Subject: General Surgery
Clinical Postings

Learner -Doctor Programme (clinical clerkship)

Phase II

- History taking
- General Examination
- Local Examination with demonstration of signs.
- Psychomotor Skills
- AETCOM of Phase II

Phase III/ I

- All of Phase II plus
- Psychomotor Skills
- Differential diagnosis
- Investigations
- AETCOM of Phase III Part I

Phase III/ II

- All of Phase III Part I plus
- Psychomotor Skills
- Management
- Counselling
- AETCOM Phase III/ Part II

-There shall be end post exam at the end of 1st, 2nd and 3rd clinical posting which will be added to internal
-At the end of 4th clinical posting of 4 weeks there will be only formative assessment.

Subject: General Surgery
Lectures

MBBS Phase II-
Total Teaching hours: 25 hours

S. NO	TOPICS	COMPETENCIES	SUBTOPICS
			Lecture: 1
1.	**Introductory Lecture**		Welcome History of surgery Introduction to surgery and allied subjects Teaching, Learning & Assessment -CBME
2.	**Metabolic Response to Injury**		**Lecture**: 2
		SU 1.1	
			Describe basic concepts of homeostasis, enumerate the metabo changes in injury and their mediators.
		SU 1.2	**Lecture**: 3
			Describe the factors that affect the metabolic responses to inju
3.	**Shock**		
		SU 2.1	**Lecture**: 4
		PA6.3	Describe Pathophysiology of shock, types of shock and principle resuscitation including fluid replacement and monitoring. Define and describe shock, its pathogenesis and its stages
		SU 2.2	**Lecture**: 5
			Describe the clinical features of shock and its appropriate treatr

4.	**Blood and blood components**		
		SU 3.1	**Lecture**: 6
			Describe the indications and appropriate use of blood and bloo and complications of blood transfusion.
		PA22.4	Enumerate blood components and describe their clinical u
5.	**Burns**		
		SU 4.1	**Lecture**: 7
			Describe pathophysiology of burns. Describe clinical features, d type and extent of burns.
		SU 4.2, 4.3	**Lecture**: 8
			Plan appropriate treatment of burns. Discuss medicolegal aspec injuries.
6.	**Wound healing and wound care**		
		SU 5.1	**Lecture**: 9
		PA5.1	Describe normal wound healing and factors affecting healing.
			Define and describe the process of repair and regeneratio including wound healing and its types
		PA4.1	Define and describe the general features of acute and chro inflammation including stimuli, vascular and cellular event
		PA4.2	Enumerate and describe the mediators of acute inflammat
		SU 5.3	**Lecture**: 10
			Differentiate the various types of wounds, plan and observe ma of wounds.
7.	**Surgical Infections**		
		SU 6.1	**Lecture**: 11
			Define and describe the etiology and pathogenesis of surgical in

		SU 6.1	**Lecture**: 12
			Define and describe the etiology and pathogenesis of surgical in HIV-AIDS, Hepatitis, Gas Gangrene etc.
		SU 6.2	**Lecture**: 13
			Enumerate prophylactic and therapeutic antibiotics. Plan appro management.
8.	**Investigations of a surgical patient**		
		SU 9.1	**Lecture**: 14
		PA8.1 PA8.2 MI7.1	Choose appropriate biochemical, microbiological, pathological, investigations and interpret the investigative data in a surgical p Describe the diagnostic role of cytology and its application care. Describe the basis of exfoliative cytology including the tech stains used Describe the etio-pathogenesis and discuss the laboratory of infections of genitourinary system
9.	**Nutrition and fluid therapy**		
		SU 12.1	**Lecture**:15
			Enumerate the causes and consequences of malnutrition in the patient.
		SU 12.2	**Lecture**:16
			Describe and discuss the methods of estimation and replaceme fluid and electrolyte requirements in the surgical patients.
		SU 12.3	**Lecture**:17

			Discuss the nutritional requirements of surgical patients, the m providing nutritional support and their complications.
10.	**Transplantation**		
		SU 13.1	**Lecture**: 18
			Describe the immunological basis of organ transplantation.
		SU 13.2	**Lecture**: 19
			Discuss the principles of immunosuppressive therapy. Enumera Indications, describe surgical principles, management of organ transplantation
11.	**Basic surgical skills**		
		SU 14.1	**Lecture**: 20
		MI1.4 MI1.5	Describe Aseptic techniques, sterilisation and disinfection. Classify and describe the different methods of sterilization disinfection. Discuss the application of the different metho laboratory, in clinical and surgical practice Choose the most appropriate method of sterilization and disinfection to be used in specific situations in the laborato clinical and surgical practice
12.	**Biohazard disposal**		
		SU 15.1	**Lecture**: 21
		MI8.7	Describe classification of hospital waste and appropriate metho disposal. Demonstrate Infection control practices and use of Person Protective Equipment (PPE)
13.	**Trauma**		
		SU 17.1	**Lecture**: 22
			Describe the principles of first aid.
		SU 17.2	**Lecture**: 23

			Basic Life Support
14.	**Skin and Subcutaneous tissue**		
		SU 18.1, SU 18.2, 18.3	**Lecture**: 24
			Describe the pathogenesis, clinical features and management o cutaneous and subcutaneous infections. Describe clinical exami surgical patient including swelling and discuss investigations for and treatment plan. Classify skin tumours. Differentiate different skin tumours and c their management.
15.	**Vascular diseases**		
		SU27.1	**Lecture**: 25
			Describe the etiopathogenesis, clinical features, investigations a principles of treatment of occlusive arterial disease.

MBBS Phase III- Part I
Total Teaching hours: 25 hours

S. NO	TOPICS	COMPETENCIES	SUBTOPICS
1.	**Metabolic response to injury**		
		SU1.3	**Lecture**: 1
			Describe basic concepts of postoperative care.
2.	**Surgical Audit and Research**		
		SU7.1.7.2	**Lecture**: 2
			Describe the planning and conduct of surgical audit Describe the principles and steps of clinical research in General Surgery
3.	**Ethics**		
		SU8.1, 8.2	**Lecture**: 3
			Describe the principles of Ethics as it pertains to General Surgery demonstrate professionalism and empathy to the patient underg general surgery
		AS10.3	Describe the role of communication in patient safety
		SU9.2	**Lecture**: 4
			Biological basis for early detection of cancer and multidisciplinary approach in management of cancer
4.	**Pre, intra and post-operative management**.		
		SU10.1	**Lecture**: 5
			Describe the principles of perioperative management of common
			surgical procedures and Describe the steps and obtain informed consent in a simulated environment

		IM5.13, IM15.9	Enumerate the indications for ultrasound and other imaging stud including MRCP and ERCP and describe the findings in liver disease. Choose and interpret diagnostic tests based on the clinic diagnosis including complete blood count, PT and PTT, stool examination, occult blood, liver function tests, H.pylori test.
5.	**Anaesthesia and pain management**		
		SU11.1, 11.5	**Lecture**: 6
		AS3.1, AS5.6	Describe principles of Preoperative assessment. Describe principl providing post-operative pain relief and management of chronic p Describe the principles of preoperative evaluation. Observe and describe the principles and steps/ techniques involved S in comm blocks used in Surgery(including brachial plexus blocks)
		SU11.6	**Lecture**: 7
		AS3.2	Describe Principles of safe General Surgery Elicit, present and document an appropriate history including medication history in a patient undergoing Surgery as it pertains t preoperative anaesthetic evaluation
6.	**Transplantation**		
		SU13.4	**Lecture**: 9
			Counsel patients and relatives on organ donation in a simulated Environment Enumerate the indications for hepatic transplantation
7.	**Basic Surgical Skills**		
		SU14.2	**Lecture**: 10
			Describe Surgical approaches, incisions and the use of appropriat instruments in Surgery in general.
		SU14.3	**Lecture**: 11
			Describe the materials and methods used for surgical wound clos and anastomosis (sutures, knots and needles)

8.	**Trauma**		
		SU17.2	**Lecture**: 12
			Demonstrate the steps in Basic Life Support. Transport of injured patient in a simulated environment
9.	**Developmental anomalies of face, mouth and jaws**		
		SU19.1, 19.2	**Lecture**: 13
			Describe the etiology and classification of cleft lip and palate. Des the Principles of reconstruction of cleft lip and palate.
10.	**Oropharyngeal cancer**		
		SU20.1, SU20.2	**Lecture**: 14
			Describe etiopathogenesis of oral cancer symptoms and signs of oropharyngeal cancer. Enumerate the appropriate investigations and discuss the Princip treatment and reconstructive flap
		DE 4.1, DE 4.2, DE 4.3, DE 4.4	**Lecture**: 15
			Discuss the prevalence of oral cancer and enumerate the commo types of cancer that can affect tissues of the oral cavity. Discuss t role of etiological factors in the formation of precancerous /cance lesions. Identify potential pre-cancerous /cancerous lesions. Cour patients to risks of oral cancer with respect to tobacco, smoking, alcohol and other causative factors.
11.	**Disorders of salivary glands**		
		SU21.1	**Lecture**: 16
		AN28.9 , AN34.1 ,	Describe surgical anatomy of the salivary glands, pathology clinica presentation of disorders of salivary glands Describe & demonstrate the parts, borders, surfaces, contents, relations and nerve supply of parotid gland with course of its duct

			and surgical importance. Describe & demonstrate the morpholog relations and nerve supply
		SU21.2	**Lecture**: 17
			Enumerate the appropriate investigations and describe the Princi of treatment of disorders of salivary glands
12.	**Thyroid and Parathyroid Glands**		
		SU22.1, 22.2	**Lecture**: 18
		AN35.2 PA32.1, IM12.13, IM12.15	Describe the applied anatomy and physiology of thyroid. Describe etiopathogenesis of thyroidal swellings. Describe the etiopathogenesis of thyroidal swellings. Describe & demonstrate location, parts, borders, surfaces, relations & blood supply of thyroid gland Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings, Describe the pharmacology, indications, adverse reaction, interactions of thyroxine and antithyroid drugs. Describe and disc the indications of thionamide therapy, radio iodine therapy and Surgery in the management of thyrotoxicosis
		SU22.4	**Lecture**: 19
			Describe the clinical features, classification and principles of management of thyroid cancer
		SU22.5	**Lecture**: 20
		IM22.2	Describe the applied anatomy of parathyroid. Describe and discuss the clinical features of hypo - and hyperparathyroidism and the principles of their management Describe the aetiology, clinical manifestations, diagnosis and clini approach to primary hyperparathyroidism
13.	**Adrenal Glands**		
		SU23.1, 23.2, 23.3	**Lecture**: 21

			Describe the applied anatomy of adrenal glands. Describe the etiology, clinical features and principles of management of disord of adrenal gland. Describe the clinical features, principles of investigation and management of Adrenal tumours
14.	**Breast**		
		SU25.1	**Lecture**: 22
		PA31.1	Describe applied anatomy and appropriate investigations for bre disease Classify and describe the types, etiology, pathogenesis, pathology and hormonal dependency of benign breast disease
		SU25.2	**Lecture**: 23
		PA31.2	Describe the etiopathogenesis, clinical features and principles of management of benign breast disease including infections of the breast. Classify and describe the epidemiology, pathogenesis, classification, morphology, prognostic factors, hormonal dependency, staging and spread of carcinoma of the breast
		SU 25.3	**Lecture**: 24
			Describe the etiopathogenesis, clinical features, Investigations an principles of treatment of benign and malignant tumours of breas
15.	**Vascular diseases**		
		SU 27.1	**Lecture**: 25
		AN19.3, AN20.5 AN20.9	Describe the etiopathogenesis, clinical features, investigations an principles of treatment of occlusive arterial disease. Explain the concept of "Peripheral heart. Explain anatomical basis varicose veins and deep vein thrombosis. Identify & demonstrate palpation of vessels (femoral, popliteal, dorsalis pedis, post tibial), Mid inguinal point, Surface projection femoral nerve, Saphenous opening, Sciatic, tibial, common peron & deep peroneal nerve, great and small saphenous veins

MBBS Phase III- Part II
Total Teaching hours: 70 hours

S. NO	TOPICS	COMPETENCIES	SUBTOPICS
1.	**Anaesthesia and Pain Management**		
		SU 11.2	**Lecture**: 1
		AS5.6	Enumerate the principles of general, regional and local anaesthesia. Observe and describe the principles and steps/ techniqu involved in common blocks used in Surgery (including brachial ple blocks)
		SU 11.4	**Lecture**: 2
			Enumerate the indications and principles of day care Ge Surgery.
		SU 16.1	**Lecture**: 3
			Minimal Invasive General Surgery: Describe indications, advantages and disadvantages of Minimally Invasive Ge Surgery.
2.	**Trauma**		
		SU 17.4, 17.5, 17.6	**Lecture**: 4
			Describe pathophysiology, mechanism of head injuries. Describe clinical features for neurological assessment ar GCS in head injuries. Choose appropriate investigations discuss the principles of management of head injuries.

		SU 17.7	**Lecture**: 5
			Describe the clinical features of soft tissue injuries. Choo appropriate investigations and discuss the principles of management.
		SU 17.8, 17.9	**Lecture**: 6
			Describe pathophysiology of chest injuries. Describe the clinical features and principles of management of chest injuries.
		SU17.3	**Lecture**: 7
			Describe pathophysiology of Abdominal injuries. Describ clinical features and principles of management of Abdom injuries.
3.	**Pancreas**		
		SU 24.1	**Lecture**: 8
		AN55.2	Describe the clinical features, principles of investigation, prognosis and management of pancreatitis. Demonstrate the surface projections of: stomach, liver, fu of gall bladder, spleen, duodenum, pancreas, ileocecal junction, kidneys & root of mesentery
		SU 24.2	**Lecture**: 9
			Describe the clinical features, principles of investigation, prognosis and management of pancreatic endocrine tum
		SU 24.3	**Lecture**: 10
			Describe the principles of investigation and management pancreatic disorders including pancreatitis and endocrine tumours.
4.	**Cardio-thoracic General Surgery- Chest- Heart and Lungs**		
		SU 26.1, 26.2	**Lecture**: 11

			Outline the role of surgery in the management of coronar heart disease, valvular heart diseases and congenital he diseases, diseases of Thorax and Diaphragm
		SU 26.3	**Lecture**: 12
			Describe the clinical features of mediastinal diseases an principles of management.
		SU 26.4	**Lecture**: 13
			Describe the etiology, pathogenesis, clinical features of t of the lung and the principles of management.
5.	**Vascular Diseases**		
		SU 27.1	**Lecture**: 14
			Describe the etiopathogenesis, clinical features, investiga and principles of treatment of occlusive arterial disease.
		SU 27.2, 27.3, 27.4	**Lecture**: 15
			Demonstrate the correct examination of the vascular syst and enumerate and describe the investigation of vascula disease. Describe clinical features, investigations and principles of management of vasospastic disorders. Desc the types of gangrene and principles of amputation.
		SU 27.5, 27.6	**Lecture**: 16
		AN20.5	Describe the applied anatomy of the venous system of lo limb. Explain anatomical basis of varicose veins and deep vein thrombosis
		SU 27.7	**Lecture**: 17
			Describe pathophysiology, clinical features, Investigation principles of management of lymph edema, lymphangitis lymphomas. Explain the concept of lymphoedema and sp of tumors via lymphatics and venous system
6.	**Abdomen**		

		SU 28.1	**Lecture**: 18
		AN44.4 AN44.5	Describe pathophysiology, clinical features, Investigation principles of management of Hernias Describe & demonstrate extent, boundaries, contents of Inguinal canal including Hesselbach's triangle. Explain the anatomical basis of inguinal hernia.
		SU 28.1	**Lecture**: 19
			Describe pathophysiology, clinical features, Investigation principles of management of Hernias
		SU 28.1	**Lecture**: 20
		AN44.6	Describe pathophysiology, clinical features, Investigation principles of management of Hernias Describe & demonstrate attachments of muscles of anterior abdominal wall
		SU 28.1	**Lecture**:21
		AN44.7	Describe pathophysiology, clinical features, Investigation principles of management of Hernias Enumerate common Abdominal incisions
		SU 28.3	**Lecture**: 22
		AN47.2 AN47.3 AN47.4	Describe causes, clinical features, complications and prin of management of peritonitis and omental pathologies Name & identify various peritoneal folds & pouches with its explanation. Explain anatomical basis of Ascites & Peritonitis Explain anatomical basis of Subphrenic abscess
		SU 28.4	**Lecture**: 23
		AN47.4	Describe pathophysiology, clinical features, investigation K principles of management of Intra-abdominal abscess, mesenteric cyst, and retroperitoneal tumors Explain anatomical basis of Subphrenic abscess
		SU 28.5	**Lecture**: 24
		AN23.1	Describe the applied Anatomy and physiology of esopha Describe & demonstrate the external appearance, relations, blood supply, nerve supply, lymphatic drainage and applied anatomy of

			oesophagus
		SU 28.6	**Lecture**: 25
			Describe the clinical features, investigations and principle management of benign and malignant disorders of esoph
		SU 28.7	**Lecture**: 26
		AN47.6 AN47.1	Describe the applied anatomy and physiology of stomach Explain the anatomical basis of Splenic notch, accessory spleens, Kehr's sign, different types of vagotomy, liver bi (site of needle puncture), referred pain in cholecystitis, Obstructive jaundice, referred pain around umbilicus, rad pain of kidney to groin &Lymphatic spread in carcinoma stomach Describe & identify boundaries and recesses of Lesser & Greater sac
		SU 28.8	**Lecture**: 27
			Describe and discuss the aetiology, the clinical features, investigations and principles of management of congenita hypertrophic pyloric stenosis, Peptic ulcer disease, Carci stomach
		SU 28.10	**Lecture**: 28
		AN47.4 AN47.6	Describe the applied anatomy of liver. Describe the clinic features, Investigations and principles of management of abscess, hydatid disease, injuries and tumors of the liver Explain anatomical basis of Subphrenic abscess Liver biopsy (site of needle puncture), referred pain in cholecystitis, Obstructive jaundice
		SU 28.10	**Lecture**: 29
			Describe the applied anatomy of liver. Describe the clinic features, Investigations and principles of management of abscess, hydatid disease, injuries and tumours of the liver

		SU 28.10	**Lecture**: 30
		AN47.3	Describe the applied anatomy of liver. Describe the clinic features, Investigations and principles of management of abscess, hydatid disease, injuries and tumors of the liver Explain anatomical basis of Ascites & Peritonitis
		SU 28.11	**Lecture**: 31
		AN47.6	Describe the applied anatomy of spleen. Describe the cli features, investigations and principles of management of splenic injuries. Describe the post-splenectomy sepsis – prophyl Explain the anatomical basis of Splenic notch, accessory spleens, Kehr's sign
		SU 28.12	**Lecture**: 32
		AN47.7	Describe the applied anatomy of biliary system. Describe clinical features, investigations and principles of manage of diseases of biliary system Mention the clinical importance of Calot's triangle
		SU 28.12	**Lecture**: 33
			Describe the applied anatomy of biliary system. Describe clinical features, investigations and principles of manage of diseases of biliary system
		SU 28.12	**Lecture**: 34
		AN47.10 AN47.11	Describe the applied anatomy of biliary system. Describe clinical features, investigations and principles of manage of diseases of biliary system Enumerate the sites of portosystemic anastomosis Explain the anatomic basis of hematemesis & caput med in portal hypertension

		SU 28.13, 28.14	**Lecture**: 35
		AN52.6	Describe the applied anatomy of small and large intestine Describe the development and congenital anomalies of foregut, midgut & hindgut
		SU 28.13, 28.14	**Lecture**: 36
			Describe the clinical features, investigations and principle management of disorders of small and large intestine inc neonatal obstruction and Short gut syndrome
		SU 28.13, 28.14	**Lecture**: 37
			Describe the clinical features, investigations and principle management of disorders of small and large intestine inc neonatal obstruction and Short gut syndrome
		SU 28.13, 28.14	**Lecture**: 38
			Describe the clinical features, investigations and principle management of disorders of small and large intestine inc neonatal obstruction and Short gut syndrome
		SU 28.13, 28.14	**Lecture**: 39
			Describe the clinical features, investigations and principle management of disorders of small and large intestine inc neonatal obstruction and Short gut syndrome
		SU 28.13, 28.14	**Lecture**: 40
			Describe the clinical features, investigations and principle management of disorders of small and large intestine inc neonatal obstruction and Short gut syndrome
		SU 28.13, 28.14	**Lecture**: 41
			Describe the clinical features, investigations and principle management of disorders of small and large intestine inc neonatal obstruction and Short gut syndrome
		SU 28.15	**Lecture**: 42

			Describe the clinical features, investigations and principle management of diseases of Appendix including appendic and its complications.
		SU 28.16	**Lecture**: 43
		AN49.4	Describe applied anatomy including congenital anomalie the rectum and anal canal Describe & demonstrate boundaries, content & applied anatomy o Ischiorectal fossa
		SU 28.16	**Lecture**: 44
		AN48.8	Describe applied anatomy including congenital anomalie the rectum and anal canal Mention the structures palpable during vaginal & rectal examinatio
		SU 28.17	**Lecture**: 45
			Describe the clinical features, investigations and principle management of common anorectal diseases
		SU 28.17	**Lecture**: 46
			Describe the clinical features, investigations and principle management of common anorectal diseases
7.	**Urinary System**		
		SU 29.1	**Lecture**: 47
			Describe the causes, investigations and principles of management of Hematuria
		SU 29.2	**Lecture**: 48
		AN52.7	Describe the clinical features, investigations and principle management of congenital anomalies of genitourinary sy Describe the development of urinary system
		SU 29.3	**Lecture**: 49
		MI7.1	Describe the Clinical features, Investigations and principl management of urinary tract infections Describe the etio-pathogenesis and discuss the laborato diagnosis of infections of genitourinary system
		SU 29.4	**Lecture**: 50

			Describe the clinical features, investigations and principle management of hydronephrosis
		SU 29.5	**Lecture**: 51
			Describe the clinical features, investigations and principle management of renal calculi
		SU 29.5	**Lecture**: 52
			Describe the clinical features, investigations and principle management of renal calculi
		SU 29.6	**Lecture**: 53
			Describe the clinical features, investigations and principle management of renal tumours
		SU 29.7	**Lecture**: 54
			Describe the principles of management of acute and chro retention of urine
		SU 29.8	**Lecture**: 55
			Describe the clinical features, investigations and principle management of bladder cancer
		SU 29.9	**Lecture**: 56
		AN48.7	Describe the clinical features, investigations and principle management of disorders of prostate Mention the lobes involved in benign prostatic hypertrophy & prostatic cancer
		SU 29.10	**Lecture**: 57
			Describe clinical features, investigations and manageme urethral strictures and urethral injuries
8.	**Penis, Testis and scrotum**		
		SU 30.1	**Lecture**: 58
		AN46.5	Describe the clinical features, investigations and principle management of phimosis, paraphimosis. Explain the anatomical basis of Phimosis & Circumcision
		SU 30.1	**Lecture**: 59

			Describe the clinical features, investigations and principle management of carcinoma penis.
		SU 30.2, 30.3	**Lecture**: 60
		AN46.1	Describe the applied anatomy clinical features, investigat and principles of management of undescended testis. De the applied anatomy clinical features, investigations and principles of management of epidydimo-orchitis Describe & demonstrate coverings, internal structure, sid determination, blood supply, nerve supply, lymphatic dra & descent of testis with its applied anatomy
		SU 30.4, 30.5	**Lecture**: 61
		AN46.4	Describe the applied anatomy clinical features, investigat and principles of management of varicocele and hydroco Explain the anatomical basis of varicocele
		SU 30.6	**Lecture**: 62
			Describe classification, clinical features, investigations ar principles of management of benign tumours of testis.
		SU 30.6	**Lecture**: 63
			Describe classification, clinical features, investigations ar principles of management of malignant tumours of testis.
9.			**Lecture**: 64
			Revision **Lecture** 1
10.			**Lecture**: 65
			Revision **Lecture** 2
11.			**Lecture**: 66
			Revision **Lecture** 3
12.			**Lecture**: 67
			Revision **Lecture** 4
13.			**Lecture**: 68
			Revision **Lecture**5

14.			**Lecture**: 69
			Revision **Lecture** 6
15.			**Lecture**: 70
			Revision **Lecture** 7

Subject: General Surgery
Self-Directed Learning

MBBS phase III/I
Total Teaching hours : 5 hours
***These are suggested topics which can be modified at institutional level**

Sr. No.	TOPICS	COMPETENCIES	SUBTOPICS
1.	Ethics		
		SU8.1	SDL:1
			Describe the principles of Ethics as it pertains to General Surger Demonstrate Professionalism and empathy to the patient.
2.	Transplantation		
		SU13.3	SDL:2
			Discuss the legal and ethical issues concerning organ donat Counsel patients and relatives on organ donation in a simu

MBBS phase III/II

Total Teaching hours : 15 hours

***These are suggested topics which can be modified at institutional level**

Sr. No	TOPICS	COMPETENCIES	SUBTOPICS
1.	**Thyroid**		
		SU 22.2, SU 22.3, SU22.4	SDL:1
			Describe the etiopathogenesis of thyroidal swelling Demonstrate and document the correct clinical exa and discus the differential diagnosis and their man Describe the clinical features, classification and pri thyroid cancer
2.	**Breast**		
		SU 25.2, SU 25.3	SDL:2
			Describe the etiopathogenesis, clinical features an benign breast disease including infections of the br Describe the etiopathogenesis, clinical features, In treatment of benign and malignant tumours of bre
3.	**Oral malignancy**		
		SU 20.1, SU 20.2	SDL:3
			Describe etiopathogenesis of oral cancer symptom cancer. Enumerate the appropriate investigations and disc
4.	**Communication skills – Role play**		
		AETCOM	SDL:4

Subject: General Surgery
Small Group Discussion

MBBS phase III/I -
Small group teachings/ Tutorials/ Integrated teaching/ Practical's: 35 hours

- Competencies written in red (horizontal) and green (vertical) are of alignment a
- 25 % of allotted time of the third professional shall be utilised for integrated lear clinical subjects and shall be assessed during the clinical subject's examination
- This allotted time will be utilised as integrated teaching by para- clinical subject Applied Anatomy, Clinical Pathology, Clinical Pharmacology, Clinical Microbiolo Instruments, Operative Surgery, Communication skills etc.).

S. NO	TOPICS	COMPETENCIES	SUBTOPICS	
1.	**Metabolic response to injury**			
		SU1.3	SGD: 1	
		AS3.1, AS9.3, AS9.4	Describe basic concepts of perioperative care-preoperative Describe the principles of preoperative evaluation Describe the principles of fluid therapy in the preoperative period	

			Enumerate blood products and describe the use of blood products in the preoperative period
		SU1.3	SGD: 2
			Describe basic concepts of perioperative care.- intraoperative
		SU1.3,	SGD: 3
		AS6.3	Describe basic concepts of perioperative care- postoperative Describe the common complications encountered by patients in the recovery room, their recognition and principles of management
2.	**Shock**		
		SU2.1,	SGD: 4
		PA6.3	Describe Pathophysiology of shock, types of shock & principles of resuscitation including fluid replacement and monitoring. Define and describe shock, its pathogenesis and its stages
		SU2.2,	SGD: 5
		IM15.3	Describe the clinical features of shock and its appropriate treatment Describe and discuss the physiologic effects of acute blood and volume loss
3.	**Blood and blood components**		
		SU3.2	SGD: 6
		PA22.4	Observe blood transfusions Enumerate blood components and describe their clinical uses
4.	**Burns**		

		SU4.1, SU4.2	SGD: 7	
			Elicit document and present history in a case of Burns and perform physical examination. Describe Pathophysiology of Burns. Describe Clinical features, Diagnose type and extent of burns and plan appropriate treatment.	
		SU4.3	SGD: 8	
		FM2.25	Discuss the Medicolegal aspects in burn injuries. Describe types of injuries, clinical features, patho-physiology, postmortem findings and medico-legal aspects in cases of burns, scalds, lightening, electrocution and radiations	
5.	**Wound healing and wound care**			
		SU5.2, SU5.3	SGD: 9	
			Elicit, document and present a history in a patient presenting with wounds. Differentiate the various types of wounds, plan and observe management of wounds.	
		SU5.4	SGD:10	
			Discuss medico legal aspects of wounds	
		FM3.3 , FM3.4	Mechanical injuries and wounds: Define, describe and classify different types of mechanical injuries, abrasion, bruise, laceration, stab wound, incised wound, chop wound, defense wound, self-inflicted/fabricated wounds and their	

		, FM3.6	medico-legal aspects. Mechanical injuries and wounds: define injury, assault & hurt. Describe IPC pertaining to injuries Mechanical injuries and wounds:Describe healing of injury and fracture of bones with its medico-legal importance
6.	**Surgical infections**		
		SU6.1	SGD:11
			Define and describe the aetiology and pathogenesis of surgical
		MI7.1	Infections Describe the etio-pathogenesis and discuss the laboratory diagnosis of infections of genitourinary system
		SU6.2	SGD:12
			Enumerate Prophylactic and therapeutic antibiotics
			Plan appropriate management
7.	**Surgical Audit and Research**		
		SU7.1, SU7.2	SGD:13
			Describe the Planning and conduct of Surgical audit Describe the principles and steps of clinical research in General Surgery
8.	**Ethics**		
		SU8.1 ,SU8.2	SGD:14
			Describe the principles of Ethics as it pertains to General Surgery Demonstrate Professionalism and empathy to the patient undergoing general surgery

9.	**Investigation of surgical patient**			
		SU9.1	SGD:15	
			Choose appropriate biochemical, microbiological, pathological, imaging investigations and interpret the investigative data in a surgical patient	Biochem
		SU9.2	SGD 16	
			Biological basis for early detection of cancer and multidisciplinary approach in management of cancer	
10.	**Pre, intra and post-operative management.**			
		SU10.1	SGD:17	
			Describe the principles of perioperative management of common	
			surgical procedures	
11.	**Nutrition and fluid therapy**			
		SU12.1	SGD:18	Ph
			Enumerate the causes and consequences of malnutrition in the surgical patient	
		SU12.2	Describe and discuss the methods of estimation and replacement Of the fluid and electrolyte requirements in the surgical patient	

		SU12.3	Discuss the nutritional requirements of surgical patients, the methods of providing nutritional support and their complications	
12.	**Transplantation**			
		SU13.3	SGD: 19	
			Discuss the legal and ethical issues concerning organ donation	
13.	**Basic Surgical Skills**			
		SU14.2	SGD: 20	
			Describe Surgical approaches, incisions and the use of appropriate	
			instruments in Surgery in general.	
		SU14.3	SGD: 21	
			Describe the materials and methods used for surgical wound	
			closure and anastomosis (sutures, knots and needles)	
14	**Biohazard Disposal**	SU15.1	SGD 22	Microbi
			Describe **c**lassification of hospital waste and appropriate methods of disposal	
		MI8.7	Demonstrate Infection control practices and use of Personal Protective Equipments (PPE)	
15.	**Trauma**			
		SU17.3	SGD:23	
			Describe the Principles in management of mass casualties	
16.	**Skin and Subcutaneous Tissue**		SGD 24	
		SU18.1	Describe the pathogenesis, clinical features and management of	
		SU18.2	various cutaneous and subcutaneous infections. Classify skin tumors	

		SU18.3	Differentiate different skin tumors and discuss their management. Describe and demonstrate the clinical examination of surgical patient including swelling and order relevant investigation for diagnosis. Describe and discuss appropriate treatment plan.
17.	**Developmental anomalies of face, mouth and jaws**		
		SU19.1, 19.2	SGD:25
			Describe the etiology and classification of cleft lip and palate. Describe the Principles of reconstruction of cleft lip and palate
18	**Oropharyngeal carcinoma**		SGD 26
		SU20.1 SU20.2	Describe etiopathogenesis of oral cancer symptoms and signs of oropharyngeal cancer Enumerate the appropriate investigations and discuss the Principles of treatment
19.	**Disorders of salivary glands**		
		SU21.1	SGD:27
		AN34.1 AN28.9	Describe surgical anatomy of the salivary glands, pathology, and clinical presentation of disorders of salivary glands Describe & demonstrate the morphology, relations and nerve supply of submandibular salivary gland & submandibular ganglion

			Describe & demonstrate the parts, borders, surfaces, contents, relations and nerve supply of parotid gland with course of its duct and surgical importance	
		SU21.2	SGD:28	
			Enumerate the appropriate investigations and describe the Principles of treatment of disorders of salivary glands	
20.	**Thyroid and Parathyroid Glands**			
		SU22.1, 22.2	SGD:29	Hun
		AN35.2	Describe the applied anatomy and physiology of thyroid. Describe the etiopathogenesis of thyroidal swellings. Describe & demonstrate location, parts, borders, surfaces, relations & blood supply of thyroid gland	
		SU22.3	SGD:30	
		PA32.1	Demonstrate and document the correct clinical examination of thyroid swellings and discus the differential diagnosis and their management Enumerate, classify and describe the etiology, pathogenesis, pathology and iodine dependency of thyroid swellings	
		SU22.4, SU22.5	SGD:31	
		AN35.8	Describe the clinical features, classification and principles of management of thyroid cancer	

			Describe the applied anatomy of parathyroid Describe and discuss the clinical features of hypo - and hyperparathyroidism and the principles of their management Describe the anatomically relevant clinical features of Thyroid swellings	
21.	**Breast**			
		SU 25.1	SGD:32	Human
		AN9.2	Describe applied anatomy and appropriate investigations for breast disease Breast-Describe the location, extent, deep relations, structure, age changes, blood supply, lymphatic drainage, microanatomy and applied anatomy of breast	
		SU 25.2	SGD:33	
			Describe the etiopathogenesis, clinical features and principles of management of benign breast disease including infections of the breast.	
22.	**Vascular diseases**			
		SU 27.1, 27.2, 27.3, 27.4	SGD:34	
		AN20.9	Describe the etiopathogenesis, clinical features, investigations and principles of treatment of occlusive arterial disease. Demonstrate the correct examination of the vascular system and enumerate and describe the investigation of vascular disease. Describe clinical features, investigations and principles of management of vasospastic disorders. Describe the types of gangrene and principles of amputation.	

			Identify & demonstrate palpation of vessels (femoral, popliteal, dorsalis pedis, post tibial), Mid inguinal point, Surface projection of: femoral nerve, Saphenous opening, Sciatic, tibial, common peroneal & deep peroneal nerve, great and small saphenous veins	
		SU 27.5, 27.6, 27.7	SGD:35	
		AN6.3 AN23.7	Describe the applied anatomy of venous system of lower limb. Describe pathophysiology, clinical features, Investigations and principles of management of DVT and Varicose veins. Describe pathophysiology, clinical features, investigations and principles of management of Lymph edema, lymphangitis and Lymphomas. Explain the concept of lymphoedema and spread of tumors via lymphatics and venous system Mention the extent, relations and applied anatomy of lymphatic duct	

MBBS Phase III/II-

Small group teachings/ Tutorials/ Integrated teaching/ Practical's: 125 hou

- Competencies written in red (horizontal) and green (vertical) are of alignment a
- 25 % of allotted time of the third professional shall be utilised for integrated lear clinical subjects and shall be assessed during the clinical subject's examination
- This allotted time will be utilised as integrated teaching by para- clinical subject Applied Anatomy, Clinical Pathology, Clinical Pharmacology, Clinical Microbiolo Instruments, Operative Surgery, Communication skills etc.).

SR. NO.	TOPICS	COMPETENCIES	SUBTOPICS
1.	**Shock**		
		SU 2.3	SGD: 1
		PA6.3	Communicate and counsel patients and families about the treatment and prognc of shock demonstrating empathy and ca Define and describe shock, its pathogene and its stages
2	**Blood and blood components**		
		SU 3.3	SGD: 2
		PA22.4	Councell patients and family/friend for blood transfusion and blood donation. Enumerate blood components and describe their clinical uses
3.	**Burns**		
		SU 4.4	SGD: 3
			Communicate and counsel patients and families on the outcome and rehabilitati demonstrating empathy and care.

4.	**Surgical infections**		
		SU 6.1, 6.2,	SGD: 4
		OR3.1,OR3.3,OR4.1	Communicate and counsel patients and families on the outcome and rehabilitati demonstrating empathy and care. Describe and discuss the aetiopathogene clinical features, Investigations and principles of management of Bone and Jo infections. Describe and discuss the clini features, Investigation and principles of management of Tuberculosis affecting major joints (Hip, Knee) including cold abcess and caries spine a) Acute Osteomyelitis b) Subacute osteomyelitis c) Acute Suppurative arthritis d) Septic arthritis & HIV infection e) Spirochaetal infection f) Skeletal Tuberculosis. Participate as a member in team for procedures like drainage of abscess, sequestrectomy/ saucerisation and arthrotomy
5.	**Ethics**		
		SU 8.3	SGD: 5
			Discuss Medico-legal issues in surgical practice
6.	**Investigation of surgical patient**		
		SU 9.2	SGD: 6

			Biological basis for early detection of can and multidisciplinary approach in management of cancer
		SU 9.3	SGD: 7
			Communicate the results of surgical investigations and counsel the patient appropriately.
7.	**Pre, intra and post operative management.**		
		SU 10.2	SGD: 8
		IM24.11	Describe the steps and obtain informed consent in a simulated environment. Describe and discuss the aetiopathogenesis,clinical presentation, identification, functional changes, acute care, stabilization, management and rehabilitation of the elderly undergoing surgery
		SU 10.3	SGD: 9
			Observe common surgical procedures an assist in minor surgical procedures; obse emergency life saving surgical procedure
		SU 10.4	SGD: 10
			Perform basic surgical skills such as first a including suturing and minor surgical procedures in simulated environment.
8.	**Anaesthesia and Pain Management**		
		SU 11.3	SGD: 11
			Demonstrate maintenance of an airway i mannequin or equivalent.
		SU 11.1, 11.2	SGD: 12

			Describe principles of preoperative assessment. Enumerate the principles of general, regional and local anaesthesia.
		SU 11.3, 11.4, 11.5	SGD: 13
			Enumerate the indications and principles day care general surgery. Describe principles of providing post-operative pa relief and management of chronic pain. Describe principles of safe General surge
9.	**Nutrition and fluid therapy**		
		SU 12.1, 12.2	SGD: 14
			Enumerate the causes and consequnces malnutrition in the surgical patient. Describe and discuss the methods of estimation and replacement of the fluid electrolyte requirements in the surgical patient.
		SU 12.3	SGD: 15
			Discuss the nutritional requirements of surgical patients, the methods of providi nutritional support and their complicatio
10.	**Transplantation**		
		SU 13.3	SGD: 16
			Discuss the legal and ethical issues concerning organ donation.
11.	**Biohazard disposal**		
		SU 15.1	SGD: 17
			Describe classification of hospital waste appropriate methods of disposal.
12.	**Minimally invasive General surgery**		

		SU 16.1	SGD: 18
			Minimally invasive General surgery: Describe indications advantages and disadvantages of minimally invasive General surgery.
13.	**Trauma**		
		SU 17.4	SGD: 19
			Describe pathophysiology, mechanism o head injuries.
		SU 17.5	SGD: 20
			Describe clinical features for neurologica assessment and GCS in head injuries.
		SU 17.6,	SGD: 21
		PM8.1	Choose appropriate investigations and discuss the principles of management of head injuries. Describe the clinical features, evaluation diagnosis and management of disability following traumatic brain injury
		SU 17.7	SGD: 22
		OR11.1	Describe the clinical features of soft tissu injuries. Choose appropriate investigatio and discuss the principles of managemer Describe and discuss the aetiopathogene clinical features, Investigations and principles of management of benign and malignant bone tumours and pathologica fractures
		SU 17.8	SGD: 23
			Describe pathophysiology of chest injurie
		SU 17.9	SGD: 24

			Describe the clinical features and princip of management of chest injuries.
		SU 17.10	SGD: 25
			Demonstrate Airway maintenance. Recognise and manage tension pneumothorax, hemothorax and flail che in simulated environment.
14.	**Skin and subcutaneous tissue**		
		SU 18.3	SGD: 26
		PM7.9	Describe and demonstrate the clinical examination of surgical patient including swelling and order relevant investigation for diagnosis. Describe and discuss appropriate treatment plan. Enumerate the indications of debrideme and Split thickness skin grafting.
15.	**Oropharyngeal cancer**		
		SU 20.1	SGD: 27
			Describe etiopathogenesis of oral cancer Symptoms and signs of oropharyngeal cancer.
		SU 20.2	SGD: 28
			Enumerate the appropriate investigation for oropharyngeal cancer.
		SU 20.2	SGD: 29
			Enumerate the appropriate investigation for oropharyngeal cancer.
		SU 20.3	SGD: 30
			Enumerate the principles of treatment fo oropharyngeal cancer.
		SU 20.3	SGD: 31

			Enumerate the principles of treatment fo oropharyngeal cancer.
16.	**Adrenal Glands**		
		SU 23.1, 23.2	SGD: 32
			Describe the applied anatomy of adrenal glands. Describe the etiology, clinical features and principles of management o disorders of adrenal glands.
		SU 23.3	SGD: 33
			Describe the clinical features, principles investigation and management of adrena tumors.
17.	**Pancreas**		
		SU 24.1,	SGD: 34
		PA32.6	Describe the clinical features, principles investigation, prognosis and managemer of pancreatitis. Describe the etiology, pathogenesis, manifestations, laboratory, morphologic features, complications and metastases pancreatic cancer
		SU 24.2	SGD: 35
			Describe the clinical features, principles investigation, prognosis and managemer of pancreatic endocrine tumors.
		SU 24.3	SGD: 36
			Describe the principles of investigation a management of pancreatic disorders including pancreatitis and endocrine tumors.

18.	**Breast**		
		SU 25.3	SGD: 37
			Describe the etiopathogenesis, clinical features, investigations and principles of treatment of benign and malignant tumo of breast.
		SU 25.3	SGD: 38
			Describe the etiopathogenesis, clinical features, investigations and principles of treatment of benign and malignant tumo of breast.
		SU 25.4	SGD: 39
			Counsel the patient and obtain informed consent for treatment of malignant conditions of the breast.
		SU 25.5	SGD: 40
			Demonstrate the correct technique to palpate the breast for breast swelling in mannequin or equivalent.
19.	**Cardio-thoracic General Surgery- Chest- Heart and Lungs**		
		SU 26.1	SGD: 41
			Outline the role of surgery in the management of coronary heart disease, valvular heart diseases and congenital he diseases.
		SU 26.2	SGD: 42
			Outline the role of surgery in the management of diseases of Thorax and Diaphragm
		SU 26.3	SGD: 43

			Describe the clinical features of mediasit diseases and the principles of manageme
		SU 26.4	SGD: 44
			Describe the etiology, pathogenesis, clini features of tumors of the lung and the principles of management.
20.	**Vascular Diseases**		
		SU 27.1	SGD: 45
			Describe the etiopathogenesis, clinical features, investigations and principles of treatment of occlusive arterial disease.
		SU 27.2	SGD: 46
			Demonstrate the correct examination of the vascular system and enumerate and describe the investigation of vascular disease.
		SU 27.3	SGD: 47
			Describe clinical features, investigations and principles of management of vasospastic disorders.
		SU 27.4	SGD: 48
			Describe the types of gangrene and principles of amputation.
		SU 27.5	SGD: 49
			Describe the applied anatomy of the venous system of lower limb.
		SU 27.6	SGD: 50
			Describe pathophysiology , clinical featu investigations and principles of management of DVT and varicose veins.
		SU 27.7	SGD: 51

			Describe pathophysiology, clinical featur Investigations and principles of management of lymph edema, lymphang and lymphomas.
		SU 27.8	SGD: 52
			Demonstrate the correct examination of the lymphatic system.
21.	**Abdomen**		
		SU 28.1 .	SGD: 53 .
		AN44.1.	Describe pathophysiology, clinical featur Investigations and principles of management of Hernias . Describe & demonstrate the Planes (transpyloric, transtubercular, subcostal, lateral vertical, linea alba, linea semilunaris), regions & Quadrants of abdomen .
		SU 28.1 .	SGD: 54
		AN44.4 . AN44.5	Describe pathophysiology, clinical featur Investigations and principles of management of Hernias . Describe & demonstrate extent, boundaries, contents of Inguinal canal including Hesselbach's triangle.
		SU 28.1	SGD: 55
			Describe pathophysiology, clinical featur Investigations and principles of management of Hernias
		SU 28.1	SGD: 56
		AN44.4 . AN44.5	Describe pathophysiology, clinical featur Investigations and principles of management of Hernias .

			Explain the anatomical basis of inguinal hernia.
		SU 28.1	SGD: 57
		AN15.3	Describe pathophysiology, clinical featur Investigations and principles of management of Hernias . Describe and demonstrate boundaries, floor, roof and contents of femoral triang
		SU 28.1,AN44.6,	SGD: 58
			Describe pathophysiology, clinical featur Investigations and principles of management of Hernias. Describe & demonstrate attachments of muscles of anterior abdominal wall
		SU 28.3	SGD: 59
			Describe causes, clinical features, complications and principles of mangam of peritonitis
		SU 28.3	SGD: 60
			Describe causes, clinical features, complications and principles of managament of peritonitis
		SU 28.3	SGD: 61
		AN47.5	Describe causes, clinical features, complications and principles of mangam of omental pathologies. Describe & demonstrate major viscera of abdomen under following headings (anatomical position, external and internal features, important peritoneal and other relations blood supply, nerve supply, lymphatic drainage and applied aspects)

		SU 28.4	SGD: 62
			Describe pathophysiology, clinical featur investigations and K principles of management of Intra-abdominal abscess mesenteric cyst, and retroperitoneal tumors
		SU 28.5	SGD: 63
		IM19.9	Describe the applied Anatomy and physiology of esophagus. Enumerate the indications for use of Surgery and botulinum toxin in the treatment of movement disorders
		SU 28.5,	SGD: 64
		IM15.4, IM15.6	Describe the applied Anatomy and physiology of esophagus. Elicit document and present an appropri history that identifies the route of bleedi quantity, grade, volume loss, duration, etiology, comorbid illnesses and risk factors. Distinguish between upper and lower gastrointestinal bleeding based on the clinical features
		SU 28.6,	SGD: 65
			Describe the clinical features, investigati and principles of management of benign and malignant disorders of esophagus.
		SU 28.6	SGD: 66
			Describe the clinical features, investigati and principles of management of benign and malignant disorders of esophagus
		SU 28.7	SGD: 67

			Describe the applied anatomy and physiology of stomach
		SU 28.8,	SGD: 68
		IM15.15	Describe and discuss the aetiology, the clinical features, investigations and principles of management of congenital hypertrophic pyloric stenosis, Peptic ulce disease, Carcinoma stomach. Describe and enumerate the indications, pharmacology and side effects of pharmacotherapy of acid peptic disease including Helicobacter pylori
		SU 28.9	SGD: 69
		IM15.2	Demonstrate the correct technique of examination of a patient with disorders o the stomach. Enumerate describe and discuss the evaluation and steps involved in stabilizi a patient who presents with acute volum loss and GI bleed
		SU 28.10	SGD: 70
		IM5.16	Describe the applied anatomy of liver. Describe the clinical features, Investigati and principles of management of liver abscess, hydatid disease, injuries and tumors of the liver. Describe and discuss the management o hepatitis, cirrhosis, portal hypertension, ascites, spontaneous, bacterial peritoniti and hepatic encephalopathy
		SU 28.10	SGD: 71

			Describe the applied anatomy of liver. Describe the clinical features, Investigati and principles of management of liver abscess, hydatid disease, injuries and tumors of t liver
		SU 28.10	SGD: 72
			Describe the applied anatomy of liver. Describe the clinical features, Investigati and principles of management of liver abscess, hydatid disease, injuries and tumors of t liver
		SU 28.11	SGD: 73
			Describe the applied anatomy of spleen. Describe the clinical features, investigati and principles of management of splenic injuries. Describe the post-splenectomy sepsis - prophylaxis
		SU 28.11	SGD: 74
		PA24.5	Describe the applied anatomy of spleen. Describe the clinical features, investigati and principles of management of splenic injuries. Describe the post-splenectomy sepsis – prophylaxis Describe and etiology and pathogenesis pathologic features of Tuberculosis of th intestine
		SU 28.12	SGD: 75
			Describe the applied anatomy of biliary system. Describe the clinical features,

			investigations and principles of management of diseases of biliary syster
		SU 28.12	SGD: 76
			Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary syster
		SU 28.12	SGD: 77
			Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary syster
		SU 28.12	SGD: 78
		AN47.2,PA24.6	Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary syster Discuss Paediatric surgery biliary disorde Name & identify various peritoneal folds pouches with its explanation. Describe a etiology and pathogenesis and pathologi and distinguishing features of inflammatory bowel disease
		SU 28.12	SGD: 79
		AN47.1	Describe the applied anatomy of biliary system. Describe the clinical features, investigations and principles of management of diseases of biliary syster Discuss Choledochal cyst. Describe & identify boundaries and recesses of Lesser & Greater sac

		SU 28.13, 28.14	SGD: 80
		PA24.7	Describe the applied anatomy of small a large intestine Describe the etiology and pathogenesis pathologic and distinguishing features of carcinoma of the colon
		SU 28.13, 28.14	SGD: 81
			Describe the clinical features, investigati and principles of management of disord of small and large intestine including neonatal obstruction and Short gut syndrome
		SU 28.13, 28.14	SGD: 82
			Describe the clinical features, investigati and principles of management of disord of small and large intestine including neonatal obstruction and Short gut syndrome
		SU 28.13, 28.14	SGD: 83
			Describe the clinical features, investigati and principles of management of disord of small and large intestine including neonatal obstruction and Short gut syndrome
		SU 28.13, 28.14	SGD: 84
			Describe the clinical features, investigati and principles of management of disord of small and large intestine including neonatal obstruction and Short gut syndrome
		SU 28.13, 28.14	SGD: 85

			Describe the clinical features, investigati and principles of management of disorde of small and large intestine including neonatal obstruction and Short gut syndrome
		SU 28.13, 28.14	SGD: 86
			Describe the clinical features, investigati and principles of management of disorde of small and large intestine including neonatal obstruction and Short gut syndrome
		SU 28.13, 28.14	SGD: 87
		AN55.2	Describe the clinical features, investigati and principles of management of disorde of small and large intestine including neonatal obstruction and Short gut syndrome Demonstrate the surface projections of: stomach, liver, fundus of gall bladder, spleen, duodenum, pancreas, ileocaecal junction, kidneys & root of mesentery
		SU 28.13, 28.14	SGD: 88
			Describe the clinical features, investigati and principles of management of disorde of small and large intestine including neonatal obstruction and Short gut syndrome
		SU 28.13, 28.14	SGD: 89
			Describe the clinical features, investigati and principles of management of disorde of small and large intestine including

			neonatal obstruction and Short gut syndrome
		SU 28.15	SGD: 90
			Describe the clinical features, investigati of diseases of Appendix including appendicitis and its complications.
		SU 28.15	SGD: 91
		AN55.1	Describe the principles of management diseases of Appendix including appendic and its complications. Demonstrate the surface marking of regi and planes of abdomen, superficial ingui ring, deep inguinal ring , McBurney's poi Renal Angle & Murphy's point
		SU 28.16	SGD: 92
			Describe applied anatomy including congenital anomalies of the rectum and anal canal
		SU 28.16	SGD: 93
			Describe applied anatomy including congenital anomalies of the rectum and anal canal
		SU 28.16	SGD: 94
			Describe applied anatomy including congenital anomalies of the rectum and anal canal
		SU 28.17	SGD: 95
			Describe the clinical features, investigati and principles of management of commo anorectal diseases
		SU 28.17	SGD: 96

			Describe the clinical features, investigati and principles of management of commo anorectal diseases
		SU 28.17	SGD: 97
			Describe the clinical features, investigati and principles of management of commo anorectal diseases
22.	**Urinary System**		
		SU 29.1	SGD: 98
			Describe the causes, investigations and principles of management of Hematuria
		SU 29.2	SGD: 99
			Describe the clinical features, investigati and principles of management of congen anomalies of genitourinary system
		SU 29.2	SGD: 100
			Describe the clinical features, investigati and principles of management of congen anomalies of genitourinary system
		SU 29.3	SGD: 101
			Describe the Clinical features, Investigati and principles of management of urinary tract infections
		SU 29.3	SGD: 102
		PA28.10	Describe the Clinical features, Investigati and principles of management of urinary tract infections including renal TB and abscess. Describe the etiology, pathogenesis, pathology, laboratory findings, distinguishing features progress and complications of acute and chronic pyelonephritis and reflux nephropathy

		SU 29.4	SGD: 103
			Describe the clinical features, investigati and principles of management of hydronephrosis
		SU 29.4	SGD: 104
			Describe the clinical features, investigati and principles of management of hydronephrosis
		SU 29.5	SGD: 105
		PA28.13	Describe the clinical features,investigatic and principles of management of renal calculi. Define, classify and describe the etiology pathogenesis, pathology, laboratory urin findings, distinguishing features, progression and complications of renal stone disease and obstructive uropathy
		SU 29.5	SGD: 106
			Describe the clinical features,investigatic and principles of management of renal calculi
		SU 29.6	SGD: 107
			Describe the clinical features, investigati and principles of management of renal tumours
		SU 29.7	SGD: 108
			Describe the principles of management c acute and chronic retention of urine
		SU 29.7	SGD: 109
		PA28.16	Describe the principles of management c acute and chronic retention of urine.

			Describe the etiology, genetics, pathogenesis, pathology, presenting features and progression of urothelial tumors
		SU 29.8	SGD: 110
			Describe the clinical features, investigati and principles of management of bladde cancer
		SU 29.8	SGD: 111
			Describe the clinical features, investigati and principles of management of bladde cancer
		SU 29.9	SGD: 112
			Describe the clinical features, investigati and principles of management of disorde of prostate
		SU 29.9	SGD: 113
			Describe the clinical features, investigati and principles of management of disorde of prostate
		SU 29.10	SGD: 114
			Demonstrate a digital rectal examination the prostate in a mannequin or equivale
		SU 29.10	SGD: 115
			Describe clinical features, investigations and management of urethral strictures
		SU 29.10	SGD: 116
		OG26.2	Describe clinical features, investigations and management of urethral strictures a urethral injuries.

			Describe the causes, prevention, clinical features, principles of management of genital injuries and fistulae
23.	**Penis, Testis and scrotum**		
		SU 30.1	SGD: 117
		AN46.1	Describe the clinical features, investigati and principles of management of phimos paraphimosis. Describe & demonstrate coverings, inter structure, side determination, blood sup nerve supply, lymphatic drainage & descent of testis with its applied anatom
		SU 30.1	SGD: 118
		PA29.1 PE21.14	Describe the clinical features, investigati and principles of management of phimos paraphimosis. Classify testicular tumors and describe th pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread of testicular tumors. Recognize common surgical conditions o the abdomen and genitourinary system a enumerate the indications for referral including acute and subacute intestinal obstruction, appendicitis, pancreatitis, perforation, intussusception, Phimosis, undescended testis, Chordee, hypospadiasis,Torsion testis, hernia Hydrocele, Vulval Synechiae
		SU 30.1,	SGD: 119

		PA29.2	Describe the clinical features, investigati and principles of management of phimos paraphimosis. Describe the pathogenesis, pathology, presenting and distinguishing features, diagnostic tests, progression and spread carcinoma of the penis
		SU 30.1	SGD: 120
		PA29.4	Describe the clinical features, investigati and principles of management of carcino penis. Describe the pathogenesis, pathology, hormonal dependency, presenting and distinguishing features, diagnostic tests, progression and spread of carcinoma of prostate
		SU 30.2	SGD: 121
			Describe the applied anatomy clinical features, investigations and principles of management of undescended testis.
		SU 30.3	SGD: 122
			Describe the applied anatomy clinical features, investigations and principles of management of epididymo-orchitis
		SU 30.4	SGD: 123
			Describe the applied anatomy clinical features, investigations and principles of management of varicocele
		SU 30.5	SGD: 124
			Describe the applied anatomy clinical features, investigations and principles of management of hydrocoele

		SU 30.4	SGD: 125
			Describe classification, clinical features, investigations and principles of management of tumours of testis

Internal Assessment

Subject: General surgery and allied including Orthopedics

Applicable for batches admitted from 2019 and onwards

Phase	IA – 1 -Exam			IA – 2 -Exam		
	Theory General Surgery Only (January)	**Practical EOP**	Total Marks	**Theory General Surgery Only (May)**	**Practical of Allied EOP**	Total Marks
Second MBBS	50	50	100	50	Orthopedics = 25 Radiodiagnosis = 25	100

Phase	IA – 3 -Exam			IA – 4 -Exam		
	Theory General Surgery + allied) (January)	**Practical EOP**	Total Marks	**Theory General Surgery + allied) (April)**	**Practical of Allied EOP**	Total Marks
III MBBS Part I	50	50	100	50	Orthopaedics =25 Anaesthesia =25	100

Phase	IA – 5 - Exam			Prelim Exam (As per university pattern)		
	Theory Gen Surgery + Allied (May)	**Practical End of** 8 Weeks posting	Total Marks	**Theory (November)**	**Practical (November)**	Total Marks
III MBBS Part II	100	100	200	100 x 2 papers = 200	200	400

(There will be FORMATIVE ASSESSMENT at the End of four weeks Clinical Posting of General Surgery NOT to be added to INTERNAL ASSESSMENT).

Assessment in CBME is **ONGOING PRCESS**,

No Preparatory leave is permitted.

1. There shall be 6 internal assessment examinations in General Surgery including allied.

2. The suggested pattern of question paper for internal assessment internal examinations, except prelim examination is attached at the end. Pattern of the prelims examinations should be similar to the University examinations.

3. Internal assessment marks for theory and practical will be converted to out of 50 (theory) +50 (practical). Internal assessment marks, after conversion, should be submitted to university within the stipulated time as per directives from the University.

4. **Conversion Formula for calculation of marks in internal assessment examinations**

	Theory	**Practical**
Phase II	100	100
Phase III/I	100	100
Phase III/II	300	300
Total	**500**	**500**
Conversion out of	**50**	**50**
Conversion formula	**Total marks in 6 IA theory examinations /10**	**Total marks in 6 IA Practical examinations /10**
Eligibility criteria after conversion	**20**	**20**
	Combined theory + Practical = 50	

5. While preparing Final Marks of Internal Assessment, the rounding-off marks shall done as illustrated in following table.

Total Internal Assessment Marks	Final rounded marks
33.01 to 33.49	33
33.50 to 33.99	34

6. Students must secure at least 50% marks of the total marks (combined in theory and practical / clinical; not less than 40 % marks in theory and practical separately) assigned for internal assessment in order to be eligible for appearing at the final University examination of that subject.
7. Internal assessment marks will not to be added to marks of the University examinations and will be shown separately in mark list.

8. Remedial measures

A. Remedial measures for non-eligible students

i) At the end of each internal assessment examination, students securing less than 50% marks shall be identified. Such students should be counseled at the earliest and periodically. Extra classes for such students may be conducted, if needed.
ii) If majority of the students found to be weak in a particular area then extra classes must be scheduled for all such students.
iii) Even after these measures, if a student is failed to secure 50% marks combined in theory and practical (40% separately in theory and practical) after prelim examination, the student shall not be eligible for final examination.
iv) Non eligible candidates are offered to reappear for repeat internal assessment examination/s, which must be conducted 2 months before next University examination. Extra classes for such students may be conducted for such students. The pattern for this repeat internal assessment examination shall be similar to the final University examination. Only the marks in this examination shall be considered for deciding the eligibility criteria. Following conversion formula shall be used for converting the marks.

	Theory	Practical
Remedial examination (as per final examination)	**200**	**200**
Conversion out of	**50**	**50**
Conversion formula	**Marks in remedial theory examinations /4**	**Marks in remedial Practical examinations /4**
Eligibility criteria after conversion	**20**	**20**
	Combined theory + Practical = 50	

B. Remedial measures for absent students:

i. If any of the students is absent for any of the 6 IA examinations due to any reasons, following measures shall be taken.
ii. The student is asked to apply to the academic committee of the college for reexamination, through HOD, to ascertain the genuineness of the reason for absentee.
iii. If permitted by academic committee, an additional examination for such students is to be conducted after prelims examination. Marks for such additional examination shall be equal to the missed examination.
iv. Even if a student has missed more than one IA examination, he/she can appear for only one additional IA examination. In such scenario, eligibility should be determined by marks obtained in internal assessment examinations for which the candidate has appeared, without changing the denominator of 500.

Internal Assessment Practical Examinations

II MBBS

Internal Assessment - 1

General Surgery

Clinical A (30)			OSCE & Viva B (20)		
Long Case	Demonstration of clinical signs	Communication skills	OSCE & Table viva (20)		Grand Total A +B= 50
			OSCE of Psychomotor Skills	Table viva [Surgical pathology, X rays, Instruments, Logbook, Journal]	
20	5	5	10	10	50

Internal Assessment - 2

Orthopaedics and Radiodiagnosis (to be conducted at the end of respective clinical postings)

Subject: General Surgery Allied Practical (IA – 2) Examination in Orthopaedics			
Case	OSCE 1	Viva (Surgical Pathology, Radiology, Instruments and Surgical Procedure, Journal / log book)	Practical Total
10	5	10	25

Subject: General Surgery Allied Practical (IA – 2) Examination in Radiodiagnosis			
X-Ray and other diagnostic modalities - Basics	Viva (Knowledge of legal aspects, radiation protection etc)	Journal / log book	Practical Total
15	5	5	25

* The marks for internal assessment – 2 shall be communicated by orthopedics / Radiology department to General Surgery department immediately after completion of examination and assessment.

III MBBS Part I

Internal Assessment - 3

General Surgery

Clinical A (30)			OSCE & Viva B (20)		
Long Case	Demonstration of clinical signs	Communication skills	OSCE & Table viva		Grand Total A +B= 50
			OSCE of Psychomotor Skills	Table viva [Surgical pathology, X rays, Instruments, Logbook, Journal]	
20	5	5	10	10	50

Internal Assessment - 4

Orthopaedics and Anaesthesia

Subject: General Surgery Allied Practical (IA – 2) Examination in Orthopaedics			
Case	OSCE 1	Viva (Surgical Pathology, Radiology, Instruments and Surgical Procedure, Journal / log book)	Practical Total
10	5	10	25

Subject: General Surgery Allied Practical (IA – 2) Examination in Anesthesia			
OSCE	Drugs, Instruments	Viva	Practical Total
10	8	7	25

* The marks for internal assessment – 4 shall be communicated by orthopedics / Anaesthesia department to General Surgery department immediately after completion of examination and assessment.

III MBBS Part II

Internal Assessment - 5

General Surgery

Clinical A (60)			OSCE & Viva B (40)		
Long Case	Demonstration of clinical signs	Communication skills	OSCE & Table viva (40)		Grand Total A +B= 100
			OSCE of Psychomotor Skills	Table viva [Surgical pathology, X rays, Instruments, Logbook, Journal]	
40	10	10	20	20	100

MUHS final practical examination

General Surgery

Seat No.	Long Case General Surgery including communication skill (60)		Short Case 1 General Surgery (30)		Short Case 2 Ortho (30)		General Surgery (60) OSCE # & Table viva			Ortho (20)	Grand Total
	Long case	Communication skills *	Short case	Clinical signs demo	Short case	Clinical signs demo	Instruments +Procedure+ Log book	X rays + Surgical Pathology +Journal	OSCE	OSCE (10) + Table (10)	
	50	10	20	10	20	10	20	20	20	20	200

OSCE Stations may include General examinations, Local examinations, psychomotor skills, Communication skills, AETCOM etc.

*Communication skills to be assessed by Kalamazoo Consensus, clinical signs to be assessed by either GLOBAL Rating Scale or OSCE, Psychomotor Skills to be assessed by OSCE with checklist. If the skills are small, 2 or 3 skills may be combined.

MAHARASHTRA UNIVERSITY OF HEALTH SCIENCES, NASHIK

Format / Skeleton of question paper for 1st & 2nd internal

Assessment Theory Examinations.

SECTION "A" MCQ

Instructions:

1) *Put ☒ in the appropriate box below the question number once only.*
2) *Use blue ball point pen only.*
3) *Each question carries **one mark.***
4) *Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.*

SECTION "A" MCQ (10Marks)

1. Multiple Choice Questions (Total -10 MCQ of One mark each from General surgery) (1x10=10)

a) b) c) d) e) f) g) h) i) j)

Instructions:

1) *Use **blue/black** ball point pen only.*
2) ***Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
3) ***All** questions are **compulsory**.*
4) *The number to the **right** indicates **full** marks.*
5) *Draw diagrams **wherever** necessary.*

2. Long Answer Question (Any 2 out of 3) (General surgery) (2 x 10 = 20)

a) b) c)

3. Short answer questions (Any 4 out of 5) (At least2 Clinical reasoning question) (General surgery) (4 x 5 = 20)

a) b) c) d) e)

Format / Skeleton of question paper for 3rd and 4th internal Assessment Theory Examinations (III MBBS Part I)

SECTION "A" MCQ

Instructions:

5) Put ☒ in the appropriate box below the question number once only.
6) Use blue ball point pen only.
*7) Each question carries **One mark.***
8) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (10Marks)

1. Multiple Choice Questions (Total -10 MCQ of One mark each from General surgery) (1x10=10)

a) b) c) d) e) f) g) h) i) j)

Instructions:

*1) Use **blue/black** ball point pen only.*
*2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
*3) **All** questions are **compulsory**.*
*4) The number to the **right** indicates **full** marks.*
*5) Draw diagrams **wherever** necessary.*

2. Long Answer Question (Any 2 out of 3) (General surgery) (2 x 10 = 20)

b) b) c)

3. Short answer questions (1 from AETCOM) (General surgery) (2 x 5 = 10)

a) b)

4. Short answer questions (Any 2 out of 3) (At least 2 Clinical reasoning question) (Orthopaedics) (2 x 5 = 10)

a) b) c)

Separate answer sheet for question 4 (SAQ from orthopaedics) may be used for the ease of evaluation.

Format / Skeleton of question paper 5th internal assessment

Theory Examinations (III MBBS Part II)

SECTION "A" MCQ

Instructions:

9) Put ☒ in the appropriate box below the question number once only.
10) Use blue ball point pen only.
*11) Each question carries **One mark.***
12) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20Marks)

1. Multiple Choice Questions (Total-20MCQ of One mark each - 15 General surgery , 2 orthopaedics, 1 anesthesia, 1 dentistry and 1 radiology) (1 x20=20)

a) b) c) d) e) f) g) h) i) j)

k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

Instructions:

*1) Use **blue/black** ball point pen only.*
*2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
*3) **All** questions are **compulsory**.*
*4) The number to the **right** indicates **full** marks.*
*5) Draw diagrams **wherever** necessary.*

SECTION "B"

2 . Long Answer Questions (Structured Case Based) (General Surgery) (2x15=30)

a) b)

3.Short Answer Questions (Any 3 out of 4) (Any one should be Clinical reasoning), 1 from AETCOM (General Surgery) (3x5=15)

a) b) c) d)

SECTION "C"

4. Short Answer Questions (1 Orthopedics, 1 Anesthesia, 1 Dentistry or Radiodiagnosis) (4 x5=20)

a) b) c) d)

5. Long Answer Question (Structured Case Based) (Orthopedics) (1 x15=15)

a)

Separate answer sheet for question 5 (LAQ from orthopaedics) may be used for the ease of evaluation.

Format / Skeleton of question paper for University Theory Examinations (III MBBS Part II) Paper – I

(Subject names to be removed)

SECTION "A" MCQ

Instructions:

13) Put ☒ in the appropriate box below the question number once only.
14) Use blue ball point pen only.
*15) Each question carries **One mark.***
16) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20Marks)

1. Multiple Choice Questions (Total-20MCQ of One mark each) – (General surgery) (1 x20=20)

a) b) c) d) e) f) g) h) i) j)

k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

Instructions:

*1) Use **blue/black** ball point pen only.*
*2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
*3) **All** questions are **compulsory**.*
*4) The number to the **right** indicates **full** marks.*
*5) Draw diagrams **wherever** necessary.*

SECTION "B"

2 . Long Answer Questions (Structured Case Based) (General Surgery) (2x15=30)

a) b)

3.Short Answer Questions (Any one should be Clinical reasoning, 1 from AETCOM) (General Surgery) (3x5=15)

a) b) c)

SECTION "C"

4. Long Answer Question (Structured Case Based) (General Surgery) (1 x15=15)

a)

3.Short Answer Questions (General Surgery) (Any 4 out of 5) (4 x5=20)

a) b) c) d) e)

Format / Skeleton of question paper for University Theory Examinations (III MBBS Part II) Paper II

(Subject names to be removed)

SECTION "A" MCQ

Instructions:

17) Put ☒ in the appropriate box below the question number once only.
18) Use blue ball point pen only.
*19) Each question carries **One mark.***
20) Students will not be allotted mark if he/she overwrites strikes or put white ink on the cross once marked.

SECTION "A" MCQ (20Marks)

1. Multiple Choice Questions (Total-20MCQ of One mark each - 15 General surgery , 2 orthopedics, 1 anesthesia, 1 dentistry and 1 radiology) (1 x20=20)

a) b) c) d) e) f) g) h) i) j)

k) l) m) n) o) p) q) r) s) t)

SECTION "B" & "C"

Instructions:

*1) Use **blue/black** ball point pen only.*
*2) **Do not** write anything on the **blank portion of the question paper**. If written anything, such type of act will be considered as an attempt to resort to unfair means.*
*3) **All** questions are **compulsory**.*
*4) The number to the **right** indicates **full** marks.*
*5) Draw diagrams **wherever** necessary.*

SECTION "B"

2 . Long Answer Questions (Structured Case Based) (General Surgery) (2x15=30)

a) b)

3.Short Answer Questions (any 5 out of 6) (1 Gen. Surgery, 2 Radiodiagnosis, 2 Anesthesia, 1 Dentistry) (5x5=25)

a) b) c) d) e) f)

SECTION "C"

4. Long Answer Question (Structured Case Based) (Orthopedics) (1 x15=15)

a)

3.Short Answer Questions (Any 2 out of 3) (Orthopedics) (2 x5=10)

a) b) c)

Paper wise distribution of topics for Prelim & MUHS Annual Examination

Year: **III-II MBBS** Subject: **_General Surgery and allied**

Paper	Section	Topics
I	A	MCQs on all topics of paper I of Surgery
	B	Metabolic response to injury, Shock, Blood and blood components, Burns, Wound healing and wound care, Surgical infections, Surgical Audit and Research, Nutrition and fluid therapy, Transplantation, Biohazard disposal, Trauma, Skin and subcutaneous tissue, Developmental anomalies of face, mouth and jaws, Oropharyngeal cancer, Disorders of salivary glands, Endocrine General Surgery: Thyroid and parathyroid, Adrenal glands, Breast, Vascular diseases, Ethics & AETCOM (module 4.3,4.5,4.6)
	C	Abdomen- including Hernia, Peritoneum, GIT tract including esophagus, stomach, small intestine, colon rectum and anal canal, Liver , Spleen, Pancreas, Biliary tract , Minimally invasive Surgery, Pediatric surgery
II	A	MCQs on all topics of the paper II including orthopaedics, anaesthesia, radiology , radiotherapy and dentistry .
	B	Cardio-thoracic - Chest - Heart and Lungs ,Urinary System- Kidney ureter and urinary bladder , Penis, Testis and scrotum, Plastic surgery, Oncology, Investigation of surgical patient, Pre, intra and post- operative management Radiology, Radiotherapy, Anesthesia and pain management , Dentistry
	C	Orthopedics ,