Lecture	Short notes Viva voce	Pathology, Physiology
	1.4.1 Describe stages of heart failure						
IM1.5	**Describe ,discuss and differentiate the processes involved in R Vs L heart failure, systolic vs diastolic failure**	K	KH	Y	Lecture	Short notes Viva voce	Pathology, Physiology
	1.5.1. Describe the mechanism involved in right heart failure.						

	1.5.2.Describe the mechanism involved in left heart failure . 1.5.3.Differentiate between right and left heart failure. 1.5.4.Define systolic heart failure. 1.5.5.Define diastolic heart failure. 1.5.6.Differentiate between systolic and diastolic heart failure.						
IM1.6	**Describe and discuss the compensatory mechanisms involved in heart failure including cardiac remodelling and neurohormonal adaptations**	K	KH	Y	Lecture	Short essay Viva voce	Pathology, Physiology
	1.6.1Define cardiac remodelling. 1.6.2 Discuss neurohormonal adaptations in heart failure. 1.6.3 Discuss the compensatory mechanism in heart failure						
IM1.7	**Enumerate, describe and discuss the factors that exacerbate heart failure**	K	KH	Y	Lecture	Short essay Viva voce	Pathology, Physiology
	1.7.1.Enumerate the factors which exacerbate heart failure. 1.7.2.Discuss role of ischemia in heart failure. 1.7.3.Discuss role of arrhythmia in heart failure.						

	1.7.4.Discuss role of anemia in heart failure. 1.7.5.Discuss role of thyrotoxicosis in heart failure. 1.7.6 Enlist the drugs, which cause heart failure.						
IM1.8	**Describe and discuss the pathogenesis and development of common arrythmias involved in heart failure particularly atrial fibrillation**	K	KH	Y	Lecture	Short essay Viva voce	Pathology, Physiology
	1.8.1.Enlist common cardiac arrhythmias. 1.8.2.Discuss the pathogenesis of arrhythmias. 1.8.3.Enumerate the causes of atrial fibrillation						
IM1.9	**Describe and discuss the clinical presentation and features, diagnosis, recognition and management of acute rheumatic fever**	K	KH	Y	Lecture	Long essay Viva voce	Pathology, Microbiology
	1.9.1.Discuss clinical features of acute rheumatic fever. 1.9.2. Enumerate the investigation to diagnose rheumatic fever. 1.9.3. Discuss the management of rheumatic fever.						

IM1.19	**Enumerate the indications for and describe the findings of heart failure with the following conditions including: 2D echocardiography, brain natriuretic peptide, exercise testing, nuclear medicine testing and coronary angiogram**	K	KH	N	Lecture	Short notes	
	1.19.1 Enumerate the indications for 2D Echocardiography. 1.19.2 Enumerate the indications for exercise testing. 1.19.3 Enumerate the indication for coronary angiogram. 1.19.4 Describe Brain Natriuretic peptide.						
IM1.20	**Determine the severity of valvular heart disease based on the clinical and laboratory and imaging features and determine the level of intervention required including surgery**	K	KH	Y	Lecture,	Short essay Short notes	
	1.20.1 Discuss the severity of valvular heart disease. 1.20.2 Enumerate clinical features of severe valvular heart disease. 1.20.3 Discuss the intervention required for valvular heart disease. 1.20.4 List the indication for valvotomy. 1.20.5List the indication for valvuloplasty.						

IM1.21	**Describe and discuss and identify the clinical features of acute and subacute endocarditis, echocardiographic findings, blood culture and sensitivity and therapy**	K	KH	Y	Lecture	Short essay	
	1.21.1 Describe the clinical features of acute and subacute endocarditis. 1.21.2 Enumerate the causes of endocarditis. 1.21.3 Describe Echocardiographic findings. 1.21.4 Discuss blood culture and sensitivity. 1.21.5 Discuss treatment of acute and subacute endocarditis						
IM1.24	**Describe and discuss the pharmacology of drugs including indications, contraindications in the management of heart failure including diuretics, ACE inhibitors, Beta blockers, aldosterone antagonists and cardiac glycosides**	K	KH	Y	Lecture	Short essay Viva voce	Pharmacology
	1.24.1 Enlist the drugs used to treat heart failure. 1.24.2 Discuss mechanism of action of above drugs. 1.24.3 Enumerate the side effects of diuretics.						

	1.24.4 Enumerate the side effects of beta blockers. 1.24.5 Define the doses of all these drugs.						
IM1.25	**Enumerate the indications for valvuloplasty, valvotomy, coronary revascularization and cardiac transplantation**	K	KH	Y	Lecture	Viva voce Short notes	
	1.25.1 Discuss the indication of valvuloplasty. 1.25.2 Discuss the indication of valvotomy. 1.25.3 Describe coronary revascularization. 1.25.4 Enumerate indications of coronary rescularization. 1.25.5 List the indications of cardiac transplantation.						
IM1.27	**Describe and discuss the role of penicillin prophylaxis in the prevention of rheumatic heart disease**	K	KH	Y	Lecture	Short notes	Microbiology, Pharmacology
	1.27.1Discuss the role of penicillinprophylaxis. 1.27.2 Discuss the dose of penicillin for prophylaxis. 1.27.3 Counsel the patient for long term use of penicillin.						

IM1.28	**Enumerate the causes of adult presentations of congenital heart disease and describe the distinguishing features between cyanotic and acyanotic heart disease**	K	KH	Y	Lecture	Bedside clinic Short essay	
	1.28.1 Define congenital heart disease. 1.28.2 List different congenital heart diseases. 1.28.3 Discuss adult congenital heart disease. 1.28.4 Differentiate between cyanotic and acyanotic heart disease.						

Topic: 2&3. Fever and febrile syndromes
Number of competencies: (6) Number of procedures that require certification: (NIL)

Number	**Competency & SLOs** (At the end of the session, student shall be able to: ……..)	Domain	Millers pyramid level	core	T&L Methods	Assessment methods	Integration
IM 4.1	**Describe and discuss the febrile response and the influence of host immune status, risk factors and comorbidities on the febrile response**	K	KH	Y	Lecture	Long/short essay/MCQs	Microbiology
	4.1.1. Describe the febrile response 4.1.2. Discuss the risk factors and comorbidities.						
IM 4.2	**Describe and discuss the influence of special populations on the febrile response including: the elderly, immune suppression, malignancy and neutropenia, HIV and travel**	K	KH	Y	Lecture	Long/Short essay/MCQs	Microbiology

IM 4.3	**Discuss and describe the common causes, pathophysiology and manifestations of fever in various regions in India including bacterial, parasitic and viral causes (e.g.Dengue, Chikungunya, Typhus)**	K	KH	Y	Lecture	Long / Short essay/MCQs	Microbiology Community medicine
	4.3.1. Enumerate common causes of fever 4.3.2. Describe pathophysiology of fever 4.3.3. Describe manifestations of fever						
IM 4.4	**Describe and discuss the pathophysiology and manifestations of inflammatory causes of fever**	K	KH	Y	Lecture	Short essay/MCQs	Pathology
	4.4.1. Describe pathophysiology of inflammatory causes of fever 4.4.2. Describe manifestations of inflammatory causes of fever						
IM 4.5	**Describe and discuss the pathophysiology and manifestations of malignant causes of fever including hematologic and lymph node malignancies**	K	KH	Y	Lecture	Short essay/MCQs	Pathology
	4.5.1. Describe pathophysiology of malignant causes of fever 4.5.2. Discuss Clinical features of malignant causes of fever						
IM 4.6	**Discuss and describe the pathophysiology manifestations & treatment of malaria**	K	KH	Y	Lecture	Short essay/MCQs	Microbiology
	4.6.1. Discuss pathophysiology of malaria 4.6.2. Describe Clinical features of malaria.						

TOPIC 4: Liver disorders **No of competencies: (14)** **No of procedures that require certification: (nil)**							
Number	**<u>Competency and SLOs</u>** (At the end of the session, student shall be able to: ……..)	**Domain**	**Miller's pyramid**	**Core**	**T& L methods**	**Assessment methods**	**Integration**
IM5.1	**Describe and discuss the physiologic and biochemical basis of hyperbilirubinemia**	K	K	Y	Lecture	Written-Short essay/Viva voce	Pathology Physiology
	5.1.1. Describe the bilirubin metabolism 5.1.2. Describe the interpretation of liver functions 5.1.3. Discuss the types of hyperbilirubinemia						
IM 5.2	**Describe and discuss the etiology and pathophysiology of liver injury**	K	K	Y	Lecture class	Written-short essay/Viva voce/ MCQ	Pathology Physiology
	5.2.1. Discuss the etiology of Liver disorders. 5.2.2. Enumerate the causes involved in the diseases correctly. 5.2.3. Describe the pathophysiology of liver disease accurately.						
IM5.3	**Describe and discuss the pathologic changes in various forms of liver disease**	K	K	Y	Lecture	Short essay Viva voce	Pathology

IM5.4	**Describe and discuss the epidemiology, microbiology, immunology and clinical evolution of infective (viral) hepatitis**	K	K	Y	Lecture	Written-short essay/Viva voce/MCQ/OSCE	Microbiology Physiology Community medicine
	5.4.1. Discuss the epidemiology of infective hepatitis**.** 5.4.2. Describe and discuss the microbiology of infective hepatitis 5.4.3. Describe and discuss the immunology in infective hepatitis. 5.4.4. Discuss the clinical evolution of infective hepatitis 5.4.5. Enumerate the clinical features and liver function test result accurately**.**						
IM5.5	**Describe and discuss the pathophysiology and clinical evolution of alcoholic liver disease**	K	KH	Y	Lecture	Short notes/Viva-voce	Pathology
	5.5.1 Describe and discuss different stages of alcohol induced liver injury. 5.5.2 Interpret the results of LFT and diagnose the type of alcohol induced Liver disorder						
IM5.6	**Describe and discuss the patho-physiology, clinical evolution and complications of cirrhosis and portal hypertension including ascites, spontaneous bacterial peritonitis, hepato renal syndrome and hepatic encephalopathy**	K	K	Y	Lecture	Shot notes short case/long case	

	5.6.1. Elicit document appropriate history that will establish the diagnosis of chronic liver disease accurately. 5.6.2. Discuss changes in different organ systems in cirrhosis correctly. 5.6.3. Demonstrate the signs determining the severity of the liver cell failure correctly. 5.6.4. Enumerate the signs which determine the complications of cirrhosis correctly. 5.6.5 Present an appropriate history that will establish the diagnosis, cause of cirrhosis with portal hypertension and its various complications accurately.						
IM 5.7	**Enumerate and describe the causes and pathophysiology of drug induced liver injury**	K	K	Y	Lecture	Short notes, viva voce	Pharmacology
	5.7.1. List the common drugs causing liver injury accurately. 5.7.2. Enumerate features of drug induced hepatitis						
IM 5.8	**Describe and discuss the pathophysiology, clinical evolution and complications cholelithiasis and cholecystitis**.	K	K	Y	Lecture	Short notes,short /long case	General surgery
	5.8.1 Enumerate causes for cholecystitis correctly. 5.8.2 Describe the pathophysiology and clinical features of cholecystitis 5.8.3 Discuss the complications of cholecystitis 5.8.4 Describe various types of gall stones and its complications accurately.						

IM 5.12	**Choose and interpret appropriate diagnostic tests including: CBC, bilirubin, function tests, Hepatitis serology and ascitic fluid**	K	KH	Y	Lecture	Short essay, MCQ	Pathology
	5.12.1. Order the relevant diagnostic tests for the cases based on the clinical diagnosis correctly. 5.12.2. Interpret the diagnostic tests ordered including CBC,liver function tests and ultrasound scan accurately.						
IM 5.13	**Enumerate the indications for ultrasound and other imaging studies including MRCP and ERCP and describe the findings in liver disease**	K	K	Y	Lecture	Short notes Viva-voce	Radiodiagnosis General surgery
	5.13.1 Enumerate the indications of the Ultrasound, MRCP and ERCP in liver disease accurately 5.13.2 Describe the findings of imaging in each liver disease accurately						
IM5.14	**Outline a diagnostic approach to liver disease based on hyperbilirubinemia, liver function changes and hepatitis serology**	K	KH	Y	Lecture	Viva voce Short notes	Microbiology Pathology
IM5.16	**Describe and discuss the management of hepatitis, cirrhosis, portal hypertension, ascites spontaneous, bacterial peritonitis and hepatic encephalopathy**	K	KH	Y	Lecture	short notes viva voce	Pharmacology General surgery
	5.16.1. Describe the management of hepatitis 5.16.2. Describe the management of cirrhosis 5.16.3. Describe the management of portal hypertension						

	5.16.4. Describe the management of spontaneous bacterial peritonitis 5.16.5. Describe the management of hepatic encephalopathy						
IM5.17	**Enumerate the indications, precautions and counsel patients on vaccination for hepatitis**	K	KH	Y	Lecture, Small group discussion	Short notes, Viva voce	Microbiology Community medicine
	5.17.1 List the different vaccines available for hepatitis. 5.17.2 Discuss the indications for hepatitis vaccination 5.17.3 Describe the vaccination protocol accurately. 5.17.4 Discuss benefits of vaccination in a patient and community accurately.						
IM5.18	**Enumerate the indications for hepatic transplantation**	K	K	Y	Written, Small group discussion	Short notes/ Viva voce	General surgery

Topic: 5. Gastrointestinal Bleed **Number of competencies: (9)** **Number of procedures that require certification: (NIL)**							
Number	**Competency & SLOs** (At the end of the session, student shall be able to: ……..)	**Domain**	**Millers pyramid level**	**core**	**T&L Methods**	**Assessment methods**	**Integration**
IM 15.1	**Enumerate, describe and discuss the etiology of upper and lower GI bleeding** IM15.1.1.Describe and discuss the anatomy and blood supply of GIT IM15.1.2. How to distinguish anatomically between upper GIT and lower GIT. IM15.1.3. Describe the etiology of upper GI bleeding. IM15.1.4. Describe the etiology of lower GI bleeding	K	KH	Y	Lecture	Long essay/ short essay / viva voce	Pathology, General surgery
IM 15.2	**Enumerate, describe and discuss the evaluation and steps involved in stabilizing a patient who presents with acute volume loss and GI bleed.**	K	KH	Y	Lecture	Long essay /viva voce	Pathology, General surgery
IM 15.3	**Describe and discuss the physiologic effects of acute blood and volume loss.** 15.3.1.discuss the pathophysiology of acute volume loss 15.3.2. discuss the pathophysiology of acute blood loss.	K	KH	Y	Lecture	Short essay/viva voce	Physiology/Pathology/ surgery

	15.3.3.discuss the physiological effects of acute volume loss 15.3.4.discuss the physiological effects of acute blood loss.						
IM 15.10	**Enumerate the indications for endoscopy, colonscopy and other imaging procedure in the investigation of upper GI bleeding**	K	KH	Y	Lecture	Short essay/MCQs / Viva-voce	General Surgery
IM 15.11	**Develop, document and present a treatment plan that include fluid resuscitation, blood and blood component transfusion, and specific therapy for arresting blood loss.** 15.11.1.Enumerate the steps involved in fluid resuscitation in a case of GI bleed. 15.11.2.Discuss the role of blood and blood component transfusion in a case of GI bleed. 15.11.3.Discuss the specific therapy for arresting blood loss based on etiology.	S	KH	Y	Lecture	Short essay/MCQs / Viva-voce	Pathology General Surgery
IM 15.12	**Enumerate the indications for whole blood, component and platelet transfusion and describe the clinical features and management of mismatched transfusion** 15.12.1.Enumerate the indications for whole blood and its components transfusion in GI bleed. 15.12.2.Enumerate the indications platelet transfusion in GI bleed. 15.12.3.Discuss the clinical features of mismatched transfusion. 15.12.4.Discuss the management of mismatched transfusion.	K	KH	Y	Lecture, small group discussion	Short essay/MCQs / Viva-voce	Pathology

	15.13.1.Enumerate the steps involved in cross matching and transfusion of blood and blood components.						
IM 15.14	**Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of pressors used in the treatment of upper GI bleed** 15.14.1.Discuss the indications of pressors therapy in the treatment of upper GI bleed.2.1.2 Describe the normal coronary anatomy correctly 15.14.2.Discuss the pharmacokinetics and pharmacodynamics of pressors used in the treatment of upper GI bleed. 15.14.3. Discuss the side effects of pressor used in the treatment of upper GI bleed.	K	KH	Y	Lecture	Short essay/MCQs	Pharmacology
IM 15.15	**Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of acid peptic disease including Helicobacter pylori.**	K	KH	Y	Lecture	Short essay/MCQs	Pharmacology /Microbiology
IM 15.16	**Enumerate the indications for endoscopic interventions and surgery** 15.16.1.Enumerate the indications, contraindications and complications of endoscopic variceal ligation (EVL) 15.16.2.Enumerate the indications, contraindications and complications of surgeries in GI bleed.	S	KH	Y	Lecture	Short essay/viva voce	General surgery

Topic: 6. Rheumatological problems **Number of competencies: (13)** **Number of procedures that require certification: (NIL)**							
Number	**Competency & SLOs** (At the end of the session, student shall be able to: ……..)	**Domain**	**Millers pyramid level**	**core**	**T&L Methods**	**Assessment methods**	**Integration**
IM 7.1	**Describe the pathophysiology of autoimmune disease** 7.1.1.Describe auto immunedisease. 7.1.2.Describe the pathophysiology of auto immunedisease .	K	KH	Y	Lecture	Written/ Viva voce	Pathology
IM 7.2	**Describe the genetic basis of autoimmune disease** 7.2.1. Describe the genetic basis of auto immune disease.	K	KH	N	Lecture	Written/ Viva voce	Pathology
IM 7.3	**Classify causes of joint pain based on the pathophysiology** 7.3.1.Enumerate the causes of joint pains. 7.3.2.Describe the classification of joint pains based on the pathophysiology.	K	KH	Y	Lecture	Written/ Viva voce	
IM 7.4	**Develop a systematic clinical approach to joint pain based on the pathophysiology** 7.4.1.Describe the approach to the joint pains based on the pathophysiology.	K	KH	Y	Lecture	Written/ Viva voce	

IM 7.5	**Describe and discriminate acute, subacute and chronic causes of joint pain** 7.5.1.Enumerate the causes of acute joint pains, subacute joint pains and chronic joint pains. 7.5.2.Describe the diagnostic significance of duration of joint pain.	K	KH	Y	Lecture	Written/ Viva voce	
IM 7.6	**Discriminate, describe and discuss arthralgia from arthritis and mechanical from inflammatory causes of joint pain** 7.6.1.List the difference between arthralgia and arthritis. 7.6.2.Enumerate the causes of inflammatory joint pains. 7.6.3.Enumerate the causes of mechanical joint pains	K	KH	Y	Lecture	Written/ Viva voce	
IM 7.7	**Discriminate, describe and discuss distinguishing articular from periarticular complaints** 7.7.1.Enumerate the clinical difference between articular and periarticular pain. 7.7.2.Enumerate the causes of articular and periarticular joint pains.	K	KH	Y	Lecture	Written/ Viva voce	
IM 7.8	**Determine the potential causes of joint pain based on the presenting features of joint involvement** 7.8.1.Enumerate the causes of large joint pains. 7.8.2.Enumerate the causes of small joint pains.	K	KH	Y	Lecture	Written/ Viva voce	
IM 7.9	**Describe the common signs and symptoms of articular and periarticular diseases**	K	KH	Y	Lecture	Written/ Viva voce	

	7.9.1.Enumerate signs and symptoms of articular joint pain. 7.9.2.Enumerate signs and symptoms of periarticular joint pains						
IM 7.10	**Describe the systemic manifestations of rheumatologic disease**	K	KH	Y	Lecture	Written/ Viva voce	
	7.10.1.Describe the clinical features of Rheumatoid Arthritis. 7.10.2.Enumerate the diagnostic criteria for Rheumatoid Arthritis. 7.10.3.Describe the extra articular manifestations of Rheumatoid Arthritis.						

IM 7.16	**Enumerate the indications for arthrocentesis**	K	K	Y	Lecture	Written/ Viva voce	
	7.16.1.Enumerate the indications of arthrocentesis. 7.16.2.Describe the findings in synovial fluid in various arthritis						
IM 7.19	**Develop an appropriate treatment plan for patients with rheumatologic diseases**	K	KH	Y	Lecture	Written	
	7.19.1.Describe the treatment of Rheumatoid Arthritis and SLE.						
IM 7.23	**Describe the basis for biologic and disease modifying therapy in rheumatologic diseases**	K	KH	Y	Lecture	Written	Pharmacology

	7.23.1.Describe and list DMARDS. 7.23.2.Describe the biologics in Disease modifying treatment of RA. 7.23.3. Describe MOA of : INF inhibin (Infliximab, Etarnacept) IL-1 blocker, anti T cell, Anti B cell.						

Topic:7. Acute Kidney Injury and chronic renal failure Number of competencies: (17) Number of procedures that require certification: (NIL)							
Number	**<u>Competency & SLOs</u>** (At the end of the session, student shall be able to: ……..)	**Domain**	**Millers pyramid level**	**core**	**T&L Methods**	**Assessment methods**	**Integration**
IM 10.1	Define, describe and differentiate between acute and chronic renal failure	K	KH	Y	Lecture	Long/short essay/MCQs	Pathology
	10.1.1. Define acute renal failure correctly. 10.1.2. Define chronic renal failure correctly. 10.1.3. Describe epidemiology of acute renal failure. 10.1.4. Describe epidemiology of chronic renal failure. 10.1.5. Differentiate between acute and chronic renal failure accurately.						
IM 10.2	**Classify, describe and differentiate the pathophysiologic causes of acute renal failure**	K	KH	Y	Lecture	Long/Short essay/MCQs	Pathology

	10.2.1. Classify acute renal failure as pre-renal, renal and post-renal correctly. 10.2.2. Describe and differentiate the pathophysiologic causes of acute renal failure correctly.						
IM 10.3	**Describe the pathophysiology and causes of pre renal ARF, renal and post renal ARF**	K	KH	Y	Lecture	Short note/ Short essay/MCQs	Pathology
	10.3.1. Describe the pathophysiology of prerenal ARF correctly. 10.3.2. Describe the pathophysiology of renal ARF correctly. 10.3.3. Describe the pathophysiology of post renal ARF correctly. 10.3.4. Describe the causes of prerenal ARF accurately. 10.3.5. Describe the causes of renal ARF accurately**.** 10.3.6. Describe the causes of post renal ARF accurately.						
IM 10.4	**Describe the evolution, natural history and treatment of ARF**	K	KH	Y	Lecture	Short essay/MCQs	Pathology
	10.4.1. Describe the evolution of ARF, including its complications correctly. 10.4.2. Describe the natural history of ARF**.** 10.4.3. Describe the treatment of ARF accurately						
IM 10.5	**Describe and discuss the aetiology of CRF**	K	KH	Y	Lecture	Short essay/MCQs	Pathology

	10.5.1 Describe and discuss in detail the various aetiologies of CRF correctly.						
IM 10.6	**Stage Chronic Kidney Disease**	K	KH	Y	Lecture	Short essay/MCQs	Pathology
	10.6.1. Classify stages of CKD (by calculating eGFR using different formulae and degree of albuminuria) accurately.						
IM 10.7	**Describe and discuss the pathophysiology and clinical findings of uraemia**	S	SH	Y	Lecture	Short essay/MCQs	Pathology
	10.7.1 Describe the pathophysiology of uraemia and azotemia correctly. 10.7.2. Discuss the clinical features of uraemia correctly						
IM 10.8	**Classify, describe and discuss the significance of proteinuria in CKD**	K	KH	Y	Lecture	Short essay/MCQs	pathology
	10.8.1. Classify the degree of proteinuria in CKD accurately. 10.8.2.Classify, describe and discuss the significance of proteinuria in CKD						
IM 10.9	**Describe and discuss the pathophysiology of anemia and hyperparathyroidism in CKD**	K	KH	Y	Lecture	Short essay/MCQs	Pathology
	10.9.1.Describe and discuss the pathophysiology of anemia, laboratory diagnosis and principles behind its treatment in CKD correctly. 10.9.2. Describe and discuss the pathophysiology of hyperparathyroidism, its laboratory diagnosis and treatment of the same in CKD correctly.						

IM 10.10	**Describe and discuss the association between CKD glycemia and hypertension**	K	KH	Y	Lecture	Short essay/MCQs	pathology
	10.10.1. Describe and discuss the importance of association between CKD, diabetes and hypertension correctly.						
IM 10.18	**Identify the ECG findings in hyperkalemia**	S	SH	Y	Lecture	Short essay/MCQs	Pathology
	10.18.1**.** Identify the ECG findings in hyperkalemia accurately.						
IM 10.19	**Enumerate the indications and describe the findings in renal ultrasound**	K	KH	N	Lecture	Short essay/MCQs	Radiodiagnosis
	10.19.1.Enumerate the indications of renal ultrasound. 10.19.2. Describe the findings in renal ultrasound, in normalcy and in AKI and CKD, with regard to renal size, corticomedullary differentiation, hydronephrosis and renal stones						
IM 10.25	**Identify and describe the priorities in the management of ARF including diet, volume management, alteration in doses of drugs, monitoring and indications for dialysis**	K/C	KH	Y	Lecture	Long/short essay /MCQs	Pharmacology
	10.25.1.Identify the priorities in the management of ARF correctly. 10.25.2. Discuss the management of ARF with respect to						

	a) Diet, b) Volume management, c) Alteration in doses of drugs and d) Monitoring of the patient. 10.25.3. Describe and identify the indications for dialysis correctly						
IM 10.26	**Describe and discuss supportive therapy in CKD including diet, antihypertensives, glycemic therapy, dyslipidemia, anemia, hyperkalemia, hyperphosphatemia and secondary hyperparathyroidism**	K	KH	Y	Lecture	Long/Short essay /MCQs	Nil
	10.26.1.Describe and discuss about the supportive treatment in CKD including the following, correctly: a. Diet b. Antihypertensives and target blood pressure c. Glycemic control d. Dyslipidemia and role of statins e. Anemia f. Hyperkalemia g. Hyperphosphatemia h. Secondary hyperparathyroidism						
IM 10.27	**Describe and discuss the indications for renal dialysis**	C/A	KH	Y	Lecture	Long/short essay /MCQs	Nil

	10.27.1. Describe, discuss and communicate the indications of renal dialysis correctly.						
IM 10.28	**Describe and discuss the indications for renal replacement therapy**	C	KH	Y	Lecture	Long/short essay /MCQs	Nil
	10.28.1.Describe the various modalities of renal replacement therapy correctly. 10.28.2. Describe, discuss and communicate the indications for renal replacement therapy correctly						
IM 10.29	**Describe discuss and communicate the ethical and legal issues involved in renal replacement therapy**	CA	KH	Y	Lecture	Short essay/MCQs	Nil
	10.29.1. Demonstrate understanding of ethical issues involved in renal replacement therapy correctly. 10.29.2. Communicate and inform the legal issues involved in renal replacement therapy						

Topic 8: Headache **Number of competencies: (4)** **Number of procedures that require certification: (1)**							
Number	**<u>Competency & SLOs</u>** (At the end of the session, student shall be able to: ……..)	**Domain**	**Millers pyramid level**	**core**	**T&L Methods**	**Assessment methods**	**Integration**
IM 17.10	**Discuss and describe the indications for emergency care admission and immediate supportive care in patients with headache**	K	KH	Y	Lecture	Short answers / MCQs	Ophthalmology / ENT / Neurology
	17.10.1. Discuss the indications for admission to a emergency care unit 17.10.2.Describe the supportive therapy for a patient with headache						
IM 17.11	**Discuss the indications, pharmacology, dose, side effects of abortive therapy in migraine**	K	KH	Y	Lecture	Short essay / MCQs	Pharmacology / Neurology
	17.11.1.Discuss the indications, pharmacology, dose, side effects of abortive therapy in migraine correctly						
IM 17.12	**Discuss the indications, pharmacology, dose, side effects of prophylactic therapy in migraine**	K	KH	Y	Lecture	Short essay/ MCQs / viva voce	Pharmacology
	17.12.1.Discuss the indications, pharmacology, dose, side effects of prophylactic therapy in migraine correctly.						

IM 17.13	**Discuss the pharmacology, dose, adverse reactions and regimens of drugs used in the treatment of bacterial, tubercular and viral meningitis**	K	KH	Y	Lecture	Long essay/ MCQs/ viva voce	Pharmacology , Microbiology
	17.13.1.Discuss the pharmacology, dose, adverse reactions and regimens of drugs used in the treatment of bacterial, tubercular and viral meningitis correctly.						

Topic 9: CVA **Number of competencies: (11) Number of procedures that require certification: (NIL)**							
Number	**<u>Competency & SLOs</u>** (At the end of the session, student shall be able to: ……..)	**Domain**	**Millers pyramid level**	**core**	**T&L Methods**	**Assessment methods**	**Integration**
IM 18.1	**Describe the functional and the vascular anatomy of the brain**	K	KH	Y	Lecture	Long/short essay/MCQs	Anatomy
	18.1.1. Define anatomy of brain 18.1.2. Describe the different parts of brain and their functions 18.1.3. Describe the arterial supply of brain 18.1.4. Describe the Dural venous sinuses 18.1.5. Describe the venous drainage of the brain 18.1.6. Describe circle of Willis 18.1.7. Report the most common sites of the brain involved in CVA						

IM 18.2	**Classify cerebrovascular accidents and describe the etiology, predisposing genetic and risk factors pathogenesis of hemorrhagic and non hemorrhagic stroke**	K	KH	Y	Lecture	Long/Short essay/MCQs	Pathology
	18.2.1. Define stroke 18.2.2. Define hemorrhagic and non hemorrhagic stroke 18.2.3. Distinguish ischemic stroke from hemorrhagic stroke 18.2.4. Describe the pathogenesis of hemorrhagic and non hemorrhagic stroke 18.2.5. Enumerate the causes for hemorrhagic and non-hemorrhagic stroke 18.2.6. Enumerate the risk factors for hemorrhagic stroke 18.2.7. Enumerate the risk factors for non hemorrhagic stroke 18.2.8. Discuss the clinical features of hemorrhagic and non hemorrhagic stroke 18.2.9. Discuss the role of genetics in etiology of cerebrovascular accident						
IM 18.8	**Describe and distinguish, based on the clinical presentation, the types of bladder dysfunction seen in CNS disease**	K	KH	Y	Lecture	Long /Short essay/MCQs	Physiology
	18.8.1. Describe autonomic nerve supply of bladder. 18.8.2. Describe somatic nerve supply of						

	bladder. 18.8.3. Define spastic bladder. 18.8.4.Define neurogenic bladder. 18.8.5.Define hypotonic bladder. 18.8.6.Define motor paralytic bladder 18.8.7.Define sensory paralytic bladder 18.8.8.Distinguish between various types of bladder dysfunction based on site of lesion. 18.8.9.Describe the various bladder dysfunction in CNS disorders.						
IM 18.9	**Choose and interpret the appropriate diagnostic and imaging test that will delineate the anatomy and underlying cause of the lesion**	K	KH	Y	Lecture	OSCE	Radiodiagnosis
	18.9.1.Define CT Brain and list indications 18.9.2.Define MRI Brain and list indications 18.9.3.Define CTA 18.9.4.Define MRA 18.9.5.Identify the appropriate diagnostic tests to delineate the anatomy of lesion. 18.9.6.Choosing the appropriate imaging test to find the cause of lesion.						
IM 18.10	**Choose and interpret the appropriate diagnostic testing in young patients with a cerebrovascular accident (CVA)**	K	KH	Y	Lecture	Short essay/MCQs	
	18.10.1. list the causes for stroke in young. 18.10.2. Choose the appropriate imaging in a young patient of CVA. 18.10.3. Interpret the various findings in imaging of a young CVA.						
IM 18.11	**Describe the initial supportive management of a patient presenting**	K	KH	Y	Lecture	Short essay/MCQs	

	with a cerebrovascular accident (CVA)						
	18.11.1. Describe emergency management of a patient presenting with cerebrovascular accident. 18.11.2. Discuss initial supportive management of unconscious patient.						
IM 18.12	**Enumerate the indications for and describe acute therapy of non - haemorrhagic stroke including the use of thrombolytic agents**	K	KH	Y	Lecture	Short essay/MCQs	
	18.12.1. Enumerate indications of thrombolysis in non-haemorrhagic stroke patients. 18.12.2. List the contraindications for thrombolytic therapy 18.12.3. Describe the mechanism of action of various thrombolytic agents.						
IM 18.13	**Enumerate the indications for and describe the role of anti-platelet agents in non-hemorrhagic stroke**	K	KH	Y	Lecture	Short essay/MCQs	
	18.13.1. Describe antiplatelet drugs used in non -hemorrhagic stroke patients. 18.13.2. Enumerate the indications of antiplatelet agents in non- hemorrhagic stroke patients. 18.3.3. Discuss mechanism of action of various antiplatelet drugs used in non-hemorrhagic stroke.						

IM 18.14	**Describe the initial management of a haemorrhagic stroke**	K	KH	Y	Lecture	Short essay/MCQs	
	18.14.1. Emergency management of a patient diagnosed with haemorrhagic stroke 18.14.2. Identify a patient of hemorrhagic stroke on the basis of presenting clinical features. 18.14.3. Choose appropriate imaging modality for early diagnosis of haemorrhagic stroke.						
IM 18.15	**Enumerate the indications for surgery in a hemorrhagic stroke**	K	KH	Y	Lecture	Short essay/MCQs	General surgery
	18.15.1. Enlist indications for embolization. 18.15.2. Enumerate indications for endovascular repair. 18.15.3. Discuss indications for aneurysm clipping. 18.15.4. Discuss indications for aneurysm coiling.						

Topic: 10. Movement Disorders **Number of competencies: (04) Number of procedures that require certification: (NIL)**						
<u>Competency & SLOs</u> (At the end of the session, student shall be able to: ……..)	**Domain**	**Millers pyramid level**	**core**	**T&L Methods**	**Assessment methods**	**Integration**
IM19.1	**Describe the functional anatomy of the locomotor system of the brain**	K	KH	Y	Lecture, Small group discussion	Short notes Viva voce	Anatomy, Physiology
	19.1.1 Describe the functional anatomy of locomotor system 19.1.2 Discuss blood supply of brain						
IM19.2	**Classify movement disorders of the brain based on distribution, rhythm, repetition, exacerbating and relieving factors**	K	KH	Y	Lecture, Small group discussion	Short essay Viva voce	

IM 19.8	**Discuss and describe the pharmacology, dose, side effects and interactions used in the drug therapy of Parkinson's syndrome**	K	KH	Y	Lecture, Small group discussion	Written/Viva voce	Pharmacology
	19.8.1.Describe Parkinson's Syndrome. 19.8.2.Classify important drugs used in Parkinson's. 19.8.3.List the side effects of drugs.						

IM 19.9	**Enumerate the indications for use of surgery and botulinum toxin in the treatment of movement disorders**	K	KH	Y	Lecture, Small group discussion	Written/Viva voce	Pharmacology / General Surgery
	19.9.1.Describe the role of surgery in Parkinson's disease. 19.9.2.Define role of botulinum toxin in movement disorders.						

Topic: 11. Geriatrics **Number of competencies: (22)** **Number of procedures that require certification: (NIL)**							
Number	**Competency & SLOs** (At the end of the session, student shall be able to: ……..)	**Domain**	**Millers pyramid level**	**core**	**T&L Methods**	**Assessment methods**	**Integration**
IM 24.1	**Describe and discuss the epidemiology ,pathogenesis ,clinical evolution, presentation and course of common diseases in elderly**	K	KH	Y	Lecture	short essay / viva voce/ MCQs	Geriatrics
	24.1.1.Describe the common disease pattern and pathogenesis of infections , parkinsons, haematological, and cardiovascular, and COPD diseases in the elderly . 24.1.2.Describe the atypical presentation of symptoms 24.1.3.Describe and elicit the signs and in the presence of aging process 24.1.4.Able to create a problem list and						

	care plan . 24.1.5.Enumerate the diagnostic methodologies which is relevant to the disease						
IM 24.2	**multidimensional geriatric assessment that includes medical, psycho-social and functional components**	K	KH	Y	Lecture	Skill assessment	Physiotherapy , Geriatric CGAclinic
	24.2.1.Define comprehensive geriatric assessment and have knowledge of various who tools 24.2.2.Describe the issues based on the assessment tools 24.2.3.Assess QOL based on the outcome of the tools						
IM 24.3	**Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of acute confusional states**	K	KH	Y	Lecture	written	EMD/Geriatric / Medicine
	24.3.1.Define delirium, dementia and psychosis . organic brain syndrome, and understand the cardinal manifestation of delirium. 24.3.2.Gain an overview of the predisposing factors esp drugs causing path physiology in elderly in relation to substance withdrawl and other causes 24.3.3.Describe the symptoms and signs of delirium and use of appropriate scales[CAM] of delirium 24.3.4.Know the essential components of						

	basic diagnostic assessment of delirium. 24.3.5.Become acquainted with the options of treatment and rehabilitation of acute confusional state						
IM 24.4	**Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of vascular events in the elderly** 24.4.1.Define vascular events 24.4.2.Describe all the causes and etiopathogenesis of vascular events in elderly 24.4.3.Describe the atypical symptoms and signs of presentation 24.4.4.Describe the acute care management in old old and oldest old 24.4.5.Describe the appropriate long term pharmacological management and rehabilitation with physiotherapy, feeding and fall prevention	K	KH	Y	Lecture	written	Neurology/ Geriatric/ Physiotherapy
IM 24.5	**Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of depression in the elderly**	K	KH	Y	Lecture	written	Psychiatry, Geriatrics, physiotherapy

	24.5.1.Define depression ,and assess the risk factors in elderly ,including reactive depression 24.5.2.Describe all the causes and etiopathogenesis of depression in elderly 24.5.3.Describe the atypical symptoms and signs of presentation and grade depression using geriatric depression scale. 24.5.4.Describe the acute care management in old old and oldest old 24.5.5.Describe the appropriate long term pharmacological management and rehabilitation with counseling , prevention of suicide and carer advice.						
IM 24.6	**Describe and discuss the aetiopathogenesis causes, clinical presentation, difference in discussion presentation identification, functional changes, acute care, stabilization, management and rehabilitation of dementia in the elderly** 24.6.1.Define dementia ,and assess the risk factors in elderly ,including reactive depression 24.6.2.Describe all the causes and etiopathogenesis of dementia in elderly 24.6.3.Describe the atypical symptoms and signs of presentation and grading of dementia using Mini COG and MMSE scales 24.6.4.Describe the acute care management in old old and oldest old	K	KH	Y	Lecture	written	Psychiatry, Geriatrics, physiotherapy

	24.6.5.Describe the appropriate long term pharmacological management and rehabilitation with counseling , prevention of self harm and injury , Memory exercises and carer advice.						
IM 24.7	**Describe and discuss the aetiopathogenesis, clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of personality changes in the elderly.** Define psychosis ,and assess the risk factors in elderly ,including personality changes Describe all the causes and etiopathogenesis of psychosis in elderly Describe the atypical symptoms and signs of presentation . Describe the acute care management in old old and oldest old Describe the appropriate long term pharmacological management and rehabilitation with counseling , prevention of self harm and injury .	K	KH	Y	Lecture	written	Psychiatry, Geriatrics, physiotherapy
IM 24.8	**Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of osteoporosis in the elderly**	K	KH	Y	Lecture	written	Orthopedics, Geriatrics, Physiotherapy

	24.8.1.Define osteoporosis ,and assess the risk factors in elderly and assessment of aches and pain 24.8.2.Describe all the causes and etiopathogenesis of osteoporosis in elderly ; 24.8.3.Describe the atypical symptoms and signs of presentation , evaluation of severity . 24.8.4.Describe the acute care management in old old and oldest old. 24.8.5.Describe the appropriate long term pharmacological management and rehabilitation with AIDS and physiotherapy , prevention of fall injury .						
IM 24.9	**Describe and discuss the aetiopathogenesis clinical presentation Describe and discuss the aetiopathogenesis,clinical presentation, K KH Y Lecture Small group Written/ Viva voce identification, functional changes, acute care, stabilization, management and rehabilitation of CVA in the elderly** 24.9.1.Define CVA ,and assess the risk factors in elderly . 24.9.2.Describe all the causes and etiopathogenesis of CVA in elderly ; 24.9.3.Describe the atypical symptoms and signs of presentation , evaluation . 24.9.4.Describe the acute care management in old old and oldest old.	K	KH	Y	Lecture	written	Neurology, Geriatrics, Physiotherapy

	24.9.5.Describe the appropriate long term pharmacological management and rehabilitation with AIDS and physiotherapy , prevention of fall injury .						
IM 24.10	**Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of COPD in the elderly** 24.10.1.Define COPD ,and assess the risk factors in elderly , including age related changes 24.10.2.Describe all the causes and etiopathogenesis of COPD in elderly ; 24.10.3.Describe the atypical symptoms and signs of presentation , evaluation , of respiratory failure. 24.10.4.Describe the acute care management in old old and oldest old, bedside tests, hand held spirometry 24.10.5.Describe the appropriate long term pharmacological management and rehabilitation with home care and physiotherapy , vaccination in elderly	K	KH	Y	Lecture	written	Pulmonology, Geriatrics, Physiotherapy
IM 24.11	**Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of the elderly undergoing surgery** 24.11.1.Define pre operative assessment in elderly assess the risk factors of	K	KH	Y	Lecture.	written	Anesthesia, General Surgery, Geriatrics, Physiotherapy

	surgey in elderly , including age related risk factors 24.11.2.Describe a the assessment tools [sort and optimal assessment tools]used for preoperative assessment in elderly o 24.11.3.Describe , evaluation ,and stabilization of patient before surgery , blood sugar control, blood pressure control, correction of dehydration. 24.11.4.Describe the rehabilitation and physiotherapy before and after surgery						
IM 24.12	**Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of degenerative joint disease** 24.12.1.Define Degenerative joint diseases in elderly , mainly osteoarthritis, 24.12.2.Describe a the history clinical examination of a patient with osteoarthritis,, X ray evaluation of osteoarthritis. 24.12.3.Describe , evaluation ,and stabilization of patient coming with acute osteoarthritis . Pain relief measures. Intra articular injections. 24.12.4.Describe the rehabilitation and physiotherapy , fall risk assessment. Fall prevention.. Assessment for knee replacement.	K	KH	Y	Lecture	written	Orthopedics, Geriatrics, Physiotherapy

IM 24.13	**Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of falls in the elderly**	K	KH	Y	Lecture.	written	Orthopedics, Geriatrics, Physiotherapy
	24.13.1.Describe risk factors of fall in elderly system wise 24.13.2.Describe a etiopathogenesis of balance in elderly and describe the symptoms of pre fall and clinical examination of a patient with fall. Assessment of fall risk using scales. 24.13.3.Describe , evaluation ,and stabilization of patient coming with fall . 24.13.4.Describe the rehabilitation and physiotherapy , fall risk assessment. Fall prevention, appropriate AID to be used and home remedies to prevent fall.						
IM 24.14	**Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of common fractures in the elderly**	K	KH	Y	Lecture.	written	Orthopedics, Geriatrics, Physiotherapy
	24.14.1.Describe risk factors of fractures in elderly system wise 24.14.2.Describe a etiopathogenesis of balance in elderly and describe the symptoms of fractures including compression fractures and clinical examination of a patient with fracture. Assessment of fall risk using scales.						

	24.14.3.Describe , evaluation ,and stabilization of patient coming with fracture including using of splint.. 24.14.4.Describe the rehabilitation and physiotherapy , fall risk assessment. Fall prevention, appropriate AID to be used and home remedies to prevent fall. Pharmacological management for osteoporosis.						
IM 24.15	**Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of vision and visual loss in the elderly** 24.15.1.Describe vision loss in elderly, including risk factors system wise, acute and chronic. 24.15.2.Describe a etiopathogenesis of vision in elderly and describe the symptoms of acute and chronic vision loss including glaucoma ,optic neuritis, macular degeration. clinical examination of a patient with vision impairment . Assessment of vision loss . 24.15.3.Describe , evaluation ,and stabilization of patient coming with vision loss . 24.15.4.Describe the rehabilitation ,fall risk assessment ,appropriate AID to be used and home remedies to prevent fall. Pharmacological management of glucoma	K	KH	Y	Lecture	written	Orthopedics, Geriatrics, Physiotherapy

IM 24.16	**Describe and discuss the principles of physical and social rehabilitation, functional assessment, role of physiotherapy and occupational therapy in the management of disability in the elderly** 24.16.1.Describe comprehensive geriatric assessment 24.16.2.Describe principals of physical , functional, social rehabilitation by using appropriate tools of assessment. 24.16.3.Assess Quality of life, frailty and level of dependency 24.16.4.Describe the rehabilitation , counseling , physiotherapy, use of AIDS to carry out daily activities.	S	SH	Y	Lecture	written	Orthopedics, Geriatrics, Physiotherapy
IM 24.17	**Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of hearing loss in the elderly** 24.17.1.Describe hearing loss in elderly ,including risk factors system wise 24.17.2.Describe a etiopathogenesis of hearing loss in elderly and describe the symptoms of acute and chronic hearing loss . Assessment of type of hearing loss including miners disease 24.17.3.Clinical examination of a patient with hearing Impairment . Assessment of	K	KH	Y	Lecture	written	ENT, Geriatrics, Physiotherapy

	hearing loss . 24.17.4.Describe , evaluation ,and stabilization of patient coming with hearing loss and assessment of vertigo 24.17.5.Describe the rehabilitation ,fall risk assessment ,appropriate AID to be used and knowledge of drugs which can worsen hearing loss.						
IM 24.18	**Describe the impact of the demographic changes in ageing on the population** 24.18.1.Describe demographic change in the aging population in INDIA elderly , 24.18.2.Describe the impact of this chance on social structure of the society and socioeconomic burden and consequences on social , financial and health outcomes of the elderly.	K	KH	Y	Lecture.	written	Community medicine, Geriatrics, Physiotherapy
IM 24.19	**Enumerate and describe the social problems in the elderly including isolation, abuse, change in family structure and their impact on health** 24.19.1.Enumerate the social problems due to demographic change in the aging population in INDIA elderly , 24.19.2.Describe the impact of this chance on elderly abuse 24.19.3.Effect of this on the out comes of health and causes of non compliance of medical advice .	K	KH	Y	Lecture	Written	Community medicine, Geriatrics, Physiotherapy

IM 24.20	**Enumerate and describe social interventions in the care of elderly including domiciliary discussion services, rehabilitation facilities, old age homes and state interventions** 24.20.1.Enumerate the social interventions due in INDIA elderly , 24.20.2.Describe the government measure including day care centers. 24.20.3.Role of elderly	K	KH	Y	Lecture	Written	Geriatrics
IM 24.21	**Enumerate and describe ethical issues in the care of the elderly** 24.21.1.Enumerate the ethical issues like resuscitation , palliative care end of life care due in INDIA elderly , 24.21.2.Describe the ethical issues in decision making in a elderly with cognition impairment.	K	KH	Y	Lecture	Written	Geriatrics, Community Medicine
IM 24.22	**Describe and discuss the aetiopathogenesis, clinical presentation, complications, assessment and management of nutritional disorders in the elderly** 24.22.1.Enumerate the etiopathiogenesis of nutritional deficiency in elderly and assess the risk factors including , dental issues, loss of taste , occult malignancy , medication. 24.22.2.Describe the use of nutritional assessment scale and assessment of frailty and sacrcopenia. 24.22.3.Describe the appropriate investigation and management	K	KH	Y	Lecture	Written	Geriatrics, Community Medicine

<u>Bedside clinics</u> continue with the topics-competencies of bedside teaching along with their further intensification (History taking-physical examination in CVS, RS, Abdomen, CNS, Rheumatology, Miscellaneous-endocrine. infections etc. & management of diseases pertaining to these systems). In addition to these and in alignment with the lecture classes & other topics of III MBBS Part II, the following competencies also, have been included:

IM1.10	**Elicit document and present an appropriate history that will establish the diagnosis, cause and severity of heart failure including: presenting complaints, precipitating and exacerbating factors, risk factors exercise tolerance, changes in sleep patterns, features suggestive of infective endocarditis**	S	SH	Y	Bedside clinic	Long case	
	1.10.1.Identify heart failure. 1.10.2.Present an appropriate history to establish severity of heart failure. 1.10.3. Present an appropriate history to decide causes of heart failure. 1.10.4. Describe presenting complaints of heart failure. 1.10.5.Enumerate the precipitating factors of heart failure. 1.10.6.Define exercise tolerance. 1.10.7.List the changes in sleep patterns in heart failure. 1.10.8.Describe the clinical features of infective endocarditis						

IM1.11	**Perform and demonstrate a systematic examination based on the history that will help establish the diagnosis and estimate its severity including: measurement of pulse, blood pressure and respiratory rate, jugular venous forms and pulses, peripheral pulses, conjunctiva and fundus, lung, cardiac examination including palpation and auscultation with identification of heart sounds and murmurs, abdominal distension and splenic palpation**	S	SH	Y	Bedside clinic, DOAP session	long case	
	1.11.1.Demonstrate pulse examination. 1.11.2.Demonstrate blood pressure examination. 1.11.3.Demonstrate respiratory rate. 1.11.4.Demonstrate jugular venous pulse. 1.11.5.Demonstrate peripheral pulses. 1.11.6.Demonstrate respiratory sounds. 1.11.7.Demonstrate apex beat. 1.11.8.Identify cardiac areas. 1.11.9.Identify cardiac sounds. 1.11.10.Identify cardiac murmurs. 1.11.11.Document abdominal distension. 1.11.12.Demonstrate splenic examination						
IM1.12	**Demonstrate peripheral pulse, volume, character, quality and variation in various causes of heart failure**	S	SH	Y	Bedside clinic, DOAP session	short case	
	1.12.1.Demonstrate peripheral pulses. 1.12.2.Describe pulse volume. 1.12.3.Describe pulse character						

IM1.13	**Measure the blood pressure accurately, recognise and discuss alterations in blood pressure in valvular heart disease and other causes of heart failure and cardiac tamponade**	S	SH	Y	Bedside clinic, DOAP session	Short case	
	1.13.1 Demonstrate blood pressure measurement. 1.13.2 Discuss alterations in blood pressure in valular heart disease. 1.13.3 Discuss cardiac tamponade.						
IM1.14	**Demonstrate and measure jugular venous distension**	S	SH	Y	Bedside clinic, DOAP session	Short case	
	1.14.1 Demonstrate jugular venous pressure measurement. 1.14.2 Differentiate between external and internal jugular vein. 1.14.3 Differentiate between arterial and venous pulsation.						
IM1.15	**Identify and describe the timing, pitch quality conduction and significance of precordial murmurs and their variations**	S	SH	Y	Bedside clinic, DOAP session	Short case	

	1.15.1 Identify the timing of murmurs, 1.15.2 Identify the pitch of murmurs. 1.15.3 Identify the conduction of murmurs. 1.15.4 Describe the timing of murmurs. 1.15.5 Describe the pitch of murmurs. 1.15.6 Describe the conduction of murmurs. 1.15.7 Differentiate systolic and diastolic murmurs. 1.15.8 Differentiate murmur of mitral and tricuspid regurgitation.						
IM1.16	**Generate a differential diagnosis based on the clinical presentation and prioritise it based on the most likely diagnosis**	K	KH	Y	Bedside clinic, Small group discussion	Long case Viva voce	
	1.16.1Differentiate mitral stenosis and mitral valve prolapse. 1.16.2 Discuss clinical features of aortic regurgitation. 1.16.3Enumerate different murmurs. 1.16.4 Describe murmur of aortic stenosis.						
IM1.17	**Order and interpret diagnostic testing based on the clinical diagnosis including 12 lead ECG, Chest radiograph, blood cultures**	K	SH	Y	Bedside clinic, DOAP session	Viva voce	

	1.17.1 Enumerate investigations for diagnosis of heart failure. 1.17.2 Discuss ECG. 1.17.3 Identify ECG changes. 1.17.4 Describe findings in chest X-ray. 1.17.5 Discuss blood culture.						
IM1.18	**Perform and interpret a 12 lead ECG**	S	P	Y	Bedside clinic, DOAP session	Skill assessment	
	1.18.1 Demonstrate 12 lead ECG. 1.18.2 Perform under supervision 12 lead ECG. 1.18.3 Document changes in ECG.						

IM1.22	**Assist and demonstrate the proper technique in collecting specimen for blood culture**	S	SH	Y	DOAP session	Skill assessment	Microbiology
	1.22.1 Demonstrate technique of collecting specimen for blood culture in sterile condition. 1.22.2 Perform under supervision.						
IM1.23	**Describe, prescribe and communicate non pharmacologic management of heart failure including sodium restriction, physical activity and limitations**	S/C	SH	Y	Lecture, Small group discussion	Short notes	

	1.23.1 Describe non-pharmacologic management of heart failure. 1.23.2. Discuss normal sodium intake. 1.23.3. Discuss physical activity and its limitations						

IM1.26	**Develop document and present a management plan for patients with heart failure based on type of failure, underlying aetiology**	S	SH	Y	Bedside clinic, Skill assessment, Small group discussion	Long case	
	1.26.1 Identify different types of heart failure. 1.26.2 Discuss etiology of heart failure. 1.26.3 Document management plan for patients with heart failure. 1.26.4 Counsel the patient of heart failure.						

IM1.29	**Elicit document and present an appropriate history, demonstrate correctly general examination, relevant clinical findings and formulate document and present a management plan for an adult patient presenting with a common form of congenital heart disease**	K	KH	Y	Bedside clinic	Short case	

	1.29.1Present history of a patient of ventricular septal defect. 1.29.2 Identify the clinical features. 1.29.3 Identify the murmur of ventricular septal defect. 1.29.4 Document the clinical findings. 1.29.5 Document management plan for ventricular septal defect.						
IM1.30	**Administer an intramuscular injection with an** **appropriate explanation to the patient**	S	SH	Y	Bedside clinic, Skill assessment	Log book documentation of completion	Pharmacology
	1.30.1Define an intramuscular injection. 1.30.2 Counsel the patient for injection. 1.30.3 Define the correct sites of injection. 1.30.4 Document an intramuscular injection. 1.30.5 Perform under supervision intramuscular injection.						

IM 5.9	**Elicit document and present a medical history that helps delineate the aetiology of the current presentation and includes clinical presentation, risk factors, drug use, sexual history, vaccination history and family history**	S	SH	Y	Bedside clinic/DOAP session	Short/long case	

IM 5.10	**Perform a systematic examination that establishes the diagnosis and severity that includes nutritional status, mental status, jaundice, abdominal distension ascites, features of portosystemic hypertension and hepatic encephalopathy**	S	SH	Y	Bedside clinic/DOAP session	Short case /long case	General surgery
	5.10.1. Demonstrate nutritional status, mental status, jaundice in case of liver disease. 5.10.2. Demonstrate inspection, palpation and percussion in abdominal examination 5.10.3. Present features of portosystemic hypertension 5.10.4. Elicit signs of hepatic encephalopathy						
IM 5.11	**Generate a differential diagnosis of portal hypertension based on the clinical presentation and prioritize it based on the most liely diagnosis**	K	KH	Y	Bedside clinic/Small group discussion	Short notes short case	
	5.11.1. Generate a differential diagnosis of portal hypertension based on the clinical presentation accurately. 5.11.2. Present the differential diagnosis according to priority, giving reasons for the same accurately.						

IM5.15	**Assist in the performance and interpret the findings of an ascitic fluid analysis**	S	KH	Y	DOAP session	Viva voce	Microbiology Pathology

IM 15.4	**Elicit and document and present an appropriate history that identifies the route of bleeding, quantity, grade, volume loss, duration, etiology, comorbid illnesses and risk factors.** 15.4.1.Elicit all the history which helps to identify the source of bleeding and its amount and grade as well as the duration of the GI bleed. 15.4.2 Elicit all the history which helps to identify the co morbid illness associated with GI bleed. 15.4.3.Elicit all the history which helps to identify the risk factors as well as etiology of GI bleed	S	SH	Y	Bedside clinic	OSCE	General surgery
IM 15.5	**Perform , demonstrate and document a physical examination based on the history that includes general examination, volume assessment and appropriate abdominal examination.** 15.5.1.Demonstrate the steps involved in general physical examination based on history. 15.5.2.Demonstrate the methods involved in assessing volume loss. 15.5.3.Demonstrate the steps involved in examination of per abdomen.	S	SH	Y	Bedside clinic	Skill assessment	General surgery
IM 15.6	**Distinguish between upper and lower gastrointestinal bleeding based on clinical features**	K	KH	Y	Bedside clinic	Short essay/ MCQs/viva voce	General surgery

	15.6.1.Define malena, hematemesis and hematochezia 15.6.2.Enumerate all the clinical features which helps to distinguish between upper and lower GI bleed.						
IM 15.7	**Demonstrate the correct technique to perform an anal and rectum examination in a mannequin or equivalent.**	S	SH	Y	DOAP session	Skill Assessment	General surgery
	15.7.1.demonstrate the technique involved in per rectum examination.						
IM 15.8	**Generate a differential diagnosis based on the presenting symptoms and clinical features and prioritise based on the most likely diagnosis**	K	KH	Y	Bedside clinic	Short essay/ MCQs/viva voce	PATHOLOGY
	15.8.1.Generate a differential diagnosis based on the clinical presentation accurately 15.8.2. How to priorities the most likely diagnosis in the differential diagnosis accurately.						
IM 15.9	**Choose and interpret diagnostic tests based on the clinical diagnosis including CBC, PT and APTT, stool examination, occult blood, liver function tests, H.pylori tests**	S	SH	Y	Bedside clinic	Skill assessment Short essay/ MCQs/viva voce	General Surgery

IM 15.13 15.17	**Observe cross matching and blood/ Determine appropriate level of blood component transfusion. specialist consultation.**	S S	SH KH	Y Y	Bedside clinic Small group discussion	Viva-voce/Short Long/Short essay/MCQs note/skill assessment	Pathology General surgery
	15.17.1.Enumerate the indications for medical gastroenterologist referral in GI bleed.						
IM 15.18	**Counsel the family and patient in an empathetic non judgmental manner on the diagnosis and therapeutic options**.	S	SH	Y	Role play	OSCE Station	General surgery
	15.8.1.counsel the patient and family members about the diagnosis in an empathetic manner. 15.8.2.counsel the patient and family members about available therapeutic options in a non judgmental manner						

IM 10.11	**Describe and discuss the relationship between CAD risk factors and CKD and in dialysis**	K	KH	Y	Lecture	Short essay/MCQs	Pathology
	10.11.1.Describe and discuss the relationship between CAD risk factors and CKD accurately. 10.11.2. Describe the relationship between CKD and CAD in patients undergoing dialysis, correctly.						
IM 10.12	**Elicit document and present a medical history that will differentiate the aetiologies of disease, distinguish acute and chronic disease, identify predisposing conditions, nephrotoxic drugs and systemic causes**	S	SH	Y	Bedside clinics/DOAP session	Viva voce	
	10.12.1.Document medical history that will identify and differentiate the etiologies of renal disease correctly. 10.12.2. Document medical history that will distinguish between acute and chronic renal disease correctly. 10.12.3. Identify the predisposing conditions including systemic diseases causing renal disease from history correctly. 10.12.4. Document medical history regarding use of nephrotoxic drugs. 10.12.5. Write a neat case sheet and present the case						

IM 10.13	**Perform a systematic examination that establishes the diagnosis and severity including determination of volume status, presence of oedema and heart failure, features of uraemia and associated systemic disease**	S	SH	Y	Bedside clinics/DOAP session	Viva voce	
	10.13.1. Perform independently the systemic examination of CKD patient to establish the diagnosis correctly. 10.13.2. Identify the CKD severity by determining the following, correctly: a. Volume status. b. Presence of oedema. c. Presence of heart failure. d. Uraemia features. e. Any associated systemic disease						
IM 10.14	**Generate a differential diagnosis and prioritize based on clinical features that suggest a specific aetiology**	K	KH	Y	Bedside clinics (Combined with10.11, 10.12,10.13)	Short essay/MCQs	
	10.14.1. Enumerate the differential diagnosis based on clinical features correctly. 10.14.2. Prioritize the differential diagnoses based on clinical features that suggest a specific etiology						
IM 10.15	**Describe the appropriate diagnostic work up based on the presumed**	K	SH	Y	Bedside clinics	Short essay/MCQs	Nil

	aetiology						
	10.5.1. Describe the appropriate diagnostic workup for the patient including appropriate laboratory and radiological investigations based on the presumed aetiology of AKI or CKD						
IM 10.16	**Enumerate the indications for and interpret the results of: renal function tests, calcium, phosphorus, PTH, urine electrolytes, osmolality, Anion gap**	K	KH	Y	Bedside clinics	Short essay/MCQs	Pathology
	10.16.1. Enumerate the indications for renal function tests. 10.16.2. Enumerate the indications for serum calcium, phosphorus and PTH. 10.16.3. Enumerate the indications for urine electrolytes, osmolality and anion gap. 10.16.4. Interpret the results of renal function tests correctly. 10.17.5. Interpret the results of serum calcium, phosphorus and PTH correctly. 10.17.6. Understand the concepts of serum and urine osmolality, anion gap, methods of their calculation and interpret the results of the same						
IM 10.17	**Describe and calculate indices of renal function based on available laboratories including FENa (Fractional Excretion of Sodium) and CrCl (Creatinine**	S	SH	Y	Bedside clinics	Short essay/MCQs	Pathology

	Clearance).						

	10.17.1. Describe and calculate the indices such as FENa and CrCl using the available laboratory invetigations. 10.17.2. Interpret the results of FENa and CrCl, and their implications in the management of the disease.						

IM 10.20	**Describe and discuss the indications to perform arterial blood gas analysis: interpret the data**	S	P	Y	Bedside clinic	Documentation in logbook	Nil
	10.20.1.Discuss the indications to perform ABG analysis correctly. 10.20.2. Understand the method of performing ABG correctly. 10.20.3. Perform ABG analysis independently. 10.20.4. Know the various possible abnormalities and interpret the data of ABG analysis accurately						
IM 10.21	**Describe and discuss the indications for and insert a peripheral intravenous catheter**	S	p	y	Bedside clinic	Documentation in log book about the number of procedures	Nil
	10.20.1. Describe and discuss the indications for peripheral intravenous catheter insertion correctly.						

	10.20.2. Perform independently the insertion of a peripheral intravenous catheter.						
IM 10.22	**Describe and discuss the indications, demonstrate in a model and assist in the insertion of a central venous or a dialysis catheter**	S	SH	N	DOAP session	By demonstrating on a model	Nil
	10.22.1. Describe and discuss the indications of central venous catheter / dialysis catheter insertion correctly. 2. Demonstrate in a model the insertion of central venous / dialysis catheter						
IM 10.23	**Communicate diagnosis treatment plan and subsequent follow up plan to patients**	C	SH	Y	DOAP session	OSCE	Nil
	10.23.1.Communicate diagnosis to the patients correctly. 10.23.2. Communicate treatment plan to the patients correctly. 10.23.3. Counsel about the follow-up plan to the patients.						
IM 10.24	**Counsel patients on a renal diet**	K	SH	Y	DOAP session	OSCE	Nil

IM 10.30	**Recognize the impact of CKD on patient's quality of life well-being work and family**	A	K	Y	Bedside	Observation by faculty	Nil

	10.30.1. Recognize the impact of CKD on the patient's well-being, quality of life and work correctly. 10.30.2. Recognize and counsel regarding the impact of CKD in a patient on the family						
IM 10.31	**Incorporate patient preferences in to the care of CKD**	A/C	K	Y	Bedside	Observation by faculty	Nil
	10.31.1.Counsel the patient in to the care of CKD, giving importance to the patient preferences.						

IM 18.3	**Elicit and document and present an appropriate history including onset, progression precipitating and aggravating relieving factors, associated symptoms that help identify the cause of the cerebrovascular accident**	K	KH	Y	Bedside	Long case	Pathology
	18.3.1. Elicit appropriate history taking to narrow down the cause of cerebrovascular accident 18.3.2. Describe the aggravating and relieving factors of symptomatology of CVA 18.3.3**.** Report the progression of CVA based on symptomatology**.**						
IM 18.4	**Identify the nature of the cerebrovascular accident based on the temporal evolution and resolution of the illness**	K	KH	Y	Bedside	Long case	Pathology

	18.4.1. Define the nature of CVA based on course of events in illness**.** 18.4.2. Differentiate thrombotic, embolic and haemorrhagic stroke based on presentation 18.4.3. Discuss the resolution of illness based on the nature of CVA 18.4.4. Describe the prognosis of patient on the basis of nature of CVA						
IM 18.5	**Perform, demonstrate & document physical examination that includes general and a detailed neurologic examination as appropriate, based on the history**	K	KH	Y	Bedside clinics	Long case	
	18.5.1. Perform general physical examination 18.5.2. Demonstrate a detailed neurological examination. 18.5.3. Demonstrate examination of cranial nerves. 18.5.4. Demonstrate deep tendon reflexes. 18.5.5. Enumerate deep tendon reflexes along with their root values. 18.5.6. Perform assessment of power of a muscle group. 18.5.7. Interpret various signs elicited on neurological examination.						
IM 18.6	**Distinguish the lesion based on upper vs lower motor neuron, side, site and most probable nature of the lesion**	K	KH	Y	bedside	Short case	Physiology
	18.6.1.Discuss the features of upper motor neuron lesion.						

	18.6.2. Discuss the features of lower motor neuron lesion. 18.6.3. Classify the lesion as upper or lower motor neuron based on the site of lesion						
IM 18.7	**Describe the clinical features and distinguish, based on clinical examination, the various disorders of speech**	S	SH	Y	bedside	Short case	Physiology

IM 18.17	**Counsel patient and family about the diagnosis and therapy in an empathetic manner**	K	KH	Y	DOAP session	OSCE	

IM 18.16	**Enumerate the indications describe and observe the multidisciplinary rehabilitation of patients with a CVA**	K	KH	Y	Bedside		physical medicine and rehabilitation
	18.16.1. Enumerate indications of physiotherapy in patients with CVA. 18.16.2. Enlist contraindications of physiotherapy in patients with CVA. 18.16.3. Describe pharmacotherapy in patients with CVA						

IM 17.8 & 17.9	**Lumbar puncture and CSF analysis ; perform LP in a simulated/controlled environment and interpretation of CSF findings and parameters**	S	SH	Y	DOAP session. Simulation lab	MCQs	Pathology

IM 17.14	**Counsel and communicate to patients with migraine and tension headache with empathy – lifestyle changes and need for prophylactic therapy**	S	SH	Y	Role play	OSCE station	psychiatry

IM 19.3	**Elicit, document and present an appropriate history including onset, progression precipitating and aggravating, relieving factors, associated symptoms that help identify the cause of the Movement disorders**	S	SH	Y	Bedside Clinic	Skill Assessment	
	19.3.1. Identify signs and symptoms. 19.3.2.Identify aggravating and relieving factors. 19.3.3.Document associated symptoms. 19.3.4.Perform under supervision movement disorders.						
IM 19.4	**Perform, demonstrate and document a physical examination that includes a general examination and a detailed neurologic examination using standard movement rating scales**	S	SH	Y	Bedside Clinic	Skill Assessment	
	19.4.1.Perform general examination. 19.4.2.Document important physical sign. 19.4.3.Record higher mental function examination. 19.4.4.Interpret cranial nerves examination.						
IM 19.5	**Generate, document and present a differential diagnosis and prioritize based on the history and physical examination**	S	SH	Y	Bedside Clinic	Skill Assessment	

	19.5.1.Interpret differential diagnosis of clinical examination. 19.5.2. Record your negative findings.						
IM 19.6	**Make a clinical diagnosis regarding on the anatomical location, nature and cause of the lesion based on the clinical presentation and findings**	S	SH	Y	Bedside Clinic	Skill Assessment	
	19.6.1.Identify anatomical location of lesion. 19.6.2.Demonstrate nature and cause of lesion.						
IM 19.7	**Choose and interpret, diagnostic and imaging tests in the diagnosis of movement disorders**	S	SH	Y	Bedside Clinic,	Skill Assessment/ Written/Viva voce	Radiodiagnosis
IM 7.24	**Communicate and incorporate patient preferences in the choice of therapy**	C/A	SH	Y	DOAP session	Skill Assessment	AETCOM
IM 7.25	**Develop and communicate appropriate follow up and monitoring plans for patients with rheumatologic conditions**	C	SH	Y	DOAP session	Skill Assessment	
	7.25.1.Counsel the patient about treatment and follow up visits.						

IM 7.26	**Demonstrate an understanding of the impact of rheumatologic conditions on quality of life, wellbeing, work and family**	A	SH	Y	DOAP session	Skill Assessment	
	7.26.1.Counsel the monitoring plan to the patient. Monitor the CBC, liver enzymes RA factor and ESR.						
IM 7.27	**Determine the need for specialist consultation**	K	K	Y	bedside	Viva voce	
	7.27.1.List the indications of referral to the specialist.						

IM 7.11	**Elicit document and present a medical history that will differentiate the etiologies of disease**	S	SH	Y	Bedside Clinic	Skill Assessment	
	7.11.1.Perform the history taking of a patient with joint pains including : duration of joint pains articular or periarticular joint pains						
IM 7.12	**Perform a systematic examination of all joints, muscle and skin that will establish the diagnosis and severity of disease**	S	SH	Y	Bedside Clinic	Skill Assessment	
	7.12.1.Perform examination of all joints. 7.12.2.Describe the findings about joint involved 7.12.3.Perform the range of motion across joint, describe the limitation of motion, deformities if any.						

IM 7.13	**Generate a differential diagnosis and prioritize based on clinical features that suggest a specific etiology**	K/S	KH	Y	Bedside Clinic	Skill Assessment/ Written	
	7.13.1.List the differential diagnoses on the basis of joint pains						
IM 7.14	**Describe the appropriate diagnostic work up based on the presumed etiology**	K	KH	Y	Bedside Clinic	Skill Assessment/ Written	
	7.14.1.Choose the diagnostic work up plan for the patient. 7.14.2.List the diagnostic tests based on the etiology						
IM 7.15	**Enumerate the indications for and interpret the results of : CBC, anti-CCP, RA, ANA, DNA and other tests of autoimmunity**	K	SH	Y	Bedside Clinic	Skill Assessment/ Written	Pathology
IM 7.17	**Enumerate the indications and interpret plain radiographs of joints**	K	SH	Y	Bedside Clinic	Skill Assessment/ Written	
	7.17.1.List the indications of XRAYS of various joints : knee elbow spine hand and wrist shoulder hip and pelvis 7.17.2.Describe the findings of radiographs.						
IM 7.18	**Communicate diagnosis, treatment plan and subsequent follow up plan to patients**	C	SH	Y	DOAP session	Skill Assessment/ Written	

IM 7.17	**Enumerate the indications and interpret plain radiographs of joints**	K	SH	Y	Bedside Clinic	Skill Assessment/ Written	Radiodiagnosis
IM 7.18	**Communicate diagnosis, treatment plan and subsequent follow up plan to patients**	C	SH	Y	DOAP session	Skill Assessment/ Written	
IM 7.20	**Select, prescribe and communicate appropriate medications for relief of joint pain**	K/C	SH	Y	DOAP session	Skill Assessment/ Written	Pharmacology
	7.20.1.Describe the treatment of crystal arthropathy gout. 7.20.2.Differentiate between gout and pseudogout.						
IM 7.21	**Select, prescribe and communicate preventive therapy for crystalline arthropathies**	K/C	SH	Y	DOAP session	Skill Assessment/ Written	Pharmacology
	7.21.1.Choose appropriate pain relief medication. 7.21.2.Counsel the patient about pain relief medication and its side effects.						
IM 7.22	**Select, prescribe and communicate treatment option for systemic rheumatologic conditions**	K/C	SH	Y	DOAP session	Skill Assessment/ Written	Pharmacology

IM2.6: Elicit, document and present an appropriate history that includes onset, evolution, presentation, risk factors, family history, comorbid conditions, complications, medication, history of atherosclerosis, IHD and coronary syndromes

IM2.7: Perform, demonstrate and document a physical examination including a vascular and cardiac examination that is appropriate for the clinical presentation

IM2.8: Generate, document and present a differential diagnosis based on the clinical presentation and prioritise based on "cannot miss", most likely diagnosis and severity

IM2.24: Counsel and communicate to patients with empathy- lifestyle changes in atherosclerosis / post coronary syndromes

Similarly,

Anemia - History, physical examination, diagnosis incl.DDs & investigations, treatment

Pneumonia - History, physical examination, diagnosis incl. investigations, treatment

Diabetes mellitus - History, physical examination, diagnosis incl. investigations, treatment incl. Insulin administration & complications

5. ASSESSMENT:

SUMMATIVE ASSESSMENT- summative assessment in Gen.Medicine in this phase

Eligibility to appear for Professional examinations

As per GMER 2019, 11.1.1. page.no.82 :

The performance in essential components of training are to be assessed, based on:

(a) Attendance

1. Attendance requirements are 75% in theory and 80% in practical /clinical for eligibility to appear for the examinations in that subject. In subjects that are taught in more than one phase – the learner must have 75% attendance in theory and 80% in practical in each phase of instruction in that subject.

2. If an examination comprises more than one subject (for e.g., General Surgery and allied branches), the candidate must have 75% attendance in each subject and 80% attendance in each clinical posting.

3.Learners who do not have at least 75% attendance in the electives will not be eligible for the Third Professional - Part II examination.

b) INTERNAL ASSESSMENT

- There will be 2 theory internal assessment examinations in Gen.Medicine.
- There will be one clinical internal assessment at the end of clinical postings; Internal assessment shall be based on day-to-day assessment. It shall relate to different ways in which learners participate in learning process. Day to day records and log book should be given importance in internal assessment. Internal assessment should be based on competencies and skills.

As per **GMER 2019, 9.5.3, page.no.75:**
(a) A designated faculty member in each unit will coordinate and facilitate the activities of the learner, monitor progress, provide feedback and review the log book/ case record.
(b) The log book/ case record must include the written case record prepared by the learner

Annexure I - Recommended books:

RECOMMENDED BOOKS (Recent editions):

TEXT- BOOKS RECOMMENDED

1. Davidson’s Principles and Practice of Medicine

2. Hutchison’s Clinical Methods

3. Macleod’s Clinical Examination.

REFERENCE BOOKS:

LEVEL 1:

1. API textbook of Medicine

2. Kumar & Clark’s Clinical Medicine

LEVEL 2:

Harrison’s Principles of Internal Medicine, McGraw Hill publications

GENERAL SURGERY

PREAMBLE

The undergraduate medical education program is designed with a goal to create an "Indian Medical Graduate" (IMG) possessingrequisite knowledge, skills, attitudes, values and responsiveness, so that she or he may function appropriately and effectively as a physician of first contact of the community while being globally relevant.

Excerpts from GMER- Regulations on Graduate Medical Education (Amendment), 2019 and UG Curriculum Volumes 1, 2 & 3 have

been utilized in preparing this syllabus document for Alignment / Integration between topics & subjects has been attempted.
As per GMER 2019, Distribution of subjects by Professional Phase. Third Professional - part 2 MBBS includes the following:

- Forensic Medicine and Toxicology, Otorhinolaryngology, Ophthalmology and Community Medicine
- Clinical postings
- Attitude, Ethics & Communication Module (AETCOM)

As per GMER 2019, Year 3: Focus of Learner - Doctor Program is History taking, physical examination, assessment of change in

clinical status, communication and patient education
Keeping the above format as guiding framework, the department of General Surgery department plans to introduce ClinicalSurgery to Third Professional - part 2MBBS

1. GOAL AND OBJECTIVES

Syllabus in General Surgery for Third Professional MBBS Part II

I. GOAL:

The goal of teaching **General Surgery** for Third Professional MBBS part 2 aims at

- providing the foundation of core surgical knowledge,
- to communicate effectively, compassionately, and professionally with patients,
- eliciting history, recording clinical findings and diagnosing common general surgical conditions.

II. OBJECTIVES:

A) Cognitive Domain

At the end of the Third Professional MBBS, undergraduate students in General Surgery should be able to

1. Describe aetiology, pathophysiology, principles of diagnosis and management of trauma, endocrine disorders, skin and vascular disease
2. Define indications and methods of hospital waste management
3. Define the Principles of surgical wound closure, anastomosis, minimal invasive general surgery and reconstruction of developmental anomalies of face, mouth and jaws

B) Affective Domain

At the end of theThird Professional MBBS part 2, undergraduate students in General Surgery should be able to

1. Communicate effectively with patients, peers, and teachers
2. Communicate effectively and counsel regarding surgical patients seeking trauma care
3. Communicate effectively and able administer informed consent and counsel patient prior to surgical procedures
4. Participate in Counselling patients and relatives on organ donation in a simulatedenvironment

C.) Psychomotor Domain

At the end of the Third Professional MBBS, undergraduate students in General Surgery should be able to1.Acquire skills in correct clinical examination of endocrine disorders, skin and vascular disease

2. Acquire skills to perform the techniques of asepsis and suturing
3. Acquire skills to perform the intercostal drainage and airway maintenance

D) INTEGRATION

At the end of 3rd year training he/she should be able to integrate the causes of disease and relationship of different etiologicalfactors (social, economic and environmental) and that contribute to the natural history of diseases most prevalent in India and describe a few diseases and their work-up & treatment pertaining to a few selected topics (see below) in General Surgery andperform a physical examination that is contextual

III. COURSE OUTCOMES

At the end of 3rd professional MBBS, students should

1. Acquire skills to Perform a complete history and physical examination on surgical patients
2. Acquire skills to Formulate an appropriate differential diagnosis, and record an independent written diagnosis for each surgicalpatient assigned.
3. To become skilled in eliciting and interpreting physical signs which can indicate urgent life-threatening conditions.
4. To become familiar with the spectrum of surgical care available and to develop a critical attitude in assessing its value in relation to less invasive forms of treatment.

ASSESSMENT:

1) There will be one summative assessment at the end of Phase III Part II comprising of two theory papers of 100 marks each.

2) There will be two theory internal assessments and one end of the posting clinical assessments

Competency NO	SLO	Domains			T-L Methods	Assessment		
SU 3.2	Observe blood transfusions 1) List the equipments required to start blood transfusion Describe warning signs to look for during blood transfusion	S	SH	Y	Small group Assessment discussion, DOAPsession	Skills assessment/ Logbook		
SU 3.3	Counsel patients and family/ friends for blood transfusion and blood donation. 1) Enumerate the Indications for blood transfusion 2) Demonstrate securing an IV line and starting blood transfusion 3) Describe the benefits and risks associated with blood transfusion	A/C	SH	Y	DOAPsession	Skillsassessment		

	4) Explain the need for blood donation and its importance 5) Discuss the pre requisites needed for blood donation							
SU 4.4.	Communicate and counsel patients and families on the out come and rehabilitation demonstrating empathy and care. 1) Discuss the approach to a patient and his family in case of critical illness for counseling 2) Discuss steps to explain grave risk to a patient and his family appropriately 3) Discuss steps that can be taken to reduce the anxiety of the family members 4) Explain the role of rehabilitation in a surgical patient 5) Discuss how rehabilitation improve the quality of life of a surgical patient	A/C	SH	Y	Small groupdiscussion,Roleplay,Skill sassessment	Vivavoce		
SU 8.2	SU 8.2 Demonstrate Professionalism and empathy to the atient undergoing General Surgery 1) Discuss steps to communicate to communicate the patient about the surgical condition 2) Describe steps to effectively counsel the patient regarding the need for surgery 3) Describe the role of surgery in the management of the condition	A/C	SH	Y	Lecture,Small groupdiscussion, DOAPsession			

	4) Explain the benefits of undergoing surgery							
SU 8.3	Discuss Medico-legal issues in surgical practice 1) Describe the common surgical conditions that are associated with medicolegal issues 2) Discuss the key components that should be addressed to safeguard the surgeon before taking the patient to the operation theater 3) Discuss the importance of documentation in a surgical patient during the pre operative period	A/C	KH	Y	Lecture, Smallgroup discussion			
SU9.3	Communicate the results of surgical investigations and counsel the patient appropriately 1) Mention the commonly used surgical investigations 2) Describe the need for the investigations 3) Discuss steps to counsel a patient for emergency surgery based on the investigation 4) Discuss steps to counsel the patient for elective surgery based on the investigation	C	SH	Y	DOAPsession			
SU10.1	Describetheprinciplesofperioperativeman agementofcommonsurgicalprocedures **1.** Describe the Surgical, medical and an aesthetic aspects of assessment of patient **2.** Describe the Preoperative							

	assessment in emergency surgery 3. Enumerate Patient factors that predispose to high risk of morbidity and mortality 4. Describe the assessment of Identification of the high-risk patient 5. Describe the Optimization of the high-risk surgical patient 6. Discuss how to organize an operating list							
SU10.2	**Describe the steps and obtain informed consent in a simulated environment** **Steps of obtaining informed consent** **1. Self-introduction: Greets patient well** **2. Spoke with a patient in respectful manner: Demonstrates effective communication and respect to patient by vocal and nonvocal gestures** **3. Attempted to establish rapport with patient: Demonstrates effective communication skills to establish rapport with patient** **4. Used language that patient could easily understand: Demonstrates the need and understanding of vernacular language and translates if requires** **5. Shows empathy: Demonstrates active listening and understand feelings of patient**	S/A/C	SH	Y	DOAPsession	Skillassessment/ Logbook		

	6. Maintains appropriate boundaries with the patient: Demonstrates vocal and nonvocal gestures which are necessary for maintaining boundaries **7. Explained reasons for surgery: Determines awareness and communication abilities of explaining reasons of surgery** **8. Explained procedure of surgery: Determines awareness and communication abilities of procedure of surgery** **9. Explained risks of Surgery: Determines awareness and communication abilities of all risks associated with procedure** **10. Explained benefits of surgery to patient: Determines understanding and communication skills regarding benefits of surgery** **11. Explain what will happen if the patient does not opt for surgery: Demonstrates knowledge and communication skills to explain patient regarding what will happen if patient does not opt for surgery** **12. Explained other treatment options/surgery: Demonstrates knowledge and communication skills regarding explaining other treatment option** **13. Ask patient to repeat what he has understood about surgery:**							

	Encourages the patient about clarity of procedure **14. Doubts and concern about confidentiality: Provides reassurance and check discomforts concerns and complications** **15. Documentation: Documents the whole informed consent including problems and complication, arranges, and documents if any at risk consent.**							
SU10.3	**Observecommonsurgicalproceduresa ndassistinminorsurgicalprocedures;** **1) describe the fundamentals of BSS** **2) demonstrate a variety of surgical knots and suturing skills effectively and,** **3) observe handling and use of surgical instruments and tissue safely.** **4) Document the minor surgical procedures observed and assisted** **Observe emergency life saving surgical procedures.** **1. Observe emergency life saving procedures in simulated environment** **2. Document the emergency life saving procedures**	S	KH	Y	DOAPsessions	Logbook		
SU10.4	**Perform basic surgical Skills such as First aid including suturing and minor surgical procedures in simulated environment** **1. Observe and perform various**	S	P	Y	DOAPsession	Skillassessment		

	bleeding control methods in traumatic wound **2. perform Direct pressure over injury to soft tissue** **3. perform Pressure dressing and bandage** **4. perform application of Tourniquet device** **5. perform application of Hemostatic dressing (wound packing)**							
SU 11.1	**Describe principles of Preoperative assessment.** **1) Describe the pre operative plans for best patient outcome** **2) Describe the principles of history taking** **3) Mention the essential key points in past medical history** **4) Mention the key points in clinical examination of a patient** **5) Describe examination points that are specific to surgery** **6) Describe the common investigations ordered before surgery** **7) Discuss common systemic diseases present in a surgical patient .Discuss optimization of such patients for surgery.**	K	KH	Y	Lecture,Small groupdiscussion			
SU.11.2	**Enumerate the principles of general, regional, and local Anaesthesia.** **1) Classify anesthetic agents** **2) Describe principles of General anesthesia** **3) Enumerate different types of regional anesthesia**	K	KH	Y	Lecture,Small groupdiscussion			

	4) Classify local anesthetic agents							
SU 11.3	**Demonstrate maintenance of an airway in a mannequin Or equivalent.** **1) Describe the anatomy of the upper aero digestive tract.** **2)Discuss different methods to maintain airway during anesthesia**	S	SH	Y	DOAPsession			
SU 11.5	**SU 11.5** **Describe principles of providing post-operative pain relief and management of chronic pain.** **1) Describe principles of post operative analgesia** **2) Enumerate different causes of chronic pain** **3) Enumerate conservative and interventional techniques used in management of chronic pain**	K	KH	Y	Lecture,Small groupdiscussion			
SU 13.4	**SU 13.4** **Counsel patients and relatives on organ donation in a simulated environment** **1) Explain the importance of organ donation to patient** **2) Counsel relatives about the need for organ donation in today's scenario**	S	SH	Y	DOAPsession			

SU 14.4	**SU 14.4** **Demonstrate the techniques of asepsis and suturing in a simulated environment** **1) Enumerate steps to be taken for maintaining asepsis during a surgical procedure** **2) Classify suture materials** **3) Discuss and demonstrate different types of suturing methods** **4) Discuss sterilization of surgical instruments**	S	SH	Y	DOAPsession			
SU 17.2	**SU 17.2** **Demonstrate the steps in Basic Life Support. Transport of injured patient in a simulated environment** **1) Discuss steps involved in safely transporting an injured patient to the hospital according to BLS protocol**	S	SH	Y	DOAPsession			
SU 17.10	**SU 17.10** **Demonstrate Airway maintenance. Recognize and manage tension pneumothorax ,hemothorax and flail chest in simulated environment.** **1) Describe different methods to establishing airway support** **2) Discuss clinical features for prompt recognition of chest injury** **3) Discuss different methods of**	S	SH	Y	DOAPsession	Skillassessment /Logbook		Anaesthesiology

	management of chest injury **4) Discuss steps of tube and needle thoracostomy**							
SU18.3	**Describeanddemonstratetheclinicalexaminationofsurgicalpatient including swelling and order relevant investigation fordiagnosis.Describeanddiscussappropriatetreatmentplan.** **1. Elicit, document and present a surgical history of patients with swelling** **2. Demonstrate the general physical examination in surgical patient** **3. Demonstrate Local Examination of swelling** **4. Demonstrate examination of Regional lymph nodes and other systemic examination** **5. Discuss the differential diagnosis of swelling** **6. Discuss the relevant investigations** **7. Describe and discuss appropriate treatment plan**	S	SH	Y	Bed side clinic, Small group discussion, DOAPsession	Skill assessment		
SU20.1	**Describeetiopathogenesisoforalcancersymptomsandsignsoforopharyngealcancer.** **1. Describe surgical anatomy of the oropharynx** **2. Describe the etio-pathogenesis, presentation, pathology of oropharyngeal cancer**	K	KH	Y	Lecture,Small groupdiscussion	Written/Vivavoce		ENT

	3. **Describe the TNM staging, investigations for diagnosis and follow-up of oropharyngeal cancer** 4. **Describe the medical, surgical and radiationtreatment of oropharyngeal cancer** 5. **Describe the rehabilitation after treatment for oropharyngeal cancer**							
SU20.2	Enumeratetheappropriateinvestigationsand discussthePrinciplesoftreatment.	K	K	Y	Lecture,Small groupdiscussion	Written/Vivavoce		
SU21.1	Describesurgicalanatomyofthesalivaryglands,pathology,andclinicalpresentationofdisordersofsalivaryglands **1. Describe surgical anatomy of the salivary glands** **2. Describe the classification, presentation, pathology, investigation and treatment of salivary gland tumors** **3. Describe the etio-pathogenesis, clinical presentation, investigation and treatment ofInflammatory disorders of the sub mandibular gland** **4. Describe the etio-pathogenesis, clinical presentation, investigation and treatment of Inflammatory disorders of the parotid gland** **5. Enumerate indications and steps of parotidectomy**	K	KH	Y	Lecture,Small groupdiscussion	Written/Vivavoce		

	6. Describe the complications of parotid gland surgery							
SU24.1	Describe the clinical features, principles of investigation, prognosis and management of pancreatitis. **1. Describe the etio-pathogenesis, clinical presentation of acute pancreatitis** **2. Describe the assessment of severity of Acute pancreatitis** **3. Discuss the management of Acute pancreatitis** **4. Describe the Complications and management of complications of acute pancreatitis.**	K	KH	Y	Lecture, Small Group discussion	Written/Vivavoce		
SU24.2	Describetheclinicalfeatures,principlesofinvestigation,prognosisandmanagementofpancreaticendocrinetumours **1. Describe the etio-pathogenesis, clinical presentation of pancreatic endocrine tumors** **2. Discuss the investigations for diagnosing pancreatic endocrine tumors** **3. Discuss the management of pancreatic endocrine tumors** **4. Discuss the medical, surgical management and follow-up of pancreatic endocrine tumors**							

SU24.3	Describe the principles of investigation and management of Pancreatic disorders including pancreatitis. **1. Describe the etio-pathogenesis, clinical presentation of chronic pancreatitis** **2. Describe the investigations for chronic pancreatitis** **3. Discuss the management of chronic pancreatitis** **4. Describe the Complications and management of complications of chronic pancreatitis.** **5. Describe the surgical management options for complications of chronic pancreatitis**	K	KH	Y	Lecture,Small groupdiscussion,Demonstration	Written/Vivavoce/Skillassessment		
SU26.1	Outline the role of surgery in the management of coronary heart disease, valvular heart diseases and congenital heart diseases 1. Discuss the Surgical anatomy of the heart 2. Discuss the development of the heart and fetal circulation and circulatory changes at birth 3. Describe the pathophysiology, clinical features, investigations and treatment of coronary heart disease 4. Discuss the indications, preparation, post operative complications and outcomes of surgery for coronary heart disease. 5. Discuss the surgical options for heart	K	K	Y	Lecture, Small group discussion			

	valve diseases and their complications 6. Describe the pathophysiology, clinical features and management of mitral valve disease (MR + MS) 7. Describe the pathophysiology, clinical features and management of aortic valve disease (AR + AS) 8. Classify congenital heart diseases 9. Describe the pathophysiology, clinical features and management of cyanotic congenital heart disease. 10. Describe the pathophysiology, clinical features and management of acyanotic congenital heart diseases.							
SU26.3	Describe the clinical features of mediastinal diseases and the principles of management 1. Discuss the anatomy of the mediastinum 2. Classify tumors of the mediastinum 3. Describe the clinical features and management of the primary tumours of the mediastinum.	K	K	Y	Lecture, Small group discussion			
SU26.4	Describe the etiology, pathogenesis, clinical features of tumors of lung and the principles of management 1. Describe the anatomical development of the lungs 2. Discuss the histological classification of lung cancer 3. Enumerate the risk factors, clinical features of lung cancer	K	K	Y	Lecture, Small group discussion			

	4. Discuss the staging, investigations and treatment of lung cancer 5. Describe the surgical approach to lung cancer resection and its complications							
SU28.1	Describe pathophysiology, clinical features, Investigations and principles of management of Hernias 1. Discuss the basic anatomy of the abdominal wall 2. Describe the anatomical causes, pathophysiology, clinical features and management of ventral hernia 3. Describe the various surgical approaches to ventral hernia 4. Discuss the various types and characteristics of meshes available for hernia repair 5. Discuss the anatomy of the inguinal canal 6. Describe the pathophysiology, clinical features and management of inguinal hernia 7. Describe the various surgical approaches to inguinal hernia 8. Describe the anatomy of femoral canal 9. Discuss the clinical features and management of femoral hernia 10. Describe the incidence, etiology, clinical features of incisional hernia 11. Enumerate the principles of surgery for incisional hernia	K	KH	Y	Lecture, Small group discussion			

SU28.2	Demonstrate the correct technique to examine the patient with hernia and identify different types of hernias.	S	SH	Y	DOAP session, Bedside clinic			
SU28.3	Describe causes, clinical features, complications and principles of mangament of peritonitis 1. Describe the anatomy and physiology of peritoneum 2. Enumerate the types of peritonitis 3. Describe the etiology, clinical features, investigations and treatment of diffuse generalized peritonitis 4. Describe the etiology, clinical features, investigations and treatment of Spontaneous bacterial peritonitis 5. Describe the etiology, clinical features, investigations and treatment of tuberculous peritonitis	K	K	Y	Lecture, Small group discussion, Bedside clinic			
SU28.4	Describe pathophysiology, clinical features, investigations and principles of management of Intra-abdominal abscess, mesenteric cyst, and retroperitoneal tumors 1. Describe detailed anatomy of intra peritoneal space. Discuss different types and causes of intra peritoneal abscess. 2. Discuss in detail about the presentation, diagnosis, and management of pelvic and subphrenic abscess. 3. Classify mesenteric cyst, describe pathology, clinical features, and	K	K	Y	Lecture, Small group discussion, Demonstratio n			

	management of mesenteric cyst. 4. Enumerate the types of benign and malignant retroperitoneal tumors. Describe in detail about the presentation and management of retroperitoneal sarcoma							
SU28.5	Describe the applied Anatomy and physiology of esophagus 1. Discuss in detail about esophageal extension,musculature, and sphincterswith its innervation. Endoscopic landmarks and constrictions of esophagus. 2. Discuss in detail about phases and physiology of swallowing. 3. Describe in detail about esophageal manometry.	K	K	Y	Lecture, Small group discussion, Demonstration			
SU28.6	Describe the clinical features, investigations and principles of management of benign and malignant disorders of esophagus 1. Discuss in detail about esophageal motility disorder and their management. 2. Describe the Etiology, clinical features, diagnosis, management, and complications of GERD. 3. Discuss the Types and management of paraoesophageal hernia. 4. Discuss about pharyngeal and esophageal diverticulum. Add a note on Plummer Vinson syndrome and Schatzki ring. 5. Enumerate the Pathological types of tumours of esophagus. Discuss in detail about etiology, clinical	K	K	Y	Lecture, Small group discussion, Demonstration			

	features, staging, investigation, and management of Ca esophagus.							
SU28.7	Describe the applied anatomy and physiology of stomach 1. Discuss about blood supply and lymphatic drainage and innervation of stomach. 2. Discuss the Microscopicanatomy of stomach and functions of different types of cells. 3. Discuss in detail about phases of Gastric acid secretion and gastroduodenal motility and its control. 4. Discuss in detail about gastric mucus and the gastric mucosal barrier.	K	KH	Y	Lecture, Small group discussion			
SU28.8	Describe and discuss the aetiology, the clinical features, investigations and principles of management of congenital hypertrophic pyloric stenosis, Peptic ulcer disease, Carcinoma stomach 1. Describe in detail about types, etiology, clinical features, and management of peptic ulcer disease. 2. Discuss in detail about the complication and management of peptic ulcer disease. 3. Enumerate the Different types of gastrostomies and its sequalae.	K	KH	Y	Lecture, Small group discussion			

	4. Discuss in detail about presentation and management of congenital pyloric stenosis. Add a note of differential diagnosis in congenital hypertrophic stenosis. 5. Discuss in detail about the etiology, clinical features, staging, investigation, and management of carcinoma stomach. Add a note on adjuvant therapy and palliation in carcinoma stomach. 6. Discuss about Trichobezoar and its management. 7. Enumerate the Types and management of gastric volvulus.							
SU28.9	Demonstrate the correct technique of examination of a patient with disorders of the stomach	S	SH	Y	DOAP session, Bedside clinic			
SU28.10	Describe the applied anatomy of liver. Describe the clinical features, Investigations and principles of management of liver abscess, hydatid disease, injuries and tumors of the liver 1. Describe the anatomy of liver. 2. Describe the clinical features and etiology of liver infections. 3. Describe the various investigations used for diagnosis of liver infections. 4. Describe the management of liver infections. 5. Describe the grades of liver injuries 6. Describe investigations and management of liver trauma 7. Classify neoplasms of liver	K	KH	Y	Lecture, Small group discussion, Demonstration			

	8. Describe the etiology of hepato cellular carcinoma 9. Describe investigations used for diagnosis of liver tumors 10. Describe the management of hepato cellular carcinoma.							
SU28.11	Describe the applied anatomy of spleen. Describe the clinical features, investigations and principles of management of splenic injuries. Describe the post-splenectomy sepsis – prophylaxis 1. Describe the anatomy and functions of spleen 2. Describe the clinical features of spleenic injuries 3. Describe the investigations and grading of spleenic trauma 4. Describe the benefits of conservation of spleen 5. Describe the indication of splenectomy and it's complications 6. Describe the importance of prophylaxis against infection following splenectomy	K	KH	Y	Lecture, Small group discussion, Demonstration			
SU28.12	Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of manage ment of diseases of biliary system 1. Describe the anatomy and physiology of gall bladder and bile ducts 2. Classify gallstones 3. Describe the clinical presentation and complications of gallstones diesease 4. Describe the etiology and clinical features of cholangitis	K	KH	Y	Lecture, Small group discussion, Demonstration			

	5. Describe the investigation used for diagnosis of biliary diesease 6. Describe the management of gallstones diesease 7. Describe indications and complications of cholecystectomy 8. Classify biliary strictures 9. Describe the causes and management of biliary strictures							
SU28.13	Describe the applied anatomy of small and large intestine 1. Describe the anatomy and functions of small intestine. 2. Describe the characteristics features between jejunum and ileum 3. Describe the anatomy and functions of large intestine. 4. Describe the blood supply of large intestine	K	KH	Y	Lecture, Small group discussion, Demonstration			
SU28.14	Describe the clinical features, investigations and principles of management of disorders of small and large intestine including neonatal obstruction and Short gut syndrome 1)Define intestinal obstruction & classify intestinal obstruction. 2)Enumerate the various causes of small intestinal obstruction in adults 3)Describe the clinical manifestations of small intestinal obstruction in detail 4)Enumerate the investigations, in the management of small intestinal obstruction 5)Discuss in detail, the non-invasive & invasive, treatment methods in the management of small intestinal							

	obstruction 6)Describe the clinical features, investigations and principles of management of Crohn's diseases 7)Describe the clinical features and enumerate the investigations in management of G.I.S.T. 8)Describe the clinical features, investigation, modalities and principles of management of Meckle's Diverticulum 9)Define short bowel syndrome & describe the clinical features and principles of management of short bowel syndrome 10)Describe the clinical features, instigations & principles of management of Diverticular disease. 11)Describe the clinical features, investigation and principles of management of colonic volvulus 12)Enumerate the causes of Large Bowel obstruction and describe the clinical features, investigations and management of Large Bowel Obstructions 13)Describe the clinical features, investigations in the management of ulcerative colitis 14)Enumerate the principles of management of ulcerative colitis 15)Describe the clinical features, investigations & principles of management of colonic carcinoma							

	16)Classify colonic polyps & enumerate on the clinical features, investigations and management of colonic polyps 17)Enumerate the causes & describe the clinical features of neonatal obstruction 18)Describe the principles of management of neonatal obstruction.							
SU28.15	Describe the clinical features, investigations and principles of management of diseases of Appendix including appendicitis and its complications. SU28.15 1.Describe the etiology of acute appendicitis 2. Enumerate clinical signs of acute appendicitis 3. Discuss the differential differential diagnosis of acute appendicitis 4. Enlist the investigations of suspected appendicitis 5. Discuss the management of acute appendicitis 6.Discuss the pathophysiology , clinical presentation and management of appendicular mass 7.Discuss the pathophysiology , clinical presentation and management of appendicular abscess							
SU28.16	Describe applied anatomy including congenital anomalies of the rectum and anal canal SU28.16							

	1.Describe the surgical anatomy of rectum and anal canal 2. Classify anorectal malformations and discuss the clinical features and management of anorectal malformations							
SU28.17	Describe the clinical features, investigations and principles of management of common anorectal diseases 1. Discuss the risk factors, pathophysiology ,clinical presentation and management of rectal carcinoma 2. Discuss the pathophysiology , clinical presentation and management of IBD 3. Discuss the pathophysiology , clinical presentation and management of rectal prolapse 4. Discuss the clinical presentation and management of solitary rectal ulcer syndrome 5. Discuss the clinical presentation and management of rectal polyp 6. Discuss the pathophysiology , clinical presentation and management of pilonidal sinus 7. Discuss the clinical presentation and management of anal incontinence 8 Discuss the pathophysiology , clinical presentation and management of fissure in ano 9. Discuss the causes, clinical presentation and management of pruritis ani 10. Discuss the pathophysiology , clinical presentation and management of anorectal							

	abscesses 11. Discuss the pathophysiology , clinical presentation and management of haemorrhoids 12. Discuss the pathophysiology , clinical presentation and management of fistula in ano							
SU28.18	Describe and demonstrate clinical examination of abdomen. Order relevant investigations. Describe and discuss appropriate treatment plan 1)Describe the different quadrants of abdomen 2)Describe the variations in the contour of the abdomen in correlation with different abdominal diseases 3)Describe the different inspection findings on the abdominal wall, with reference to various abdominal diseases 4)Demonstrate visible intestinal peristalsis and visible gastric peristalsis 5)Demonstrate superficial palpation of abdomen 6)Demonstrate the palpation of abdomen , elicit tenderness& rebound tenderness. 7)Demonstrate the correct method of palpation of Liver & spleen. 8)Demonstrate the correct method of examining a mass in the abdomen 9)Demonstrate ballotablity of a mass 10)Demonstrate the methods of percussion with reference to the border of the liver, organomegaly and masses in the abdomen							

	11)Demonstrate eliciting ascitis, gaseous distention and free fluid in the abdomen 12)Describe the various bowel sounds & correlate with the clinical condition 13)Describe Ausculto-percussion and succussion splash 14)Counsel a patient before performing digital per-rectal examination and take consent 15)Demonstrate the various positions for performing digital rectal examination 16.Demonstrate the correct procedure of performing digital rectal examination							
SU29.1	Describe the causes, investigations and principles of management of Hematuria 1. Enumerate the causes for haematuria 2. Enlist the investigations done for haematuria 3. Discuss the principles involved in management of haematuria							
SU29.2	Describe the clinical features, investigations and principles of management of congenital anomalies of genitourinary system 1. Discuss in detail about horseshoe kidney 2. Discuss the pathophysiology , clinical presentation and management of autosomal dominant polycystic kidney 3. Discuss in detail about uretercoele 4. Enumerate the clinical features and							

	mangement of bladder extrophy 5. Discuss the clinical presentation and management of posterior urethral valve 6. Discuss the clinical presentation and management of hypospadiasis 7. Discuss the clinical presentation and management of undescended testis							
SU29.3	Describe the Clinical features, Investigations and principles of management of urinary tract infections 1. Describe the clinical features of Urinary tract infection 2. Enumerate the investigations for Urinary tract infection 3. Discuss the management of Urinary tract infection.							
SU29.4	Describe the clinical features, investigations and principles of management of hydronephrosis: 1)Describe the clinical features, investigations and principles of management of PUJ obstruction 2)Describe the various stages of Vesico-uretric reflux 3)Enumerate the various causes for hydronephrosis and describe the principles of management of this condition							

SU29.5	Describe the clinical features, investigations and principles of management of renal calculi: 1)Enumerate the various causes for urolithiasis and classify urolithiasis 2)Describe the clinical features, instigations & management of renal calculi 3)Describe the complications of Renal Calculi							
SU29.6	Describe the clinical features, investigations and principles of management of renal tumours 1)Classify renal tumours 2)Describe the clinical features & investigations for various renal tumors 3)Describe the renal preserving, treatment, modalities in the management of various of renal tumors 4)Describe the principles of management of renal tumor with reference to tumour markers 5)Describe the principles of surgical management of renal tumours 6)Enumerate the principles in post-op follow-up of patients treated for renal tumours							
SU29.7	Describe the principles of management of acute and chronic retention of urine: 1)Describe the principles of conservative line of management in							

	acute urinary retention including Foley's catheterization 2)Describe the procedures of supra pubic catheterization 3)Describe the indications for supra pubic catheterization in retention of urine 4)Describe the pathophysiology of post void urinary retention 5)Describe the various causes of bladder outlet obstruction and enumerate the complications 6)Describe the principles of management of BPH and Discuss trans-urethral resection of prostate 7)Describe the principles of management of urethral stricture 8)Describe the principles of management of urethral trauma							
SU29.8	Describetheclinicalfeatures,investigationsandprinciplesofmanagementofbladdercancer 1)Describe the etio-pathogenesis of bladder cancer 2)Describe the clinical features of bladder cancer 3)Describe various investigations done for diagnosing a case of bladder cancer 4)Describe the TNM staging for bladder cancer 5)Describe the treatment of bladder							

	cancer depending on the stage of tumor							
SU29.9	Describetheclinicalfeatures,investigationsandprinciplesofmanagementofdisordersofprostate BPH 1) Describe the Etio-Pathogenesis of BPH 2) Describe the clinical features of BPH 3) Describe the investigations done for a case of BPH 4) Describe the medical management for BPH 5) Describe the surgical management of BPH 6) Describe the complications of BPH Prostatic cancer 1) Describe the etio-pathogenesis of prostate cancer 2) Describe the clinical features of prostate cancer 3) Describe the investigation done for prostate cancer 4) Describe the TNM staging of prost ate cancer 5) Describe the treatment of prost ate cancer based on stage of the disease Prostatitis							

	1) Describes the etio-pathogenesis of prostatitis 2) Describe the clinical feature of prostatitis 3) Describe the investigation done for case of prostatitis 4) Describe the treatment of prostatitis 5) Enumerate the complications of prostatitis							
SU29.10	Demonstrateadigitalrectalexaminatio noftheprostateinamannequinorequiv alent							
SU29.11	Describeclinicalfeatures,investigations andmanagementofurethralstrictures 1)Enumerate the causes of urethral strictures 2)Describe the clinical features of urethral strictures 3)Describe the investigation done to diagnose a case of urethral strictures 4)Describe the various treatment options to treat urethral strictures 5)Describe the complication of urethral strictures							
SU30.1	Describe the clinical features, investigations and principles of management of phimosis, paraphimosis and carcinomapenis. Phimosis 1) Describe the etio-pathogenis of phimosis 2) Describe the clinical features of							

	phimosis 3) Describe the treatment of phimosis 4) Describe the complications of phimosis carcinoma Penis 1) Describe the premalignant lesions of Penis 2) Describe the etio-pathogenesis of carcinoma penis 3) Describe the clinical features of carcinoma Penis 4) Describe the investigation done for carcinoma Penis 5) Describe the TNM staging of carcinoma Penis 6) Describe the treatment of carcinoma Penis according to the stage of the disease Paraphimosis Demonstrate how to reduce a case of paraphimosis.							
SU30.2	DESCRIBE THE APPLIED ANATOMY, CLINICAL FEATURES, INVESTIGATIONS AND PRINCIPLES OF MANAGEMENT OF UNDESCENDED TESTIS. 1)Define undescended testis and ectopic testis 2) Describe the normal descent and anatomy of testis. 3) Describe the pathology of undescended testis. 4) Describe the clinical features of							

	undescended testis. 5) Describe the investigations and treatment for undescended testis. 6) List the consequences of undescended testis 7) Discuss the pathophysiology, clinical features, differential diagnosis and management of testicular torsion.							
SU30.3	DESCRIBE THE APPLIED ANATOMY, CLINICAL FEATURES, INVESTIGATIONS AND PRINCIPLES OF MANAGEMENT OF EPIDYDIMO-ORCHITIS. 1) Define epidydimo- orchitis. 2) Describe the patho-physiology of epidydimo-orchitis. 3) Describe the clinical features of epidydimo-orchitis. 4) Describe the investigations and treatment of epidydimo-orchitis.. 5) Describe chronic conditions like Tubercular epididymo-orchitis and Viral orchitis. 6) Discuss about epidydimal cyst, differential diagnosis and its management.							
SU30.4	DESCRIBE THE APPLIED ANATOMY, CLINICAL FEATURES, INVESTIGATIONS AND PRINCIPLES OF MANAGEMENT OF VARICOCOELE. 1)Define varicocele 2) Describe the surgical anatomy of varicocele. 3) Describe the etiology and clinical features of varicocele 4) List the grading of the varicocele. 5) Describe the investigations and							

	treatment for varicocele. 6) Discuss the effect of varicocele on spermatogenesis and role of surgical treatment in male infertility.							
SU30.5	DESCRIBE THE APPLIED ANATOMY, CLINICAL FEATURES, INVESTIGATIONS AND PRINCIPLES OF MANAGEMENT OF HYDROCELE 1)Define hydrocele 2) Describe the etiology of hydrocele. 3) Classify hydrocele. 4) Describe the clinical features of hydrocele 5) Describe the investigations and treatment of hydrocele. 6) Enumerate the complications of hydrocele							
SU30.6	DESCRIBE CLASSIFICATION, CLINICAL FEATURES, INVESTIGATIONS AND PRINCIPLES OF MANAGEMENT OF TUMOURS OF TESTIS. 1) Enumerate the risk factors for testicular tumors. 2) Describe the classification and pathology of testicular tumors. 3) Describe the clinical features of tumors of the testis. 4) Describe the investigations and staging of testicular tumors. 5) Describe the treatment of testicular tumors including adjuvant therapy. 6) Discuss the role of tumor markers in management of testicular tumors.							

5. Commitment to advancement of quality and patient safety in surgical practice.

REFERENCE BOOKS:

LEVEL 1:

1. SABISTON TEXTBOOK of SURGERY: The BIOLOGICAL BASIS of MODERN SURGICAL PRACTICE
2. Schwartz's Principles of Surgery
3. Essentials of General Surgery

LEVEL 2:

1. Maingot's ABDOMINALOPERATIONS
2. BLUMGART's Surgery of the Liver, Biliary Tract, and Pancreas
3. Fischer's Mastery of Surgery