



Operational Manual of MBBS Curriculum 2021

Subject:
Surgery & Allied Subjects



Developed By
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Preface

Curriculum is not the sole determinant of the outcome, it is very important as it guides the faculty in preparing their instruction and tells the students what knowledge, skills and attitude they are to develop through the teaching learning process. The ultimate indicators of assessing curriculum in medical education is the quality of health services provided by its graduates with required competencies.

To implement that curriculum all concerned such as teachers, students, deans, administrators, policymakers to be more dynamic, should run smoothly with the time & appropriate pace. This operational manual to implement the curriculum will act as a catalyst, will give momentum in implementing the curriculum. This operational manual will help to implement the curriculum uniformly, effectively, efficiently & smoothly at all the govt. & non govt. medical colleges under all the universities all over the country.

I would like to mention that the curriculum planning process is continuous, dynamic and never-ending as it is not static. If it is to serve best, the needs of the individual student, teacher, educational institution and the community to whom we are ultimately accountable, must be assessed. Before that assessment we should seriously concentrate for the better implementation of the curriculum. Implementation in regards to teaching-learning, integrated teaching, teaching on generic topics on medical humanities, clinical teaching, ambulatory care/OPD based teaching and acquiring identified competencies of each subject. There is a proverb that “Assessment drives Learning”. To ensure students’ learning formative and summative assessments should be taken care of properly. This operational manual on developed MBBS curriculum 2021 will play a vital role in those regards.

I congratulate all who were involved in developing this operational manual implement MBBS curriculum 2021, particularly the Director (Research, Publication & Curriculum Development), DGME, focal persons, teachers, members of the concerned society, seniors, juniors, legendary teachers & heads of the departments of Surgery and Allied Subject. Different Govt. and non Govt. medical colleges. Special appreciation to the Deans, Faculty Medicine of different medical Universities who were requesting to develop this operational manual and will take lead to implement this operational manual. They contributed a lot to complete this activity, a commendable job and deserve special appreciation.

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Acknowledgement

It is easier to change a graveyard than to change a curriculum. Yet then time & society demand for the change of the curriculum. In such a situation MBBS curriculum 2012 was reviewed and updated in 2021 to fulfill the need of the stakeholders. The updated MBBS curriculum 2021 was started to implement from the August 2022. For implementation of that reviewed & updated curriculum operational manual is also the demand of the present time.

For better implementation of integrated teaching, teaching as per identified competencies, teaching on generic topics on medical humanities, planning, designing, constructing assessment tools for formative and summative assessment, this operational manual will act as the road map.

Research, Publication & Curriculum Development (RPCD) of DGME in association with heads of the departments of Surgery and Allied Subject, Phase IV of different Govt. & non govt. medical colleges & Deans Offices, DGME, ME, FWD, BM&DC took the initiative to develop the operational manual. Concerned stakeholders meetings were held through active participation of different professional groups, focal persons, faculty members, heads of the department of Surgery and Allied Subject of Phase IV of different govt. & non govt medical colleges of Bangladesh.

I hope this operational manual will help to serve as guiding principle for the students and as well as for faculty members.

Last but not least, I would like to extend my deep gratefulness to the Director General, DGME, ADG(ME) & ADG(Admin), DGME, all Directors of DGME, faculty members of Surgery and Allied Subject of different Govt & non Govt medical colleges and others who shared their expertise, insights, contributed and worked hard to develop this precious document. Efforts given by the focal persons providing their valuable time, opinions & efforts during the development process of this operational manual for Phase IV of MBBS curriculum are duly acknowledged.

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Background and Rationale

Curriculum is a study track along which students travel throughout the course of study. In this journey teachers play an important role in regards to teaching learning and assessment. To produce need based, community oriented, competent graduate medical doctors, MBBS curriculum was reviewed and updated in 2021. The updated MBBS curriculum 2021 was started to implement from the August 2022. For better implementation of MBBS curriculum 2021 effectively, uniformly & competently an operational manual of each subject was felt by each of the Faculty of Medicine of all universities. In this regard Director (Research, Publication & Curriculum Development (RPCD) of Directorate General of Medical Education (DGME) has taken the time felt initiative under the guidance of Director General, DGME. Thanks to DG, DGME, Director (RPCD), DGME, focal persons, members of the concerned society, senior, junior and legendary teachers and heads of the department of concerned subject of different government & non government medical colleges to finalise this operational manual. This operational manual will work as the skeleton of the curriculum in a comprehensive manner. This user-friendly document will serve the purposes of the faculty to ensure better teaching-learning and assessment to produce knowledge competent and compassionate physicians in Bangladesh.

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Table of Contents

Content	Page No.
Objective of the Manual	7
1. Departmental Objectives	8
2. List of Competencies to Acquire	9
3. Common Information and Activities of Surgery and Allied Subjects	10
4. Teaching-Learning Methods, Teaching Aids and In-Course Evaluation	17
5. Learning Objectives in Surgery	21
6. Generic Topics on Medical Humanities in Phase IV	27
7. Integrated Teaching in Phase IV	28
8. Phase-Wise Academic Activities of Surgery & Allied Subjects	30
9. Format of Assessments:	90

Objective of the Manual

This operational manual will help in conducting the courses in Surgery & Allied subjects in MBBS e.g., teaching, in course assessment, question setting, moderation of questions, conducting the final professional MBBS examination, and tabulation based on the MBBS curriculum 2021. This manual will also help to maintain uniformity in the implementation of the MBBS curriculum throughout all the medical colleges of Bangladesh

1. Departmental Objectives:

The aim of this course is to provide community oriented & need based education so as to produce basic doctors who will be able to:

- elicit a complete clinical history & physical findings and formulate diagnosis of common surgical problems prevalent in Bangladesh and abroad.
- carry out necessary investigations & interpret the results with proper utilization for management
- perform minor surgical procedures and treat minor surgical problems
- recognize the major surgical problems needing specialized care, initiate the primary treatment and refer to the appropriate centers
- diagnose and provide competent primary care in surgical emergencies.
- carry out the responsibility of management in common casualties or natural calamities to offer and arrange basic life support.
- take necessary preventive & prophylactic measures for surgical problems
- be involved in continued care & rehabilitation of surgical patients.
- deliver health education in the community with emphasis to the preventive aspects of surgical disorders.
- demonstrate the right attitude in
 - Patient Care
 - Community health care
 - Continuing medical education & research
 - Observing the moral & legal codes of medical ethics

2. List of Competencies to acquire:

I. Clinical –

- a. rapport building with patients, relatives, colleagues, health care professionals and supporting staffs of the hospital
- b. take detailed relevant history
- c. conduct thorough clinical Examination
- d. decide on a provisional working diagnosis
- e. perform and/or order relevant investigations considering the cost effectiveness
- f. interpret common laboratory and imaging investigations
- g. calculate fluid and electrolyte requirements
- h. evaluate and make initial management of acute trauma patient
- i. adopt aseptic techniques and procedures and maintain principles of sterilization

II. Communication

- a. obtain permission before any examination and clinical procedures
- b. obtain informed consent for surgical procedures including organ ablation.
- c. appreciate right to privacy and information about the disease and its consequence

III. Managerial

- a. provide leadership during team work
- b. implement time management skills
- c. issue certificates (discharge, death, medical and injury).
- d. write notes (case notes, operation notes, referrals)
- e. keep detail and systematic records both manual and electronic
- f. use computer and IT facilities.

IV. Manipulative and practical skills

- a. adopt universal aseptic techniques in handling surgical patient
- b. start IV lines
- c. insert NG tubes
- d. introduce urethral catheter and perform supra-pubic cystostomy
- e. drain superficial abscesses
- f. perform per-rectal examination
- g. achieve emergency control of revealed hemorrhage
- h. carry out initial management of wound
- i. repair minor wounds
- j. complete primary management of fractures and arrange transfer to appropriate centers.
- k. apply splints, slings, POP casts and slabs, tractions, bandages, sterile dressing

3. Common information and activities of Surgery & Allied subjects

3.1 Basic Information

- Academic activities of Surgery and Allied subjects are distributed in Phase II, Phase III and Phase IV.
- Academic activities include lectures, small group teachings, Clinical/bedside and ambulatory care teachings, and Integrated teaching hours (both Departmental and Phase integrated teaching)
- Assessment:
 - There will be in-course (item/card/term/final assessment) and end-course (Final MBBS examination) assessment for students.
 - Formative assessment will be done through class attendance, in-course assessments, and Integrated teaching hours.
 - In-course assessment results of the individual phases will be included in the Formative assessment marks for Final MBBS examination.
 - Term examination of Phases II and III are required for eligibility to sit for 2nd and 3rd Professional Examinations.

3.2 Phase IV hours distribution for teaching-learning and assessment Surgery, Medicine and Gynae & Obs.

4th Phase : Hour Distribution												
Subject		Lecture (in hours)	Small group teaching (in hours)	Departmental integrated teaching (in hours)	Common hours for phase integrated teaching	Clinical teaching (in weeks)	Block posting (in weeks)	Formative Exam		Summati ve exam		Total (in hours)
			PBL, Practical demonstration, Instrumental demonstration, Skill lab, Demonstration on equipment, Demonstration on common clinical procedure, Tutorial & etc.					Preparatory leave	Exam time	Preparatory leave	Exam time	
Teaching- learning, both formative & summative assessment	Medicine & Allied subjects	153	199	20	126	24	4	Preparatory leave 10 days	Exam time 1.5days	Preparatory leave 10 days	Exam time 30days	372
	Surgery & Allied subjects	186	134	22		24	4					342
	Obstetrics and Gynaecology	60	58	20		08	4					138
Total		399	391	62	126	56wks	12 wks	25 days		40 days		852
Grand Total		978 hours			68 wks			65 days			852+126 (IT)=978	
Generic Topics on Medical Humanities: (i) Medical professionalism, (ii) Inter-professionalism & (iii) Patient Safety & Medical Error will be taught within 4 th phase.												
<i>Time for integrated teaching, examination preparatory leave and formative and summative assessment is common for all subjects of the phase</i>												
<i>Preventive aspects of all diseases will be given due importance in teaching learning considering public health context of the country and others parts of the world.</i>												
<i>Related behavioral, professional & ethical issues will be discussed in all clinical and other teaching learning sessions</i>												
Generic Topics on Medical Humanities for Internship Period: (i) White coat ceremony, (ii) Career planning & (iii) Continuing Medical Education (CME), Continuing Professional Development (CPD) & Infection Control Practice (ICP)											10 hrs	

3.3 Phase wise distribution of teaching - learning hours Surgery & Allied Subjects

Subject	Lecture (in hours)				Small group teaching (in hours)	Departmental integrated teaching (in hours)	Phase integrated teaching (in hours)	Clinical/Bedsid e teaching (in weeks)			Total weeks	Block posting (in weeks)	Formative examination (in days)		Summative examination (in days)	
	2 nd Phase	3 rd Phase	4 th Phase	Total	PBL, Practical demonstration , Instrumental demonstration, Skill lab, Tutorial & etc.			2 nd Phase	3 rd Phase	4 th Phase			Preparatory leave-10 days	Exam time- 15days	Preparatory leave-10 days	Exam time-30days
General surgery	35	30	60	125	134 hours	(11 topics × 2 hours) = 22 hours	(42 topics × 3 hours) = 126 hours	15	01	07	23	04 wks	Preparatory leave-10 days	Exam time- 15days	Preparatory leave-10 days	Exam time-30days
Orthopaedic surgery	-	15	45	60				02	04	04	10					
Radiology	-	-	05	05				01	-	-	01					
Radiotherapy	-	-	08	08				-	01	-	01					
Anesthesia	-	10	-	10				01	-	-	01					
Neurosurgery	-	-	05	05				-	01	-	01					
Pediatric surgery	-	05	10	15				-	-	02	02					
Urology	-	05	10	15				-	-	02	02					
Burn & Plastic surgery/ Emergency & Casualty	-	-	05	05				-	-	01	01					
Dentistry	-	-	-	-				01	-	-	01					
Ophthalmology	-	38	-	38				-	04	04	08					
Otolaryngology	-	38	-	38				-	04	04	08					
Total	324							134	22	126 hrs	20					
Grand Total	480 hours						126 hrs	63 weeks				65 days				
<i>Time for integrated teaching, examination preparatory leave and formative & summative assessment is common for all subjects of the phase</i>																
Preventive aspects of all diseases will be given due importance in teaching learning considering public health context of the country and others parts of the world.																
Related behavioral, professional & ethical issues will be discussed in all clinical and other teaching learning sessions																

3.4 Surgery & Allied Subjects: Hour distribution for Clinical/Bedside teaching in 2nd, 3rd & 4th Phases in details

Subject	Clinical/Bedside & Ambulatory care teaching (in hours)						Total hours (in three phases)	Total weeks {(2 nd phase wks + 3 rd phase wks + 4 th phase wks = Total three phases wks) × (6 days × 4 or 2 hours)}
	2 nd Phase		3 rd Phase		4 th Phase			
	Indoor clinical/ bedside teaching & Ambulatory care teaching		Indoor clinical/ bedside teaching & Ambulatory care teaching		Indoor clinical/ bedside teaching & Ambulatory care teaching			
	Morning	Evening	Morning	Evening	Morning	Evening		
	Indoor/ OPD/ Emergency & Casualty	Indoor/ Emergency & Casualty	Indoor/ OPD/ Emergency & Casualty	Indoor/ Emergency & Casualty	Indoor/ OPD/ Emergency & Casualty	Indoor/ Emergency & Casualty		
	21 weeks		15 weeks		24 weeks			
General surgery	180 h (15w)	180 h (15w)	12 h (1w)	12 h (1w)	84 h (7w)	84 h (7w)	552 h	(15+01+07) = 23 w × (6 days × 4 hrs)
Orthopaedic surgery	24 h (2w)	24 h (2w)	48 h (4w)	48 h (4w)	48 h (4w)	48 h (4w)	240 h	(2+4+4) = 10 w × (6 days × 4 hrs)
Radiology	12 h (1w)	-	-	-	-	-	12 h	(1+0+0) = 01 w × (6 days × 2 hrs)
Radiotherapy	-	-	12 h (1w)	-	-	-	12 h	(0+1+0) = 01 w × (6 days × 2 hrs)
Anesthesia	12 h (1w)	12 h (1w)	-	-	-	-	24 h	(1+0+0) = 01 w × (6 days × 4 hrs)
Neurosurgery	-	-	12 h (1w)	12 h (1w)	-	-	24 h	(0+1+0) = 01 w × (6 days × 4 hrs)
Pediatric surgery	-	-	-	-	24 h (2w)	24 h (2w)	48 h	(0+0+2) = 02 w × (6 days × 4 hrs)
Urology	-	-	-	-	24 h (2w)	24 h (2w)	48 h	(0+0+2) = 02 w × (6 days × 4 hrs)
Burn & Plastic surgery/ Emergency & Casualty	-	-	-	-	12 h (1w)	12 h (1w)	24 h	(0+0+1) = 01 w × (6 days × 4 hrs)
Dentistry	12 h (1w)	-	-	-	-	-	12 h	(1+0+0) = 01 w × (6 days × 2 hrs)
Ophthalmology	-	-	48 h (4w)	48 h (4w)	48 h (4w)	48 h (4w)	192 h	(0+4+4) = 08 w × (6 days × 4 hrs)
Otolaryngology	-	-	48 h (4w)	48 h (4w)	48 h (4w)	48 h (4w)	192 h	(0+4+4) = 08 w × (6 days × 4 hrs)
Total	240 hrs	216 hrs	180 hrs	168 hrs	288 hrs	288 hrs	1380 hrs	59 weeks

3.5 Schedule of Lecture Classes during Phase II, III & IV (in hours)

DICIPLINE	2ND PHASE	3RD PHASE	4TH PHASE	TOTAL
Gen Surgery	35	30	60	125
Orthosurgery	0	15	45	60
Radiology	0	0	5	5
Radiotherapy	0	0	8	8
Anaesthesia	0	10	0	10
Neurosurgery	0	0	5	5
Paediatric Surgery	0	5	10	15
Urology	0	5	10	15
Burn Plastic Surgery	0	0	5	5
	35	65	148	248

3.6 Schedule of Clinical Placement during Phase II, III & IV (for 62 weeks)

WEEKS	PHASE II 20 WEEKS	WEEKS	PHASE III 14 WEEKS	WEEKS	PHASE IV 12+12 + 04 WEEKS
01-15	Surgery indoor Surgery OPD	01-04	Orthopaedics & traumatology		1 st term
16-17	Orthopaedic surgery	05-08	Ophthalmology	01-04	Orthopedics
18	Radiology	09-12	ENT	05-08	Ophthalmology
19	Anaesthesia	13	Radiotherapy	09-12	ENT
20	Dentistry	14	Neurosurgery		2 nd & final term
		15	General Surgery		
Card completion exam at the end of rotation & Term exam at 41 st week		Term exam at 41 st week		01-07	Surgery
				08-09	Urology
				10-11	Paediatric Surgery
				12	Emergency & Casualty Burn & Plastic Surgery
				04 weeks	BLOCK POSTING
					Final assessment

3.7 Evaluation of Final MBBS Professional Examination:

Marks distribution for Assessment of Surgery:

Components	Marks On each component	Subtotal Marks	Total Marks
<u>Written examination</u>			
<u>Formative assessment marks</u>			
General Surgery & allied subjects -----	10		20
Ophthalmology-----	05		
ENT-----	05		
<u>Written</u>			
Paper – I: General Surgery + allied & Orthopaedics: MCQ- (SBA+MTF) + (SAQ + SEQ)	(20+70)	90	180
Paper – II: Ophthalmology: MCQ- (SBA+MTF) + (SAQ + SEQ)	(10+35)	45	
ENT: MCQ- (SBA+MTF) + (SAQ + SEQ)	(10+35)	45	
<u>Oral, Clinical & Practical</u>			
General Surgery + allied & Orthopaedics (Oral+ Clinical+ Practical)	(60+60+60)	180	300
Ophthalmology (Oral+ Clinical+ Practical)	(20+20+20)	60	
ENT (Oral+ Clinical+ Practical)	(20+20+20)	60	
Oral examination should be structured			
Grand Total Marks			500

4. Teaching-learning methods, teaching aids, and in-course evaluation.

4.1 Teaching methods

Large group teaching	Small group teaching	Self-learning	Others
Lectures	Tutorials Problem Based Learning Clinical demonstrations Case Presentation and discussion OPD / indoor patient discussion Demonstrations: X-rays Specimen Observations: Minor & major operations Postoperative care ICU care Skill lab practice	Assignments Self-study	Integrated teaching Generic topics for medical humanities Visit to radiotherapy center Attend centers where investigations for hearing impairment, vertigo, tinnitus are available

4.2 Teaching aids

Surgery and Allied Subjects	
Teaching aid used	Teaching-learning period
<p>Computer, Chalk & board, OHP, Multimedia Photographs & Videos</p> <p>Models & Specimens</p> <p>Radiological & Imaging tools: Plain & Contrast X-rays of: Upper & lower GIT, Intravenous Urography (IVU) Fractures Skull X-rays Sinogram/Fistulogram Ultrasonography: Abdomen HBS & Pancreas Genitourinary tract Doppler and duplex imaging. Thyroid scans C.T. Scan, MRI, PET Scan, Bone scan Immunohistochemistry</p> <p>Procedural instruments:</p> <ol style="list-style-type: none"> a. Sets - butterfly needle & cannula, Infusion and Transfusion sets b. Tubes -Feeding tubes, NG tube, Flatus tube, ‘T’ tube, Chest drain set, Endo-tracheal tube c. Bags- Blood bags, Stoma bags, Fluid bags, Nutrition bags, Urine bags, Drain bags d. Sharps- BP blade and handle, surgical scissors, Needle holder, Surgical suture materials, e. Theater essentials: Gloves, gown, mask, caps, surgical goggles f. Forceps- Sponge holding forceps, towel clip, Alli’s tissue forceps, artery forceps, Sinus forceps, dissecting forceps, Kocher’s artery forceps, kidney tray, gully pot, intestinal clamps g. Retractors- Deavers, abdominal, Morris abdominal retractor, Langenbeck’s retractor h. Special- Lane’s twin gastro jejunostomy clamp, proctoscope, metallic urethral dilators, nephrolithotomy forceps, Bone nibbler, 	<p>Used in lectures, Integrated teaching, tutorials and demonstrations.</p> <p>Demonstrated in theater placement and tutorials.</p> <p>During bedside demonstrations, tutorials, and in operation theater.</p> <p>During bedside demonstrations in clinical placement, tutorials and in operation theater.</p> <p>This equipment may be used in OSPE procedure stations</p>

<p>Osteotome, chisel, hammer, amputation saw, SPC set, CV line set, Spinal needle</p> <p>i. Orthopedic- Plaster of Paris bandage, crepe bandage, Splints supporting aids- Cervical collar, Circle brace, artificial limb</p> <p>j. Anesthesia- machine, Laryngoscope, airway tube, Umbo bag, pulse oximetry, Digital Thermometer, Oxygen cylinder with devices</p>	
Otolaryngology	
Teaching aid used	Teaching-learning period
<p>Thudicum nasal speculum, Killians self-retaining nasal speculum Lichwitz antrum puncture trocar and cannula, Higginson’s rubber syringe Walsham’s forceps, Luc’s forceps, Tilley’s forceps Head mirror, St Clair Thomson post nasal mirror Jobson Horne probe and ring curette Tuning fork Boyle Davis mouth gag Luc’s tongue depressor Draffins bipod metallic stand Eve’s tonsillar snare, St Clare Thomson Adenoid curette and cage Trousseau’s tracheal dilator Jackson’s metallic tracheostomy tube Direct laryngoscope Chevalier Jackson’s oesophagoscope, Negus bronchoscope etc.</p>	<p>During bedside demonstrations in clinical placement, tutorials, OPD placement and in operation theater.</p> <p>This equipment may be used in OSPE procedure stations</p>
Ophthalmology	
Teaching aid used	Teaching-learning period
<p>Trial lens, trial frame Eye speculums (Wire, Universal) DCR punch, Tonometer, Ophthalmoscope, Cat’s paw retractor, BP Blade & handle, Keratome, Squinthead Iris repositor, lens dialer, two-way cannula, chalazion clamp and scoop, corneal forceps, irrigating vectis, sac guard, sac dissector, lacrimal probe, punctum dilator etc.</p>	<p>During bedside demonstrations in clinical placement, tutorials, OPD placement and in operation theater.</p> <p>This equipment may be used in OSPE procedure stations</p>

4.3 In-course Examination and Assessment (Formative)

Examination	Time for completion	Significance	Marks included in Formative Assessment
Item Examination	Completed during clinical placement by respective departments.	Required for eligibility to sit for Card Final examination	Not included in formative assessment marks.
Card Final examination	At the last week of clinical placement in Phases II, III & IV.	Required for eligibility to sit for Term and Final Assessment examinations. Carries mark for Formative Assessment in Final MBBS exam.	1.5 marks
Term Examination (written only)	At the 41 st week of Phase II and Phase III	Required for eligibility to sit for Phase II, Phase III and Final MBBS exam. Carries mark for formative assessment in Final MBBS exam.	2 marks
Final Assessment examination (written, oral+ practical + clinical)	After completing Block posting in Phase IV	Required for eligibility to sit for Final MBBS examination. Carries mark for Formative Assessment in Final MBBS exam.	2 marks
Integrated Teaching hours	In Phases II, III & IV.	Carries mark for Formative Assessment in Final MBBS exam.	3 marks
Class Attendance	Lectures, tutorials, clinical placement, block posting, integrated teaching in Phases II, III & IV.	Carries mark for formative assessment in Final MBBS exam.	1.5 marks

5. Learning objectives in Surgery

General note:

- Teachers should go through the objectives of the individual disciplines prior to preparing the lecture and demonstration.
- Teachers should include all of the core contents during demonstration and lecture.
- Students should be encouraged to go through the additional contents.
- Lectures and demonstrations should be interactive.

Discipline	Competency
<p>5.1 Basic and Principles of Surgery</p>	<p>Students should be able to:</p> <ol style="list-style-type: none"> 1. state the history, evolution and scope of Surgery 2. assess and prepare patient for surgery 3. understand the pathophysiology of trauma 4. diagnose, treat and manage minor wounds 5. diagnose, treat and manage surgical infections (boil, abscess, carbuncle & gangrene). 6. diagnose and provide basic treatment for shock & haemorrhage. 7. recognize all external hernias & their complications & initiate primary care for complicated hernias. 8. recognize & differentiate different types of burns and initiate primary care & take measure to prevent complications. 9. recognize fluid & electrolytes imbalance states, investigate & initiate appropriate therapy. 10. recognize, & investigate different types of skin ulcerations. 11. recognize, investigate & treat superficial skin tumour & cysts 12. take appropriate measures to prevent hospital infection. 13. understand and comply with ethical principles in clinical practice
<p>5.2 Alimentary System</p>	<p>Students should be able to:</p> <ol style="list-style-type: none"> 1. investigate and diagnose the common surgical diseases of alimentary system and suggest management 2. diagnose the acute conditions of alimentary system and initiate primary care 3. identify the patient requiring specialty surgical intervention & refer to appropriate centre 4. take continued care of the operated patients

	5. recognize post-operative complications & take appropriate measures.
5.3 Genito-Urinary System	<p>Students should be able to:</p> <ol style="list-style-type: none"> 1. diagnose common congenital G.U. anomalies & advise/refer to appropriate centers 2. diagnose and manage acute GU conditions like <ul style="list-style-type: none"> • Acute retention of urine • Acute epididymo-orchitis • Torsion testis • Paraphimosis • Phimosis • Acute ureteric colic • Urosepsis 3. evaluation of scrotal swelling 4. evaluate a case of haematuria 5. order necessary investigations, and interpret the result of investigation & suggest principles of management 6. recognize a case of retention of urine, find out causes perform aseptic catheterization 7. introduce suprapubic catheter 8. describe the steps of circumcision
5.4. Hepatobiliary and Pancreas	<p>Students should be able to:</p> <ol style="list-style-type: none"> 1. diagnose, investigate cholecystitis, cholelithiasis & Choledocholithiasis 2. suspect pancreatitis; initiate primary case management & suggest management 3. investigate & interpret the results in case of obstructive jaundice & suggest appropriate treatment 4. diagnose & investigate suspected case of liver & sub-phrenic abscess & suggest appropriate treatment.
5.5 Endocrine and Breast	<p>Students will be able to:</p> <ol style="list-style-type: none"> 1. assess, investigate & diagnose thyroid swelling & thyrotoxicosis and suggest principles of management 2. diagnose & manage a case of breast abscess 3. assess, investigate & interpret the status and diagnose a case of breast lump & suggest principles of treatment

<p>5.6 Chest</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> ● assess & diagnose traumatic haemopneumo-thorax, associated injuries & introduce water seal drain in appropriate case.
<p>5.7 Cardiovascular System</p>	<p>Students will be able to:</p> <ol style="list-style-type: none"> 1. recognize chronic ischaemic conditions of limbs 2. take appropriate preventive measures & refer to specialized centre. 3. take appropriate measure to prevent DVT 4. recognize early cases of DVT
<p>5.8 Plastic and reconstructive surgery</p>	<p>Students will be able to</p> <ol style="list-style-type: none"> 1. manage Burn patient and minimize their complications 2. take any major wound care 3. suggest measures for congenital External deformity & disfiguration
<p>5.9 Neurosurgery</p>	<p>Students will be able to:</p> <ol style="list-style-type: none"> 1. provide primary care of head injury & Spinal injury cases. 2. take measures to prevent complications in neuro surgical patients. 3. involve effectively in continued care & rehabilitation of neurosurgical cases.
<p>5.10 Operative Surgery</p>	<p>Student should be able to perform:</p> <ol style="list-style-type: none"> 1. primary & delayed primary & Secondary suture closure of wounds 2. Circumcision 3. Vasectomy 4. drainage of superficial Abscess 5. Venesection 6. Hydrocele operation 7. excision of superficial cysts & tumours 8. dressing of surgical wounds <p>Student should be able to: assist in common major operations & take post-operative care</p>

<p>5.11 Orthopaedic surgery</p>	<p>Student should be able to:</p> <ul style="list-style-type: none"> • apply ATLS protocol to provide resuscitation of polytrauma patient. • manage simple and undisplaced fractures • demonstrate skill in wound excision of open fractures. • demonstrate skill in: <ul style="list-style-type: none"> ○ application of splints, slings, traction. ○ application of plaster cast and slab ○ plaster techniques and design ○ versatility & possible complications of plaster ○ the art of application of plaster & its' removal ○ manipulative reduction of common fracture and dislocation. ○ aseptic technique of joint fluid aspiration. • diagnose and outline treatment for acute osteomyelitis and septic arthritis • identify patient for referral to appropriate centre • demonstrate knowledge and understanding of the basic principle of physiotherapy and rehabilitation
<p>5.12 Anaesthesiology</p>	<p>Student should be able to:</p> <ul style="list-style-type: none"> • be aware of the safety in Anaesthesia. • be aware of the possible complications & management • demonstrate basic knowledge and perform Cardio-Pulmonary Resuscitation (CPR) • describe the scope of Anaesthesia in rural environment. <p>Practical Skills Student should be able to perform:</p> <ul style="list-style-type: none"> • pre-operative assessment • induction • intubation • I/V line • artificial ventilation • post-operative room care

5.13 Radiodiagnosis and Imaging

Student should be able to:

- demonstrate knowledge and understanding of the principles of radiology and imaging
- appreciate the importance of imaging as investigation & diagnosis of clinical conditions
- describe the hazards of radiation
- describe the protection measures for personal patient and the community.
- write proper requisition for various x-rays & imaging.

X-RAY Chest

Student should be able to:

- differentiate normal anatomical images from those due to pathological states,
- diagnose the common conditions like tuberculous consolidation, pleural effusion, pneumothorax, lung abscess, collapse, bronchogenic carcinoma.
- make radiological diagnosis of mediastinal masses

Gastro intestinal system

Student should be able to:

- diagnose intestinal obstruction, perforation etc.
- recognize indications and contra-indication for barium studies e.g., meal, swallow, follow-through & enema.
- make differential diagnosis of stones & calcification on plain X-Ray.
- diagnose gastric ulcer, duodenal ulcer, growth in the stomach, oesophageal cancer on barium studies.
- interpret the finding of cholangiogram

Skeletal system

Student should be able to:

- diagnose common fractures, dislocations & bone tumours
- bone infections with the help of X-rays

Excretory System

Should be able to:

- identify renal calculi in plain X-ray
- understand USG & IVU findings in renal stone and other renal diseases

<p>5.14 Radiotherapy</p>	<p>Radiation oncology, basic principles and practices: Students will be able to:</p> <ul style="list-style-type: none"> • appreciate the role of radiotherapy in the management of cancer • demonstrate knowledge of radiation • identify different sources of radiation • refer the patients to radiotherapy department • recognize common radiation hazards after primary Care <p>Medical oncology, basic principles and practices: Students will be able to:</p> <ul style="list-style-type: none"> • recognize common cytotoxic drugs. • refer appropriate cases for chemotherapy. • recognize common complication & offer primary care. <p>Palliative support, terminal care and prevention of common cancers: Students will be able to:</p> <ul style="list-style-type: none"> • appreciate the role of doctors in prevention and early diagnosis of cancer & referral of cancer patients. • take leadership in the community to offer rehabilitative support • offer follow up & terminal care of cancer patients. • recognize clinical condition as which could be diagnosed by radio-isotope & interpret the results. • recognize diseases requiring isotope therapy.
<p>5.15 Paediatric surgery</p>	<p>Students will be able to:</p> <ul style="list-style-type: none"> • identity common paediatric surgical problems including emergencies. • initiate primary care • refer the cases to appropriate hospital

6. Generic Topics on Medical Humanities in Phase IV

General Instructions:

- Generic topics on Medical Humanities will be taught within 4th Phase under supervision of Phase-IV coordination committee in collaboration with medical education unit (MEU).
- The sessions will be under the guidance of Principal & Vice-principal, coordinated by concerned departments
- Sessions will be delivered by concerned experts of the topics.
- Each session will be one and half hour.
- Attending these sessions will be mandatory and will be necessary to sit for Final MBBS examination.

Topics for Phase IV:

- Medical professionalism
- Inter-professionalism
- Patient Safety & Medical Error

7. Integrated Teaching in Phase IV

7.1 General Instructions:

- Integrated teaching will be arranged in two ways:
 1. Phase integrated teaching: 3 hours per session
 2. Departmental integrated teaching: 2 hours per session
- **Phase Integrated teaching hours:** 42 topics x 3 hours= 126 hours.
- **Departmental Integrated teaching hours:** 11 x 2 hours = 22 hours.
- **Phase Integrated Teaching:**
 - Phase Integrated teaching hours is common for all discipline of Phase IV
 - At least one topic of Integrated teaching will be discussed every week on a fixed day (eg. Tuesday)
 - Each Integrated teaching session should have:
 - Lecture demonstration
 - Students' Feedback
 - Immediate task evaluation by MCQs/writing summary/take home messages in the last 30 mins.
 - Attendance and submitted tasks of the students will carry marks in 'Formative Assessment' of Final MBBS examination.
- Schedule of integrated teaching session will be set at the Phase IV committee meeting in collaboration with medical education unit (MEU).
- All the departments of Phase IV (Medicine & Allied Topics, Surgery & Allied Topics and Gynecology & Obstetrics) must be present and take part in the integrated teaching while the faculty representatives from concerned clinical and other departments will also participate actively.
- Teachers will be the speakers in each session. Participation of the students of phase IV should be ensured.
- Students need to get some take home message from every session.
- To ensure presence of the students marks will be allocated in the formative assessment of the Final MBBS Professional examination for the integrated teaching and submission of write up on what was learned by the student as summary.
- Other academic activities should continue as usual on the day of Integrated Teaching sessions.

7.2 Topics of Phase Integrated Teaching (Phase IV)

- | | | |
|-------------------------------|---|-----------------------------------|
| 1. Hypertension | 15. Anxiety | 29. Shock |
| 2. Tuberculosis | 16. Depression | 30. Fluid & electrolytes |
| 3. Thyroid Disorder | 17. Psychosis | 31. Burn |
| 4. Acute Kidney Injury | 18. Drug reaction | 32. Per rectal bleeding |
| 5. Fever | 19. Generalised pruritus | 33. Vertigo |
| 6. Oedema | 20. Purpura | 34. Congenital anomalies |
| 7. Chest pain | 21. STI | 35. Wound infection |
| 8. Acute respiratory distress | 22. Low Back Pain | 36. Urinary tract infection (UTI) |
| 9. DM | 23. Joint Pain | 37. Abnormal uterine bleeding |
| 10. Jaundice | 24. Osteoporosis | 38. Convulsion |
| 11. Diarrhea and vomiting | 25. Acute abdomen | 39. Abdominal lump |
| 12. Nutrition | 26. Thrombophlebitis/
Phlebothrombosis | 40. Anaemia |
| 13. Pediatric Emergency | 27. Sepsis | 41. Unconsciousness |
| 14. Headache | 28. Infection prevention &
control | 42. Delirium & Dementia |

7.3 Topics of Departmental Integrated Teaching (Phase IV)

- | | |
|-------------------------------------|--------------------------------|
| 1. Malignant Bone Tumour | 7. Stridor in Children |
| 2. Inflammatory Bowel Disease | 8. Bladder Outflow Obstruction |
| 3. Gastric Outlet Obstruction | 9. Metabolic Bone Disease |
| 4. Sub-acute Intestinal obstruction | 10. Spinal Injury. |
| 5. Neck Swelling | 11. Proptosis |
| 6. Epistaxis | |

8. Phase-wise Academic Activities of Surgery & Allied subjects

8.1.0 Phase II Academic Activities of Surgery and Allied subjects

General notes:

- Total duration: 1 year
- Modalities of teaching learning;
 - Lectures (35 hours)
 - Clinical/bedside teaching (20 weeks)
 - Small group teaching
- Assessment at Phase II:
 - Item Examinations
 - Card final examination 1
 - Term assessment examination 1
- Card final examination and Term assessment examination will carry marks in the Formative assessment in Final MBBS examination.

8.1.1 Lectures:

- Total lecture hours will be 35 hours.
- Duration will be one hour each.
- Should be interactive and participatory.
- Must include the day objective of learning at the beginning and feedback at the end of the session.

Core Course Contents in Phase II in Surgery (Covered in Lectures)

Discipline	Core Contents	Teaching Hours
A. Basic and Principles of Surgery	<ol style="list-style-type: none">1. History, evolution and scope of surgery2. Approach to a surgical patient3. Surgical diagnostic process and techniques4. Surgical Infection (Boil, Furuncle, Abscess, Carbuncle, cellulites)5. Septicemia (causes, complications and treatment)6. Sinus, Fistula and cysts7. Wounds (classification and management)8. Ulcers, pressure sores9. Groin hernias10. Haemorrhage11. Shock	20 hours
B. Systemic Surgery 1. Alimentary System	Complications of Peptic ulcer (Perforation, Pyloric stenosis) Upper G.I. Tract bleeding Appendicitis Intestinal obstruction;	5 hours
2. Hepatobiliary & Pancreas	Cholelithiasis (causes and complications) Cholecystitis (acute & chronic) Pancreatitis (acute pancreatitis)	5 hours

8.1.2 Clinical/bedside teaching and ambulatory care teaching:

- Total duration of placement will be 20 weeks.
- Duration of classes will be 2 hours each.
- Clinical classes will be demonstrated in accordance to the Card items.
- Demonstration of history taking and clinical examination and interpretation should be at the bedside.
- Students should be placed in OPD to see the common surgical cases.
- Tutorials demonstrations can be done in the wardside classrooms.
- Item exams will be taken after demonstrating every two/three items.
- Evaluation will be done by completing Item exams of Card One and Card final.
- Item card (Card One) will be duly signed by the Registrar and Head of the department.

8.1.3 ITEM CARD IN PHASE II

SURGERY- Card-One

Cl. Reg. No.	
Roll No.	
Group	
Batch	

Card No.	1 (One) :12 wk
Year	3rd year
Total marks	100
Pass marks	60%

Name of the student					
Period of placement	From :		To :		Unit :
Professor / Asso. Professor in charge					
Academic Co-ordinator					

No.	CLINICAL	Satisfactory / Unsatisfactory	Marks	Signature
1.	Rapport development with patient and hospital supporting stuffs			
2.	History taking and writing (at least 10 different cases)			
3.	General examination and general principle of examination			
4.	Examination of swelling, ulcer, sinus, fistula, etc. (at least 10 different cases)			
5.	Examination of a) Inguino-scrotal swelling b) Vascular system			
6.	Examination of chronic abdominal conditions. (5 cases) a) G.I. tract condition <ul style="list-style-type: none"> • Lumps in different quadrants. • Gastric outlet obstruction b) Hepato biliary conditions c) Pancreatic conditions			
7.	Examination of acute abdominal conditions <ul style="list-style-type: none"> • Acute Appendicitis • Perforation of the hollow viscus • Acute Pancreatitis • Intestinal obstruction 			
8.	Short cases in out patient clinics <ul style="list-style-type: none"> • Lipoma, Neurofibroma • Cyst, Ganglion, Keloid • Haemangioma, Umbilical • Inguinal Hernias ,Hydrocele 			

No.	PRACTICAL	Satisfactory / Unsatisfactory	Marks	Signature
1.	5-infusions are to be observed & recorded			
2.	10 I.M. injections are to be given & recorded			
3.	Observe Ryles tube introduction in 5 cases			
4.	10 X-rays are to be seen & findings recorded			
5.	6 operations are to attain & observe in OT & record			
6.	Specimen-Gallstone, G. Bladder, Appendix, Urinary stones, Breast lump			
7.	Instruments			
	TUTORIAL			
1.	Shock			
2.	Fluid electrolyte balance			
3.	Sterilization, Tetanus, gas gangrene			
4.	Gangrene, Boil, abscess, carbuncle, ulcers			
5.	Sepsis and asepsis in surgery			
6.	Preoperative & postoperative care			

OFFICIAL RECORD (To be completed by department of Surgery)			
Date of issue of Card			
Date of return of the Card			
Date of entry of the Result			
Date of issue of next Card			
Card No.			
Excellent/Good/ Satisfactory /Unsatisfactory/ to be repeat			
Remarks and Counter signature of Unit Chief		Registrar Department of Surgery	

8.1.4 Phase II Evaluation in Surgery and Allied subjects.

- Evaluation will be done by:
 - a. Item examinations
 - b. Card Final examination (Card Final 1)
 - c. Term Assessment examination (Term 1)
- Item exam to be taken after each 2/ 3 clinical demonstration classes.
- Card exam clearance is necessary to appear in Term assessment exam.
- Term Assessment is mandatory for eligibility to sit for Final Assessment examination and Phase II Final examination (2nd Professional examination)
- Card Final and Term Assessment examinations will carry marks in Formative assessment of Final MBBS Professional exam.

8.1.4.1 Card Final exam:

Eligibility:

1. Attendance in clinical class 75% or more
2. Completed item exams in scheduled card (Card One)

Card Exam	Covering discipline	Card final exam date	Methods of exam	Allocated time	Marks: 100
Card final 1 (Phase II)	Surgery	2 nd /3 rd last day of clinical placement	Short case:2	5x2=10 mins	15x2=30
			Long case: 1	30 mins (20+10)	30
			Viva: Single table	10 min	40

8.1.4.2 Term Assessment examination (Term 1):

General Notes:

1. Will be taken at 41st week of the Phase II.
2. It will be a written exam only.

Eligibility

1. Attendance 75% or more in Lecture, clinical, tutorial & Integrated Teaching class
2. Cleared Card Final Examination (Card 1).

Term Exam	Academic Phase	Exam Time	Exam Tools	Exam Marks	Syllabus
Term Exam 1	Phase II	41 st week	Written	50	Items covered in lecture on General Principles of Surgery & clinical classes

EXAM TOOLS

Term exam	Duration	Total marks	Pass marks	Groups in Question paper	Syllabus
Term Exam 1	2 hours	50	30	2 groups	Group A Covers lectures taken on surgical principles Group B Covers items tutorials, demonstrations and learning from clinical placement

Term 1 Assessment Exam Question Type & Marks distribution:

1. It will be a 1 paper exam with 2 groups: group A and group B.
2. There will be one mandatory SEQ which carries 10 marks. Rest will be SAQs which carry 5 marks, in which, marks of the stem can be provided as “1+2+2” or “1.5+1.5+2” etc.
3. Total marks will be 50.

Group A: 1 SEQ 10 marks, 3 SAQs out of 4 = 15 marks, total 25 marks.

Group B: 5 SAQs out of 6 = 25 marks.

4. Result:

- a. Marks $<60\%$ = appeared but unsatisfactory.

Will not be eligible to sit for Final MBBS exam (if not reappeared in supplementary Term exam).

But get eligibility to appear Phase II Final Professional exam.

- b. Marks $\geq 60\%$ = passed,

Eligible to sit for Phase II Final exam

Eligible to sit for Final MBBS Exam

8.2.0 Phase III Academic activities of Surgery and Allied subjects

General notes:

- Total duration: 1 year
- Modalities of teaching learning;
 - Lectures (65 hours)
 - Surgery: 30 hours
 - Orthopaedics: 15 hours
 - Anaesthesia: 10 hours
 - Paediatric surgery: 5 hours
 - Urology: 5 hours
 - Clinical/bedside teaching (15 weeks)
 - Small group teaching
- Assessment at Phase III:
 - Item Examinations:
 - Orthopaedic card (Card Two-A)
 - Neurosurgery card
 - Card Final examination 2
 - Term Assessment examination 2
- Card Final examination and Term assessment examination will carry marks in the Formative assessment in Final MBBS examination.

8.2.1 Lectures:

- Total lecture hours will be 65 hours.
- Duration will be one hour each.
- Should be interactive and participatory.
- Must include the day objective of learning at the beginning and feedback at the end of the session.

Core Course Contents in Phase III in Surgery (Covered in Lectures)

Discipline	Core Contents	Teaching Hours
A. Basic and Principles of Surgery	<ol style="list-style-type: none"> 1. Metabolic response to injury 2. Principles of Management of Trauma 3. Management of a severely injured patient 4. Fluid and electrolytes balance 5. Enteral and Parenteral nutrition 	10 hours
B. Systemic Surgery		
1. Alimentary System	Abdominal trauma (Diagnostic and Management principles) Ruptured Spleen Ruptured liver Ruptured intestine	5 hours
2. Genito-Urinary System	<ol style="list-style-type: none"> 1. Urinary symptoms & definitions 2. Urological investigations and their interpretations, 2. Developmental genito-urinary anomalies 4. Scrotal swelling <ul style="list-style-type: none"> • Hydrocele • Scrotal cellulitis 5. Acute scrotal conditions <ul style="list-style-type: none"> • Epididymo- orchitis • Torsion testis 	5 hours
3. Cardiovascular System	Vaso occlusive disorders <ul style="list-style-type: none"> • Atherosclerosis • Buerger's disease Varicose vein Thrombophlebitis Deep vein thrombosis	5 hours

	<p><u>ADDITIONAL</u> Pulmonary embolism Angioplasty, CABG and cardiac surgery</p>	
4. Operative Surgery	Principles of Asepsis & Antisepsis Pre-operative assessment & preparation Venous access Circumcision Operation for hydrocele Repair of D.U perforation Wound care	5 hours
	Tutorials <ul style="list-style-type: none"> • Universal precautions (Scrubbing, gloving & gowning) • O.T. environment & behavior • Preoperative skin preparation and draping • Suturing materials, Stitches 	5 hours
5. Orthopedic Surgery	a) <u>General Orthopedics</u> <ul style="list-style-type: none"> • Introduction to orthopaedics • Hard tissue trauma: - <ul style="list-style-type: none"> - Fracture classification - Principal of management of open and closed fracture - Fracture healing –nonunion, malunion, delayed union. • Infection of bone (Acute and chronic osteomyelitis) 	5 hours
	b) <u>Regional orthopedics</u> Upper limb Colles’ fracture Supracondylar fracture Clavicle fracture Radius Ulna fracture (Shaft) Humerus fracture (Shaft) Lower limb Fracture of Shaft of femur Fracture of Tibia & Fibula	10 hours
6. Anaesthesiology	a) Anesthesia as a subject: its scope, outline- present & future b) Anesthesia Pharmacology: Drugs: induction, maintenance, muscle relaxants c) Intra-operative management d) Post-operative management and complication e) General anaesthesia (G.A)	10 hours

	<p>f) Local/Regional anesthesia g) Management of Pain (chronic) h) Intensive Care Unit (ICU) i) Basic life support. j) Cardio-Pulmonary Resuscitation (CPR)</p> <p><u>Exposure to practical procedures (Tutorial):</u></p> <ul style="list-style-type: none"> • Pre-operative assessment • Induction • Endo tracheal Intubation • CV line • Artificial ventilation • Face mask ventilation. • Recovery room experience 	
7. Paediatric Surgery	<ul style="list-style-type: none"> • Examination of a child and neonate (Special considerations) • Infantile Inguinoscrotal swellings • Acute abdomen in infants & children • Congenital hypertrophic pyloric stenosis 	5 hours

8.2.2 Clinical/bedside teaching and ambulatory care teaching:

- Total duration of placement will be 15 weeks.
- Duration of classes will be 2 hours each.
- Clinical classes will be demonstrated in accordance to the card items
- Demonstration of history taking and clinical examination and interpretation should be at the bedside.
- Students should be placed in OPD to see the common surgical cases.
- Tutorials demonstrations can be done in the wardside classrooms.
- Item exams will be taken after demonstrating every two/three items.
- Evaluation will be done by completing Item exams (Orthopaedics & Neurosurgery) and Card Final examination.
- Item cards (Orthopaedics & Neurosurgery) will be duly signed by the Registrar and Head of the respective departments and sent for acknowledgement to the Registrar of the department of Surgery.

**8.2.3 ITEM CARDS IN PHASE III
(ORTHOPAEDICS & NEUROSURGERY)**

CARD TWO-A: ORTHOPAEDIC & TRAUMATOLOGY

Cl. Reg. No.	
Roll N0.	
Group	
Batch	

Card no.	2 (Two)-A
Year	4 th year
Total marks	100
Pass marks	60%

ORTHOPAEDIC & TRAUMATOLOGY

Name of the student						
Period of placement	From:		To:		Unit:	
Professor/Associate Professor						
Academic coordinator						

	CLINICAL	Satisfactory/ Unsatisfactory	Marks	Signature
1.	General principle of Musculoskeletal history taking			
2.	General principle of Musculoskeletal examination			
3.	Clinical examination of Hand & Wrist, Elbow & Shoulder.			
4.	Clinical examination Hip, Knee, Foot & Ankle.			
5.	Examination of Bone disorders – Chronic pyogenic osteomyelitis, Bone tumours.			
6.	Examination of fractures & dislocations			
7.	Examination and assessment of polytrauma patient.			
8.	Examination of bones & joints deformity, club foot.			

No.	PRACTICAL	Satisfactory /Unsatisfactory	Marks	Signature
1	ORTHOPAEDICS a. Splint, Bandage, technique of immobilization-Plaster slab & cast. b. Observation of orthopaedics OT			
2	CASUALTY a. At least five emergency cases to be received at Emergency Department & recorded. b. At least five minor wounds to be repaired. c. At least three operations are to be assisted.			
3	X-ray of fractures, dislocations, tumours and osteomyelitis Specimens of Bone Tumours and Osteomyelitis Common Orthopaedic Instruments			
	TUTORIAL			
1	Fracture, Complication			
2	Dislocation, Subluxation			
3	Open fracture Management			

CARD COMPLETION EXAMINATION

Attendance		Out of	
Total marks obtained in items		Percentage	
Marks obtained in card completion		Percentage	
Remarks			
Excellent/Good/ Satisfactory /Unsatisfactory/ to be repeat			
Professor of Orthopaedics/Unit Chief		Registrar (Ortho Unit-)	

Neurosurgery (1wk)

No.	CLINICAL	Satisfactory/ Unsatisfactory	Marks	Signature
1.	Examination of Neurosurgical patients			
2.	Examination of Hydrocephalus, Meningocele, Brain tumours, Extradural & Sub dural haemorrhage, Brain Abscess			
5.	Examination and assessment of Head injury patients.			
6.	PLID- Back pain			

CARD COMPLETION EXAMINATION

Attendance		out of	
Total marks obtained in items		Percentage	
Marks obtained in card Completion		Percentage	
Remarks			
Unit chief of Neuro-Surgery		Registrar Neuro Surgical Unit	

OFFICIAL RECORD

(To be completed by department of Surgery)

Date of issue of Card			
Date of return of the Card			
Date of entry of the Result			
Date of issue of next Card			
Card No.			
Remarks and Counter signature of Academic Co-ordinator		Dealing Assistant Department of Surgery	

8.2.4 Phase III Evaluation in Surgery and Allied subjects.

- Evaluation will be done by:
 - a. Item examinations
 - b. Card Final examination (Card Final 2)
 - c. Term Assessment examination (Term 2)
- Item exam to be taken after each 2/ 3 clinical demonstration classes.
- Card exam clearance is necessary to appear in Term Assessment exam.
- Term Assessment is mandatory for eligibility to sit for Final Assessment examination and Phase III Final examination (3rd Professional examination)
- Card Final and Term Assessment examinations will carry marks in Formative assessment of Final MBBS Professional exam.

8.2.4.1 Card Final exam:

Eligibility:

1. Attendance in clinical class 75% or more
2. Completed item exams in scheduled card (Orthopaedics & Neurosurgery)

Card Exam	Card final exam date	Methods of exam	Covering discipline	Allocated time	Marks: 50
Card Final 2 (Phase III)	2 nd /3 rd last day of clinical placement	Short case: 2	Surgery :1 Orthopaedics: 1	5x2=10 mins	10x2=20
		Viva: Single table	Covering: 1. Appliance, X-ray/CT film: Ortho & NeuroS 2. General principle of- Surgery+ Ortho/ NeuroS	05 mins 05 mins	30

8.2.4.2 Term Assessment examination (Term 2):

General Notes:

1. Will be taken at 41st week of the Phase III.
2. It will be written exam only.

Eligibility

1. Attendance 75% or more in Lecture, clinical, tutorial & integrated teaching class
2. Cleared Card Final Examination (Card 2).

Term Exam	Academic Phase	Exam Time	Exam Tools	Exam Marks	Syllabus
Term Exam 2	Phase III	41 st week	Written	100	Items covered in Lecture on general principle of surgery & clinical classes

Question Type & Marks distribution:

Term exam	Duration	Total marks	Pass marks	Groups in Question paper	Syllabus
Term Exam 2	2 hours	100	60	4 groups	<p>Group A: Covers lectures taken on general, systemic & operative surgery</p> <p>Group B: Covers lectures & items from clinical placement of Orthopaedics, Neurosurgery, anesthesia/ Radiotherapy, Paediatric Surgery/urology</p> <p>Group C: Covering Lectures & demonstrations from clinical placement of Ophthalmology</p> <p>Group D: Covering Lectures & demonstrations from clinical placement of Otolaryngology.</p>

NB:

1. It will be a 1 paper exam with 4 groups: Group A-D. Total marks will be 100.

2. There will be Two mandatory SEQs, maximum 1 in one group. Rest will be SAQs. One SEQ from Surgery and another SEQ from Ophthalmology/Otolaryngology.
3. Each group carries 25 marks.
The mark distribution of the group containing SEQ will be: 1 SEQ: 10 marks, 3 SAQs: $5 \times 3 = 15$ marks. Three SAQs to be answered out of 4.

The groups having SAQs only, carries equal marks in each question. Students have to answer 5 SAQs out of 6. Marks distribution: $5 \times 5 = 25$ marks.

4. Each SAQ will carry 5 marks, in which, marks of the stem can be provided as “1+2+2” or “1.5+1.5+2” etc.
5. Result:
 - a. Marks $<60\%$ = appeared but unsatisfactory.
Will not be eligible to sit for Final MBBS examination (if not reappeared in supplementary Term exam).
But get eligibility to appear in Phase III Final Professional exam.
 - b. Marks $\geq 60\%$ = passed,
Eligible to sit for Phase III Final exam
Eligible to sit for Final MBBS Exam

8.3.0 Phase IV Academic Activities of Surgery and Allied subjects

General notes:

- Total duration: 1.5 year
- Modalities of teaching learning;
 - Lectures (148 hours):
 - General Surgery: 60 hours
 - Orthopaedics: 45 hours
 - Radiology: 5 hours
 - Radiotherapy: 8 hours
 - Neurosurgery: 5 hours
 - Paediatric Surgery: 10 hours
 - Urology: 10 hours
 - Burn and Plastic surgery: 10 hours
 - Clinical/bedside teaching (24 weeks)
 - Small group teaching
 - Integrated Teaching:
 - Departmental Integrated teaching includes 11 topics, $11 \times 2 = 22$ hours.
 - Phase Integrated teaching includes 42 topics, $42 \times 3 = 126$ hours.
 - Generic topics on Medical Humanities: 5 hours (3 topics)
- Assessment at Phase IV:
 - Item Examinations
 - Card Two-B: Orthopaedics
 - Card Three: Covering Surgery, Urology & Paediatric Surgery
 - Card Final examination 3
 - Final Assessment examination
- Card Final examination and Final Assessment examination will carry marks in the Formative assessment in Final MBBS examination.
- Final Assessment examination will be held after completion of 4 weeks Block placement.

8.3.1 Lectures:

- Total lecture hours will be 148 hours.
- Duration will be one hour each.
- Should be interactive and participatory.
- Must include the day objective of learning at the beginning and feedback at the end of the session.
- Attendance $\geq 75\%$ is necessary for eligibility to sit for Phase IV Final (Final Professional Exam)

Core Course Contents in Phase IV in Surgery (Covered in lectures)

Discipline	Core Contents	Teaching hours
A. Basic and Principles of Surgery	Pre-operative assessment and preparation Tumours of skin Lymphadenopathy (causes, investigations, diagnosis, biopsy) Surgical ethics <u>ADDITIONAL</u> Organ transplantation, Robotics in surgery	10 hours
B. Systemic Surgery 1. Alimentary System	Tongue, Lip & other oral lesions (ulcer, cancer) Oesophagus Carcinoma oesophagus and stricture Carcinoma stomach Neoplasm of colon and rectum Intestinal tuberculosis Anal canal Haemorrhoids, Fistula, Sinus & Fissure, Carcinoma anus Colostomy & ileostomy (indications and management) Abdominal incisions (Tutorial) <u>ADDITIONAL</u> Intra-abdominal abscess Diseases of salivary glands Hiatus hernia	5 hours
2. Genito-Urinary System	1. Urolithiasis (Causes, Diagnosis, Principles and modalities of treatment) 2. Retention of urine (acute and chronic) 3. Hydronephrosis	10 hours

	<p>4. UTI</p> <p>5. Urinary tract injury.</p> <ul style="list-style-type: none"> • Renal injury • Urethral injury <p>6. Renal Neoplasm</p> <ul style="list-style-type: none"> ▪ RCC ▪ Wilm's Tumour <p>7. Testicular Tumour</p> <p>8. BPH</p> <p>9. Stricture urethra</p> <p><u>ADDITIONAL</u></p> <ul style="list-style-type: none"> • Male infertility • Minimal Invasive Surgery in Urology 	
3. Hepatobiliary & Pancreas	<p>Obstructive jaundice</p> <p>Pancreatic tumours</p> <p>Liver abscess</p> <p><u>ADDITIONAL</u></p> <p>Hepatic neoplasm</p> <p>Cysts of liver</p> <p>Neoplasm of Gall Bladder</p>	<p>5 hours</p> <p>4 hours</p>
4. Endocrine & Breast	<ul style="list-style-type: none"> • Thyroid <ul style="list-style-type: none"> ▪ Goitre and Neoplasms of thyroid • Breast <ul style="list-style-type: none"> ▪ Breast pain, Mastitis and Breast Abscess ▪ Fibro-adenosis and Fibroadenoma ▪ Carcinoma of breast <p><u>ADDITIONAL</u></p> <p>Diseases of Adrenal gland</p> <p>Diseases of Parathyroid gland</p>	<p>4 hours</p> <p>4 hours</p> <p>2 hours</p>
5. Chest	<p>Chest injury (Haemothorax, Pneumothorax)</p> <p>Chest tumours, Chest drain</p> <p><u>ADDITIONAL</u></p> <p>Dysphagia</p> <p>Empyaema thoracis</p>	<p>3 hours</p>

<p>6. Plastic & Reconstructive</p>	<p>Burn (Causes, complications and management) Skin grafting Skin tumours Special area burn, Inhalation and electric burn</p>	<p>5 hours</p>
<p>7. Neurosurgery</p>	<p>Head injury ICSOL PLID Paraplegia/hemiplegia</p> <p><u>ADDITIONAL</u> Hydrocephalus Tumours of brain Tumours of spinal cord</p>	<p>5 hours</p>
<p>8. Operative Surgery</p>	<p>Common Abdominal incision Operation for inguinal hernia Drainage of abscesses Catheterisation, Supra-pubic cystostomy Anastomosis Appendectomy Cholecystectomy Gastrojejunostomy Basic principles of Laparoscopy</p> <p><u>Additional</u> Thyroidectomy, Nephrectomy, Mastectomy, Prostatectomy</p>	<p>10 hours</p>
<p>9. Orthopedic Surgery</p>	<p>Regional Orthopaedics</p> <ul style="list-style-type: none"> • Upper Limb Hand injuries and Hand Infection • Lower Limb Fracture of Neck of femur Fracture of Pelvis Ankle and foot injuries Amputations Additional Dislocation – Hip, Haemarthrosis • Soft tissue trauma (muscle and tendon injuries, compartmental syndrome) • Infection of joint including osteoarticular tuberculosis • Mass Casualty- ATLS, Disaster management. • Bone tuberculosis 	<p>45 hours</p>

	<p><u>Additional</u> a. Dislocation of shoulder and elbow</p> <p>b. Paediatric orthopaedics: Congenital anomalies- Congenital Talipes Equinovarus (CTEV), DDH, Bow legs, Polydactyly, Claw</p> <p>c. Bone tumors: Classification of bone tumor Common benign and malignant bone tumor – osteochondroma, Giant cell tumor, Osteosarcoma, Metastatic bone tumor.</p> <p>d. Vertebral fracture – (primary management, transportation. Principles of definitive management)</p> <p>Additional</p> <p>e. Tendinitis, Tenosynovitis, bursitis</p>	
<p>10. Radio Diagnosis & Imaging</p>	<ul style="list-style-type: none"> • Introduction of radiology & imaging including CT & MRI • Hazards of radiation and protection for personals, and patients. • Principles of ultra-sonography & its clinical application • Plain & contrast X-Rays • Interventional imaging • USG <p>X-RAY Chest</p> <ul style="list-style-type: none"> • Normal and pathological image • Pneumonic and Tuberculous consolidation • Pleural effusion • Pneumothorax <p><u>Additional</u></p> <ul style="list-style-type: none"> • Lung abscess • Mediastinal mass <p>Gastro intestinal system</p> <ul style="list-style-type: none"> • Plain X-ray findings of Acute abdomen. • Indications & contraindications for barium studies. <ul style="list-style-type: none"> ○ Hepatobiliary system ○ Cholangiogram & ERCP • USG of HBS and Pancreas <p><u>Additional:</u> MRCP</p>	<p>6 hours</p> <p>2 hours</p> <p>2 hours</p>

	<p>Skeletal system</p> <ul style="list-style-type: none"> • Diagnosis of common fractures of upper and lower limb • skull fractures • Spinal fractures and caries spine • Acute osteomyelitis • common bone tumours • diseases of joints • dislocations <p>Excretory System</p> <ul style="list-style-type: none"> • X-ray KUB & IVU • USG of Kidney, Ureter, Bladder and prostate 	<p>3 hours</p> <p>1 hour</p>
11. Radiotherapy	<p style="text-align: center;"><i>Introduction to Radiotherapy</i></p> <p>Radiation oncology, basic principles and practices:</p> <ul style="list-style-type: none"> • Aims of radiation oncology • Sources of radiation, Isotopes and their mechanism of action • Curative/Palliative radiotherapy • Radiosensitivity, radioresistance, radiocurability and normal tissue tolerance. • Common radiation reactions and management. <p>Medical oncology, basic principles and practice: Cell cycle and Mechanism of action of cytotoxic drugs Clinical aspect of cancer chemotherapy Complications of chemotherapy (Infection and bleeding tendency) Chemotherapy of common cancers, Common Chemotherapeutic regimes</p> <p>Prevention of common cancer: Primary prevention, Secondary prevention Early diagnosis Referral to appropriate centre</p> <p>Palliative support and terminal care: Follow-up of cancer patients and terminal care</p> <p>Nuclear Medicine, basic principles and practice: Radio-isotope in diagnosis Radio-isotope in therapy</p>	<p>5 hours</p> <p>1 hour</p> <p>1 hour</p> <p>1 hour</p>
12. Paediatric Surgery	<p>Neonatal/Infantile intestinal obstruction Intussusception Anorectal malformations. Maldescended Testis Torsion Testis Haemangioma and other Cutaneous lesions</p>	<p>10 hours</p>

	<p>Child-hood tumours. Rectal bleeding and prolapsed rectum</p> <p><u>Tutorials</u> Cystic hygroma, Branchial fistula Phimosis/balanitis Paraphimosis Phimosis/balanitis Paraphimosis</p>	
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8.3.2 Clinical/bedside teaching and Ambulatory care teaching:

- Total duration of placement will be 24 weeks.
- Duration of classes will be 2 hours each.
- Clinical classes will be demonstrated in accordance to the card items.
- Demonstration of history taking and clinical examination and interpretation should be at the bedside.
- Students should be placed in OPD to see the common surgical cases.
- Tutorials demonstrations can be done in the wardside classrooms.
- Item exams will be taken after demonstrating every two/three items.
- Evaluation will be done by completing Item exams [Card three (Surgery) & Card two-B (Orthopaedics)] and Card Final examination.
- Item cards [Card three (Surgery) & Card two-B (Orthopaedics)] will be duly signed by the Registrar and Head of the respective departments and sent for acknowledgement to the Registrar of the department of Surgery.

8.3.3 ITEM CARDS IN PHASE IV (ORTHOPAEDICS AND SURGERY)

CARD TWO – B: ORTHOPAEDIC & TRAUMATOLOGY

Cl. Reg. No.	
Roll No.	
Group	
Batch	

Card No.	2 (Two)-B
Year	5 th year
Total Marks	100
Pass marks	60%

Name of the Student						
Period of placement	From:		To:		Unit:	
Professor/Associate Professor						
Academic coordinator						

N	CLINICAL	Satisfactory/ Unsatisfactory	Marks	Signature
1	Review on General principle of Musculoskeletal history taking&examination			
2	Clinical examination of upper & lower extremities.			
3	Principle of examination of muscles, tendons & joints instabilities.			
4	Examination of muscles, tendons & joints instabilities of Knee& Shoulder.			
	Examination of Spine& spinal cord injury.			
6	Examination of peripheral nerves.			
7	Long cases presentation & discussion.			
8	Short cases presentation & discussion.			

No.	PRACTICAL	Satisfactory/ Unsatisfactory	Marks	Signature
1	ORTHOPAEDICS a. Use of functional braces, Walking aids, Caliper. b. Observation of orthopaedics OT & Operations (At least five)			
2	CASUALTY a. At least five emergency cases to be received at Emergency Department & recorded. b. At least five minor wounds to be repaired. c. At least three operations are to be assisted.			
3	X-ray of fractures, dislocations, tumours and osteomyelitis Specimens of Bone Tumours and Osteomyelitis & others Common Orthopaedic Instruments			
	TUTORIAL			
1	Bone tumours & Osteomyelitis			
2	Children fractures & Compartment Syndrom			
3	Mass casualty & ATLS			

CARD COMPLETION EXAMINATION

Attendance		Out of	
Total marks obtained in items		Percentage	
Marks obtained in card completion		Percentage	
Remarks			
Professor of Orthopaedics/Unit Chief		Registrar Ortho unit---	

SURGERY-CARD-Three

Cl. Reg. No.	
Roll No.	
Group	
Batch	

Card No.	3 (Three) 10 wk
Year	5th year
Total marks	100
Pass marks	60%

Name of the student						
Period of placement	From :		To :		Unit :	
Professor / Associate Professor						
Academic Co-ordinator						

No.	CLINICAL	Satisfactory / Unsatisfactory	Marks	Signature
1.	Examination of neck swelling <ul style="list-style-type: none"> • Lymph Nodes • Thyroid • Thyro glossal Cyst 			
2.	Examination of extremities for peripheral vascular conditions			
3.	Examination of chronic abdominal conditions. (5 cases) <ul style="list-style-type: none"> a) G.I. tract condition <ul style="list-style-type: none"> • Lumps in different quadrants. • Gastric outlet obstruction • Ascitis b) Hepato biliary conditions c) Pancreatic conditions 			
4.	Examination of acute abdominal conditions <ul style="list-style-type: none"> • Acute Appendicitis, lump • Perforation of the hollow viscus • Acute Pancreatitis • Intestinal obstruction 			
5.	Examination of face & oral cavity, paritid			
6.	Examination of breast & axillary's lymph node (Benign & Malignant tumours)			
7.	Examination of anorectal condition			
8.	UROLOGY(2 Wk) Examination of Genitor-Urinary system <ul style="list-style-type: none"> a. Hydronephrosis, Kidney tumours b. Bladder tumours c. BEP & Carcinoma Prostate with Retention of Urine d. Scrotal Swellings, Epididymo orchitis e. Hypospedias, Phimosis, Para phimosis 			

	PAEDIATRIC SURGERY (2 WK)			
9.	<p>Examination of Paediatric surgical cases</p> <ul style="list-style-type: none"> • Anorectal malformation • Hernias • Urogenital malformations • Congenital Hypertrophic Pyeloric stenosis • Cleft lip, palate. • Haemangioma, Cystic Hygroma, Branchial cyst • Neonatal Intestinal obstruction 			
10.	<p>Short cases in out patient clinics</p> <ul style="list-style-type: none"> • Lipoma, Neurofibroma • Cyst • Haemangioma • Inguinal Hernias ,Hydrocele • Neck swellings • Breast tumours & abscess 			
	PRACTICAL			
1.	Ten complete histories with clinical examination are to be taken & recorded (2 of pediatric surgery, 2 of Urology)			
2.	Three proctoscopic examination are to be done & recorded			
3.	Observe surgical dressings & stitch-usually in 3 cases.			
4.	Ten X-rays (Including Urological) are to be seen and findings recorded			
5.	Three operations are to be assisted			
6.	Observe & introduce urethral Catheter in 5 cases			
7.	Specimen-Ca-Breast, Prostate, Sequestrum, Stomach, Thyroid, testis, Gallstones & Urinary stones.			
	TUTORIAL			
1.	Gastro-intestinal bleeding			
2.	Acute abdomen			
3.	Surgical jaundice			
4.	Chronic abdominal condition			
5.	Burn, Fluid & electrolytes, Parental Nutrition			
6.	LUTS, Haematuria			
7.	Retention of urine			

CARD COMPLETION EXAMINATION			
Attendance		out of	
Total marks obtained in items		Percentage	
Marks obtained in card Completion		Percentage	
Remarks			
Unit Chief of Surgery		Registrar Surgical Unit	

OFFICIAL RECORD (To be completed by department of Surgery)			
Date of issue of Card			
Date of return of the Card			
Date of entry of the Result			
Date of issue of next Card			
Card No.			
Excellent/Good/ Satisfactory /Unsatisfactory/ to be repeat			
Remarks and Counter signature of Unit Chief of Surgery		Registrar Department of Surgery	

8.3.4 Integrated teaching of Surgery and Allied subjects in Phase IV

General notes:

Both Departmental and Phase Integrated teaching will be arranged.

Departmental Integrated teaching includes 11 topics, 11x2 = 22 hours.

Phase Integrated teaching includes 42 topics, 42x3 = 126 hours.

8.3.4.1 Departmental Integrated teaching of Surgery and Allied subjects			
Topic	Learning Objectives	Core Contents	Disciplines involved
1. Malignant bone tumour	<p>At the end of the session the students will able to-</p> <ul style="list-style-type: none"> • define bone tumour • classify bone malignancy • mention the Clinical features of bone malignancy • state the investigation protocol of bone malignancy • outline different treatment options of bone malignancy 	<ul style="list-style-type: none"> • Definition of bone tumour • Classification of bone malignancy • Clinical features of bone malignancy • Investigations protocol of bone malignancy • Treatment modalities of bone malignancy 	<ul style="list-style-type: none"> • Orthopaedics • Histopathology • Radiology & Imaging • Oncology • Physical Medicine
2. Inflammatory bowel disease	<p>At the end of the session the students will able to-</p> <ul style="list-style-type: none"> • define inflammatory bowel diseases • mention the Clinical features of inflammatory bowel diseases • state the Investigations protocol of inflammatory bowel diseases • outline the management protocol of inflammatory bowel diseases 	<ul style="list-style-type: none"> • Definition of inflammatory bowel diseases • Variants Clinical features of inflammatory bowel diseases • Investigations of inflammatory bowel diseases • Management of inflammatory bowel diseases 	<ul style="list-style-type: none"> • General Surgery • Internal Medicine • Radiology & Imaging • Skin & VD

<p>3. Gastric outlet obstruction</p>	<p>At the end of the session the students will able to-</p> <ul style="list-style-type: none"> • define gastric outlet obstruction • mention the causes of gastric outlet obstruction • state the clinical features of gastric outlet obstruction • list the metabolic changes in gastric outlet obstruction • state the Investigations protocol of gastric outlet obstruction • mention the preoperative preparation of gastric outlet obstruction • outline the different treatment options of gastric outlet obstruction 	<ul style="list-style-type: none"> • Definition of gastric outlet obstruction • Causes of gastric outlet obstruction • Clinical features of gastric outlet obstruction • Metabolic changes in gastric outlet obstruction • Investigations of gastric outlet obstruction • Preoperative preparation of gastric outlet obstruction • Treatment of gastric outlet obstruction 	<ul style="list-style-type: none"> • General Surgery • Radiology & Imaging • Oncology • Biochemistry
<p>4. Sub-acute intestinal obstruction</p>	<p>At the end of the session the students will able to-</p> <ul style="list-style-type: none"> • define sub-acute intestinal obstruction • list the causes of sub-acute intestinal obstruction • mention the clinical features of sub-acute intestinal obstruction • state the investigations protocol of sub-acute intestinal obstruction • outline the treatment of subacute intestinal obstruction 	<ul style="list-style-type: none"> • Definition of sub-acute intestinal obstruction • Causes of sub-acute intestinal obstruction • Clinical features of subacute intestinal obstruction • Investigations of subacute intestinal obstruction • Treatment of sub-acute intestinal obstruction 	<ul style="list-style-type: none"> • General Surgery • Radiology & Imaging
<p>5. Neck swelling</p>	<p>At the end of the session the students will able to-</p> <ul style="list-style-type: none"> • define neck swelling • list the midline & lateral neck swelling types 	<ul style="list-style-type: none"> • Definition of neck swelling • Midline & lateral neck swelling types, • Causes of neck swelling • Clinical presentations of neck swelling • Investigations of neck swelling 	<ul style="list-style-type: none"> • ENT • General Surgery • Vascular Surgery.

	<ul style="list-style-type: none"> • enumerate the causes of neck swelling • mention the common clinical presentations of neck swelling • state the investigations of neck swelling • outline the management protocol of neck swelling 	<ul style="list-style-type: none"> • Management protocol of neck swelling 	
6. Epistaxis	<p>At the end of the session the students will able to-</p> <ul style="list-style-type: none"> • define epistaxis • describe the anatomy of nasal septum • state the sites of epistaxis • list the causes of epistaxis • outline the step wise management protocol of epistaxis 	<ul style="list-style-type: none"> • Definition of epistaxis • Anatomy of nasal septum • Sites of epistaxis • Causes of epistaxis • Step-wise management of epistaxis 	<ul style="list-style-type: none"> • ENT • Anatomy • Medicine
7. Stridor in Children	<p>At the end of the session the students will able to-</p> <ul style="list-style-type: none"> • define stridor • list the causes of stridor in children • enumerate the causes of pyrexial & apyrexial stridor in children • state the investigations of stridor in children • outline the management protocol of stridor in children 	<ul style="list-style-type: none"> • Definition of stridor • Causes of pyrexial & apyrexial stridor in children • Investigations of stridor in children • Treatment of stridor in children 	<ul style="list-style-type: none"> • Paediatrics • Paediatric Surgery • ENT
8. Bladder outflow obstruction	<p>At the end of the session the students will able to-</p>	<ul style="list-style-type: none"> • Definition of bladder outflow obstruction 	<ul style="list-style-type: none"> • Urology • Radiology & Imaging

	<ul style="list-style-type: none"> • define bladder outflow obstruction • mention the causes of bladder outflow obstruction • explain the pathophysiology of bladder outflow obstruction • list the clinical features of bladder outflow obstruction • state the investigations of bladder outflow obstruction • outline the treatment of bladder outflow obstruction 	<ul style="list-style-type: none"> • Causes of bladder outflow obstruction • Pathophysiology of bladder outflow obstruction • Clinical features of bladder outflow obstruction • Investigations of bladder outflow obstruction • Treatment of bladder outflow obstruction 	<ul style="list-style-type: none"> • General Surgery
9. Metabolic bone disease	<p>At the end of the session the students will able to-</p> <ul style="list-style-type: none"> • define metabolic bone disease • enumerate the types of metabolic bone disease • list the causes of metabolic bone disease • state the clinical feature of metabolic bone disease • state the complications of metabolic bone disease • list the investigations of metabolic bone disease • outline the management protocol of metabolic bone disease • mention the prevention of metabolic bone disease 	<ul style="list-style-type: none"> • Definition of metabolic bone disease • Types of metabolic bone disease • Causes of metabolic bone disease • Clinical features of metabolic bone disease • Complications of metabolic bone disease • Investigations of metabolic bone disease • Management of metabolic bone disease • Prevention of metabolic bone disease 	<ul style="list-style-type: none"> • Orthopaedics • Physiology • Radiology • Physical Medicine
10. Spinal injury	<p>At the end of the session the students will able to-</p> <ul style="list-style-type: none"> • define spinal injury 	<ul style="list-style-type: none"> • Definition of spinal injury • Types of spinal injury • Causes of spinal injury 	<ul style="list-style-type: none"> • Orthopaedics • Surgery • Radiology & Imaging

	<ul style="list-style-type: none"> • state the types of spinal injury • list the causes of spinal injury • mention the clinical features of spinal injury • state the complications of spinal injury • list the investigations of spinal injury • outline the management protocol of spinal injury • outline the rehabilitation process of spinal injury 	<ul style="list-style-type: none"> • Clinical features of spinal injury • Complication of spinal injury • Investigations of spinal injury • Treatment of spinal injury • Rehabilitation process of spinal injury 	<ul style="list-style-type: none"> • Anatomy • Neurology • Urology • Neurosurgery
11. Proptosis	<p>At the end of the session the students will able to-</p> <ul style="list-style-type: none"> • define proptosis • state the types of proptosis • list the causes of proptosis • mention the clinical features of proptosis • state the effects of proptosis • list the investigations of proptosis • outline the management protocol of proptosis 	<ul style="list-style-type: none"> • Definition of proptosis • Types of proptosis • Causes of proptosis • Clinical features of proptosis • Effects of proptosis • Investigations of proptosis • Treatment of proptosis 	<ul style="list-style-type: none"> • Ophthalmology • ENT • Endocrinology • Internal Medicine

8.3.4.2 Phase IV Integrated teaching of Surgery and Allied subjects

Topic	Learning Objectives	Core Contents	Disciplines involved
1. Hypertension	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • define hypertension • classify hypertension • mention causes of secondary hypertension • mention complications • mention accelerated and malignant hypertension • plan investigations • manage hypertension as well as complications • evaluate and manage hypertension in pregnancy • manage of hypertension before, during and after surgery 	<ul style="list-style-type: none"> • Definition • Classification • Etiology • Secondary hypertension • Approach to newly diagnosed hypertension • Measurement of blood pressure in different posture with importance • History and physical examination • Target organ damage • Investigation • Management • Anti-hypertensive drugs • Hypertension in pregnancy 	<ul style="list-style-type: none"> • Internal Medicine/ Cardiology • General Surgery • Obstetrics & Gynaecology • Ophthalmology
2. Tuberculosis	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • mention epidemiology • explain pathology and pathogenesis • enumerate organ involvement • describe the natural history of untreated primary TB • mention clinical features of pulmonary TB • mention clinical features of extra pulmonary TB • perform necessary investigations • manage a case of TB 	<ul style="list-style-type: none"> • Epidemiology • Pathogenesis & Pathology • Clinical features: pulmonary, extra pulmonary • Investigations • Management • TB in pregnancy • Drug reaction to Anti TB drugs • TB and surgery 	<ul style="list-style-type: none"> • Internal Medicine • General Surgery • Obstetrics & Gynaecology • Dermatology • Ophthalmology • Otolaryngology • Orthopedics • Pediatrics

	<ul style="list-style-type: none"> • manage TB in pregnancy • diagnose and manage drug reaction to Anti TB drugs • evaluate role of surgery in TB 		
3. Thyroid Disorders	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • list common thyroid disorders • mention hypo function of thyroid with etiology • mention hyperfunction of thyroid with etiology • state the causes of thyroid enlargement • enumerate the clinical features of hypothyroidism and hyperthyroidism • perform necessary investigations for suspected case of thyroid dysfunction and their interpretation • manage hypothyroidism and hyperthyroidism 	<ul style="list-style-type: none"> • Thyrotoxicosis <ul style="list-style-type: none"> • Definition • Causes • Clinical features • Investigations • Management • Crisis • Hypothyroidism <ul style="list-style-type: none"> • Definition • Causes • Clinical features • Investigations • Management • Crisis • Thyroid lump/ swelling <ul style="list-style-type: none"> • Causes • Clinical assessment • Investigations • Transient thyroiditis • Autoimmune thyroiditis • Thyroid disorder in pregnancy • Surgery and thyroid dysfunction 	<ul style="list-style-type: none"> • Internal Medicine • General Surgery • Obstetrics & Gynaecology • Otolaryngology • Skin and VD
4. Acute Kidney Injury	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • define AKI • list causes of AKI • describe the pathophysiology of AKI 	<ul style="list-style-type: none"> • Definition of AKI • Causes of AKI • Pathophysiology of AKI • Clinical features • Investigations • Management 	<ul style="list-style-type: none"> • Internal Medicine/ Nephrology • General Surgery • Obstetrics & Gynaecology • Paediatrics

	<ul style="list-style-type: none"> • mention clinical features • plan Investigations • manage cases • mention complications of AKI • identify and manage AKI in paediatrics • evaluate and manage pregnancy with AKI • diagnose and manage AKI related with surgery 	<ul style="list-style-type: none"> • Complications of AKI • AKI in paediatrics • AKI in Pregnancy • AKI related with surgery 	
5. Fever	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • list the etiology of fever • Investigate a case • mention management of cases & management of complications both in adults and in children. • evaluate and manage fever during pregnancy • mention the role of surgery in management of a case of fever • list the consequences of fever 	<ul style="list-style-type: none"> • etiology of fever • Investigation of a case of fever • management of fever and management of complications both in adults and in children. • management of fever during pregnancy • the role of surgery in management of a case of fever • consequences of fever 	<ul style="list-style-type: none"> • Internal Medicine/ Gastroenterology • General Surgery • Obstetrics & Gynaecology • Paediatrics
6. Oedema	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • define oedema • explain the pathophysiology • list the causes • mention clinical assessment of a case of oedema • investigate a case • plan management both in adults and in children. 	<ul style="list-style-type: none"> • Definition of oedema • Pathophysiology • Causes of oedema • Clinical assessment of a case of oedema • Investigations • Management both in adult sand in children. • Evaluation and management of oedema during pregnancy 	<ul style="list-style-type: none"> • Internal Medicine • General Surgery • Obstetrics & Gynaecology • Paediatrics

	<ul style="list-style-type: none"> • evaluate and manage oedema during pregnancy • mention the role of surgery in selective cases of oedema 	<ul style="list-style-type: none"> • Role of surgery in selective cases of oedema 	
7. Chest pain	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • mention the causes of chest pain • outline the systematic approach to most of the common causes of chest pain (History and clinical exam) • interpret the findings in terms of diseases, possible causes, and plan of investigations • make emergency decision regarding management • plan treatment 	<ul style="list-style-type: none"> • Causes of chest pain • Systematic approach to chest pain • Clinical features of chest pain • DDs of chest pain • Lab diagnosis of chest pain • Treatment of chest pain 	<ul style="list-style-type: none"> • Internal Medicine/ Respiratory Medicine • General Surgery • Obstetrics & Gynaecology • Cardiology
8. Acute respiratory distress	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • mention the causes • outline the systematic approach to most of the common causes of respiratory distress (history and clinical exam) • outline the plan of investigations • interpret the findings to reach the cause and to exclude differential diagnosis • plan treatment approach 	<ul style="list-style-type: none"> • Causes • Systematic approach • Clinical features • Lab diagnosis • Treatment 	<ul style="list-style-type: none"> • Internal Medicine • General Surgery • Obstetrics & Gynaecology • Cardiology • Respiratory Medicine
9. DM	<p>At the end of the session students will be able to:</p>	<ul style="list-style-type: none"> • Definition of DM • Classification of DM 	<ul style="list-style-type: none"> • Internal Medicine • General Surgery

	<ul style="list-style-type: none"> • define DM • classify DM • describe brief pathophysiology • state presenting features • mention short term and long-term complications. • outline laboratory diagnosis • mention WHO guideline • manage DM in different clinical settings (in pregnancy, children, in kidney disease) 	<ul style="list-style-type: none"> • Pathophysiology of DM • C/F of DM • Complications of DM • Lab. diagnosis of DM • Management of DM (Including Special situations) 	<ul style="list-style-type: none"> • Obstetrics & Gynaecology • Endocrinology • Skin and VD
10. Jaundice	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • define jaundice • classify jaundice • explain the pathophysiology of different type of jaundice • outline systematic approach to differentiate different types of jaundice • plan relevant investigations • outline treatment approaches 	<ul style="list-style-type: none"> • Definition • Causes • Classification • Pathophysiology • C/F • Differential diagnosis • Lab. investigations • Treatment 	<ul style="list-style-type: none"> • Internal Medicine • General Surgery • Obstetrics & Gynaecology • Gastroenterology • Paediatrics
11. Diarrhea and vomiting	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • define diarrhea • mention causes • describe pathogenesis • classify dehydration • assess dehydration • describe clinical presentation and consequences • plan investigations and interpretation 	<ul style="list-style-type: none"> • Vomiting and causes • Diarrheal disease- <ul style="list-style-type: none"> a) Acute watery diarrhea b) Persistent diarrhea c) Dysentery • Assess dehydration and appropriate management • Composition of ORS, cholera saline • Complication • Prevention 	<ul style="list-style-type: none"> • Paediatrics • Internal Medicine • General Surgery • Obstetrics & Gynaecology

	<ul style="list-style-type: none"> • outline management • mention preventive measures 		
12. Nutrition	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • define IYCF • define nutrition • mention common nutritional problem • define malnutrition • classify malnutrition • explain growth chart • assess malnutrition • mention principals of management • describe vitamin deficiency • describe briefly the micronutrient deficiency • define obesity and malnutrition 	<ul style="list-style-type: none"> • Nutrition • IYC Definition • Common nutritional problems • Malnutrition <ul style="list-style-type: none"> • Definition • Classification • Growth chart • Assessment of malnutrition • Principals of management • Vitamin Deficiency- common vit deficiency like A, D, K. • Micronutrient Deficiency- Iron deficiency anemia • Obesity- definition, BMI, cause, clinical presentation, Investigations and interpretation • Complications 	<ul style="list-style-type: none"> • Paediatrics • Internal Medicine • General Surgery • Obstetrics & Gynaecology
13. Paediatric emergency	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • mention the types of Poisoning • outline management of drowning, burn, dog bite, snake bite & status epilepticus • mention the preventive measures 	<ul style="list-style-type: none"> • Poisoning- <ol style="list-style-type: none"> a) common household poisoning, b) kerosene poisoning, c) OPC poisoning, d) drug poisoning • Drowning • Burn • Dog bite • Snake bite • Status epilepticus 	<ul style="list-style-type: none"> • Paediatrics • Internal Medicine • General Surgery • Obstetrics & Gynaecology
14. Headache	<p>At the end of the session students will</p>	<ul style="list-style-type: none"> • Definition of headache 	<ul style="list-style-type: none"> • Psychiatry

	<p>be able to:</p> <ul style="list-style-type: none"> • define headache • mention the types of headache • perform the history taking of headache • state the clinical features of headache • mention the symptoms of headache related to intracranial causes • explain the symptoms of headache due to ophthalmic or ENT causes 	<ul style="list-style-type: none"> • Epidemiology of headache • Common causes of headache • Types of headache • Tension headache • Migraine • Differential diagnosis of headache • Management of headache 	<ul style="list-style-type: none"> • Internal Medicine • Neurology • Eye • ENT
15. Anxiety	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • define anxiety • classify anxiety disorders • state the clinical features of anxiety disorder • diagnose GAD • mention the organic causes of anxiety • manage a case of anxiety disorder 	<ul style="list-style-type: none"> • Definition of anxiety, anxiety disorder • Neurotransmitter involved in anxiety • Epidemiology of GAD • Signs and symptoms of anxiety disorders • Treatment of Anxiety disorder • Postpartum blues anxiety 	<ul style="list-style-type: none"> • Psychiatry • Internal Medicine • Pediatrics • Obstetrics & Gynaecology
16. Depression	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • define depression • classify depressive disorder • state the clinical features of depressive disorder • diagnose depressive disorder • mention the organic causes of depression • manage a case of depressive disorder 	<ul style="list-style-type: none"> • Definition of depression & depressive disorder • Neurotransmitter involved in depression • Epidemiology of depressive disorder • Sign symptoms of depressive disorder • Treatment of depressive disorder • Postpartum blues depression in children 	<ul style="list-style-type: none"> • Psychiatry • Internal Medicine • Pediatrics • Obstetrics & Gynaecology

<p>17. Psychosis</p>	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • define Psychosis • classify Psychotic disorder • state the clinical features of Psychotic disorder • diagnose Schizophrenia • diagnose Bipolar Disorder • manage a case of Schizophrenia • manage a case of Bipolar Disorder • state the prognosis of Psychotic disorder 	<ul style="list-style-type: none"> • Definition of Psychosis, Hallucination, Delusion • Classification of Psychosis • Neurotransmitter involved in Psychosis • Epidemiology of Schizophrenia • Epidemiology of Bipolar disorder • Sign symptoms of Psychosis • ICU Psychosis • Postpartum Psychosis • Diagnostic criteria of schizophrenia • Diagnostic criteria of Bipolar disorder • Treatment of Schizophrenia • Treatment of Bipolar disorder 	<ul style="list-style-type: none"> • Psychiatry • Internal Medicine • Obstetrics & Gynaecology
<p>18. Delirium & Dementia</p>	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • define delirium & dementia • mention the causes of delirium & dementia • classify dementia • state the clinical features of delirium & dementia • diagnose a case of delirium & dementia • manage a case of delirium & dementia • state the prognosis of dementia 	<ul style="list-style-type: none"> • Definition of delirium • Definition of dementia • Causes of delirium • Causes of dementia • Classification of dementia • Clinical feature of delirium • Clinical feature of dementia • Diagnosis of delirium • Diagnosis of dementia • Management of delirium • Management of dementia • Prognosis of dementia 	<ul style="list-style-type: none"> • Psychiatry • Internal Medicine • Neurology
<p>19. Drug reaction</p>	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • define drug reaction 	<ul style="list-style-type: none"> • Definition of drug reaction • Types of drug reaction • Pathogenesis of drug reaction 	<ul style="list-style-type: none"> • Department of Skin & VD • Internal Medicine

	<ul style="list-style-type: none"> • explain the pathogenesis of drug reaction • state the clinical features of drug reaction • differentiate drug reaction from other diseases • outline the investigations of drug reaction • outline the management of drug reactions 	<ul style="list-style-type: none"> • Clinical features of drug reaction • Differential diagnosis of drug reaction • Investigation of drug reaction • Management of drug reaction 	<ul style="list-style-type: none"> • Paediatrics • General Surgery • Obstetrics & Gynaecology • Pharmacology • Pathology
20. Generalised pruritus	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • define pruritus • mention the causes of generalized pruritus • mention the pathway of pruritus • explain pathophysiology of pruritus • outline the investigation of pruritus • outline the general and specific management of pruritus 	<ul style="list-style-type: none"> • Definition of pruritus • Pathway of pruritus • Causes of pruritus • Pathophysiology of pruritus • Differential diagnosis • Investigation of pruritus • Management of pruritus 	<ul style="list-style-type: none"> • Department of Skin & VD • Internal Medicine • Paediatrics • General Surgery • Obstetrics & Gynaecology
21. Purpura	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • define purpura and related terms • mention the causes of purpura • explain the pathogenesis of purpura • mention the types of purpura • mention the investigation of purpura • describe the management of purpura 	<ul style="list-style-type: none"> • Definition of purpura • Types of purpura • Pathogenesis of purpura • Investigation of purpura • Management of purpura 	<ul style="list-style-type: none"> • Department of Skin & VD • Internal Medicine • Haematology • Paediatrics • General Surgery • Pathology

22. STI	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • define STI and related terms • classify STI • clinical features of STI • mention the laboratory investigation of STI • differentiate STI from other diseases • describe the management of STI • outline prevention and control measures 	<ul style="list-style-type: none"> • Definition of STI • Classification of STI • Clinical feature of STI • Laboratory investigations of STI • Differential diagnosis of STI • Management of STI • Prevention and control of STI 	<ul style="list-style-type: none"> • Department of Skin & VD • Internal Medicine • General Surgery • Microbiology • Community Medicine
23. Low back pain	<p>At the end of session students will be able to:</p> <ul style="list-style-type: none"> • define Low Back Pain • mention different types of Low Back Pain • describe the pathogenesis of Low Back Pain • enumerate the clinical features • list the required laboratory investigations • management with prevention 	<ul style="list-style-type: none"> • Definition of Low Back Pain • Types of Low Back Pain • Clinical stages of Low Back Pain • Pathophysiology • Clinical feature • Complication • Indication of operative and non-operative treatment 	<ul style="list-style-type: none"> • Pathology • Pharmacology • Physical Medicine • Radiology • Orthopedics
24. Joint pain	<p>At the end of session students will be able to:</p> <ul style="list-style-type: none"> • explain the etiopathogenesis of the disease. • mention the causes of joint pain • list the types of arthritis • outline the management of the disease according to the causes 	<ul style="list-style-type: none"> • Types of arthritis • Stages of all types of arthritis • Complications • Conservative vs surgical treatment 	<ul style="list-style-type: none"> • Anatomy • Pathology • Pharmacology • Physical Medicine

25. Osteoporosis	<p>At the end of session students will be able to:</p> <ul style="list-style-type: none"> • mention basic physiology of the bone and pathology of osteoporosis • explain the consequences of osteoporosis • describe social and economic burden in the society • outline the management with a protocol of prevention 	<ul style="list-style-type: none"> • Causes and types of Osteoporosis • Pathophysiology of osteoporosis • Complication • Drug used for Prevention 	<ul style="list-style-type: none"> • Physiology • Pathology • Pharmacology • Endocrinology • Radiology • Obstetrics & Gynaecology
26. Acute Abdomen	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • define acute abdomen • list the common causes of acute abdomen • mention the surgical, medical & gynecological causes of acute abdomen • state the specific management protocol of acute abdomen 	<ul style="list-style-type: none"> • Definition of acute abdomen • Causes and examples of acute abdomen • Surgical causes of acute abdomen • Medical causes of acute abdomen • Gynecological causes of acute abdomen • Specific management of acute abdomen 	<ul style="list-style-type: none"> • Internal Medicine • General Surgery • Obstetrics & Gynaecology • Paediatrics
27. Thrombophlebitis/ Phlebothrombosis	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • define thrombophlebitis • define phlebothrombosis • mention the etiology of thrombophlebitis & phlebothrombosis • explain the pathogenesis of thrombophlebitis & phlebothrombosis • state the clinical features of thrombophlebitis & phlebothrombosis • differentiate between thrombophlebitis 	<ul style="list-style-type: none"> • Definition of thrombophlebitis & phlebothrombosis • Etiology of thrombophlebitis & phlebothrombosis • Pathology of thrombophlebitis & phlebothrombosis • Clinical features of thrombophlebitis & phlebothrombosis • Names procoagulant & anticoagulant • Complications of thrombophlebitis & phlebothrombosis 	<ul style="list-style-type: none"> • Internal Medicine • General Surgery • Obstetrics & Gynaecology • Pathology

	<ul style="list-style-type: none"> • & phlebothrombosis • state the name of procoagulant & anticoagulant • mention the complications of thrombophlebitis & phlebothrombosis • outline the management of thrombophlebitis & phlebothrombosis • state the measures of physiotherapy for prevention of thrombophlebitis & phlebothrombosis 	<ul style="list-style-type: none"> • Management of thrombophlebitis & phlebothrombosis • Preventive measures 	
28. Sepsis	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • define sepsis, MODS, SIRS, bacteremia, pyaemia, septic shock • mention the etiology of sepsis • explain the pathophysiology of sepsis • state the clinical features of sepsis • differentiate the stages of sepsis • state the investigations for sepsis • outline the general management of sepsis • assess the need of HDU and ICU support in sepsis • state the fate of sepsis 	<ul style="list-style-type: none"> • Definition-MODS, SIRS, bacteremia, pyaemia, septic shock • Etiology of sepsis • Pathophysiology of sepsis • Clinical features of sepsis • Investigations of sepsis • General management of sepsis • Fate of sepsis 	<ul style="list-style-type: none"> • Internal Medicine, • General Surgery, • Obstetrics & Gynaecology • Pathology • Pharmacology
29. Infection Prevention & Control	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • define sterilization • state the concept of disinfection • mention universal precaution of infection prevention & control • define hospital acquired infection 	<ul style="list-style-type: none"> • Concept of sterilization • Concept of disinfection • Universal precaution • Hospital acquired infection • Cross infection • Infection control in emerging diseases • Prevention of hospital infection 	<ul style="list-style-type: none"> • Internal Medicine, • General Surgery • Obstetrics & Gynaecology • Pathology • Anaesthesiology • Critical care Medicine

	<ul style="list-style-type: none"> • describe cross infection • describe infection control in emerging diseases • mention prevention of hospital infections 		
30. Shock	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • define shock • state the types of shock • explain the pathogenesis of shock • list the clinical features of shock • state the complications of shock • outline the general management of shock • state the indications of HDU and ICU 	<ul style="list-style-type: none"> • Definition of shock • Types of shock • Pathogenesis of shock • Clinical features of shock • Complications of shock • General management of shock 	<ul style="list-style-type: none"> • Internal Medicine, • General Surgery • Obstetrics & Gynaecology • Pathology • Anaesthesiology • Critical care Medicine
31. Fluid and electrolytes	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • state the daily input/output of fluids and electrolytes • mention the normal level of common electrolytes • define hypo and hyper natraemia • list the causes of hypo and hyper natraemia • mention the clinical feature of hypo and hyper natraemia • outline the treatment of hypo and hyper natraemia • define hypo and hyper kalaemia • state the causes of hypo and hyper kalaemia 	<ul style="list-style-type: none"> • Daily input/output • Normal level of common electrolytes • Definition of hypo and hyper natraemia, • Causes of hypo and hyper natraemia • Clinical features of hypo and hyper natraemia • Treatment of hypo and hyper natraemia • Definition of hypo and hyper kalaemia, • Causes of hypo and hyper kalaemia • Clinical features of hypo and hyper kalaemia • Treatment of hypo and hyper kalaemia 	<ul style="list-style-type: none"> • Internal Medicine • General Surgery • Obstetrics & Gynaecology • Pathology • Anaesthesiology • Critical care Medicine • Biochemistry • Physiology

	<ul style="list-style-type: none"> • mention the clinical feature of hypo and hyper kalaemia • outline the treatment of hypo and hyper kalaemia • define hypo and hyper calcemia • state the causes of hypo and hyper calcemia • mention the clinical feature of hypo and hyper calcemia • state the treatment of hypo and hyper calcemia 	<ul style="list-style-type: none"> • Definition of hypo and hyper calcemia, • Causes of hypo and hyper calcemia • Clinical features of hypo and hyper calcemia • Treatment of hypo and hyper calcemia 	
32. Burn	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • define burn • state clinical feature of burn according to depth • explain the pathogenesis of burn • state the complications of burn • mention the assessment criteria of surface area of burn • state the assessment criteria of fluid requirement of burn • outline the general management of burn • state the compartmental syndrome and fasciotomy • define contracture • state the prevention of contracture • mention the reconstructive measures of contracture 	<ul style="list-style-type: none"> • Definition of burn • Clinical features of burn according to depth • Pathogenesis of burn • Complications of burn • Surface area assessment of burn • Fluid requirement assessment of burn • General management of burn • Compartmental syndrome and fasciotomy • Contracture, prevention and reconstructive measures 	<ul style="list-style-type: none"> • General Surgery • Plastic Surgery • Paediatrics • Anaesthesiology • Critical care Medicine
33. Per rectal bleeding	<p>At the end of the session students will be able to:</p>	<ul style="list-style-type: none"> • Definition of per rectal bleeding • Types of per rectal bleeding 	<ul style="list-style-type: none"> • Internal Medicine, • General Surgery

	<ul style="list-style-type: none"> • define per rectal bleeding • state the types of per rectal bleeding • list the causes of per rectal bleeding • mention the clinical features of per rectal bleeding • state the investigation protocol of per rectal bleeding • outline the management of per rectal bleeding 	<ul style="list-style-type: none"> • Causes of per rectal bleeding • Clinical features of per rectal bleeding • Investigation protocol of per rectal bleeding • Management of per rectal bleeding 	<ul style="list-style-type: none"> • Obstetrics & Gynaecology • Pediatric surgery
34. Vertigo (33)	<p>At the end of session students will be able to:</p> <ul style="list-style-type: none"> • define vertigo • classify vertigo • explain anatomy & physiology of balance • describe pathophysiology of vertigo • explain causes of vertigo • state sign & symptoms of vertigo • mention the investigations of vertigo • describe the management of vertigo • state rehabilitation procedure of patient with chronic vertigo 	<ul style="list-style-type: none"> • Definition of vertigo • Classification of vertigo • Anatomy & physiology of balance • Pathophysiology of vertigo • Causes of vertigo • Symptoms & signs of vertigo • Investigation of vertigo • Management of vertigo • Rehabilitation of chronic vertigo 	<ul style="list-style-type: none"> • Otolaryngology • Medicine • Ophthalmology • Orthopedics • Anatomy • Physiology
35. Congenital anomalies	<p>At the end of session students will be able to:</p> <ul style="list-style-type: none"> • define congenital anomalies / birth defects • classify congenital anomalies • mention the causes and risk factors of congenital anomalies • state the screening of congenital anomalies • list the common congenital 	<ul style="list-style-type: none"> • Definition of congenital anomalies / birth defects • Classification of congenital anomalies • Causes & risk factors of congenital anomalies • Screening of congenital anomalies • Epidemiology of congenital anomalies • Common congenital anomalies • Management of congenital anomalies 	<ul style="list-style-type: none"> • Pediatrics • Orthopedics • Cardiology • Plastic surgery • Otolaryngology • Anatomy

	<p>anomalies</p> <ul style="list-style-type: none"> • state epidemiology of common congenital anomalies • outline management of congenital anomalies • explain prevention of congenital anomalies • describe rehabilitation of a patient with congenital anomalies 	<ul style="list-style-type: none"> • Prevention of congenital anomalies • Rehabilitation of patients with congenital anomalies 	
36. Wound infection	<p>At the end of session students will be able to:</p> <ul style="list-style-type: none"> • define wound infection, surgical site infection & nosocomial infection • mention the causes and risk factors of wound infection and nosocomial infection • describe the pathophysiology of wound infection • list the clinical features of wound infection • describe the management of wound infection • explain prevention of wound infection and nosocomial infection • state the consequences of untreated wound infection 	<ul style="list-style-type: none"> • Definition of wound infection, surgical site infection & nosocomial infection • Causes and risk factors of wound infection and nosocomial infection • Pathophysiology of wound infection • Clinical features of wound infection • Management of wound infection • Prevention of wound infection and nosocomial infection • Consequences of untreated wound infection 	<ul style="list-style-type: none"> • Surgery • Obstetrics & Gynaecology • Otolaryngology • Pathology • Microbiology
37. Urinary tract infection (UTI)	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • define UTI • enumerate the micro-organisms responsible for UTI • explain the signs and symptoms of 	<ul style="list-style-type: none"> • Definition of UTI • Micro-organisms responsible for UTI • Signs and symptoms of UTI • Investigations for UTI • Effects of pregnancy (hormonal) on UTI 	<ul style="list-style-type: none"> • Medicine / Nephrology • Obstetrics & Gynaecology • Microbiology • Pharmacology

	<p>UTI</p> <ul style="list-style-type: none"> • enumerate different investigations for UTI • explain the effects of pregnancy (hormonal) on UTI • explain the complications of UTI especially on pregnancy and fetus • list the drugs used for treatment of UTI • mention appropriate referral criteria for UTI 	<ul style="list-style-type: none"> • Complications of UTI on pregnancy and fetus • Drugs used for treatment of UTI • Criteria of referral for UTI 	
38. AUB	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • define different types abnormal uterine bleeding (AUB) • explain the causes and pathophysiology of AUB • state the clinical features of AUB • mention the investigations for AUB • name the differential diagnosis of different causes AUB • outline the management approach of the cases of AUB 	<ul style="list-style-type: none"> • Definition of different types AUB (like-menorrhagia, polymenorrhoea, oligomenorrhoea, amenorrhoea etc.) • Causes & Pathophysiology of AUB • Clinical features of AUB • Investigations for AUB • Differential diagnosis of different causes AUB (like- hypothalamic pituitary dysfunction, ovarian dysfunction, thyroid dysfunction, diabetes mellitus, haemoglobinopathies, thrombocytopenia & dengue) • Management approach of the cases of AUB 	<ul style="list-style-type: none"> • Obstetrics & Gynaecology • Medicine • Endocrinology • Haematology
39. Convulsion	<p>At the end of the session students will be able to:</p> <ul style="list-style-type: none"> • define convulsion • state the magnitude & patient profiles of convulsion • mention the causes of convulsion 	<ul style="list-style-type: none"> • Definition of convulsion • Magnitude & patient profiles of convulsion • Causes of convulsion • Clinical features convulsion • D/Ds of different causes of convulsion 	<ul style="list-style-type: none"> • Paediatrics • Obstetrics & Gynaecology • Medicine / Neuro-medicine • Surgery/Neurosurgery

	<ul style="list-style-type: none"> • list the clinical features convulsion • mention D/Ds of different types of convulsion • list the investigations for convulsion • outline the treatment of convulsion • state the prevention of convulsion • state complications of convulsion 	<p>(like- Head Injury, Brain Abscess, Brain Tumour, Tuberculosis, Epilepsy, Sepsis, Poisoning, Eclampsia)</p> <ul style="list-style-type: none"> • Investigations for convulsion • Treatment of convulsion • Prevention of convulsion • Complications of convulsion 	
40. Abdominal lump	<p>At the end of the session students will be able to-</p> <ul style="list-style-type: none"> • define abdominal lump • mention the causes of different forms of abdominal lump • state the magnitude & patient profiles of abdominal lump • mention the clinical presentation abdominal lump • mention the investigations for abdominal lump • explain differential diagnosis of different form of abdominal lump • outline treatment of abdominal lump • explain follow up of abdominal lump 	<ul style="list-style-type: none"> • Definition of abdominal lump • Causes of abdominal lump (Different forms of abdominal lump like - GIT lumps, Lymphoma, Mesenteric Cyst, Enlarged liver, Enlarged Spleen, Fibroid Uterus, Benign Ovarian Tumor, Malignant Ovarian. Tumour & TO mass) • Magnitude & patient profiles of abdominal lump • Clinical presentation of abdominal lump • Investigations for abdominal lump • Differential diagnosis of different forms of abdominal lump • Treatment of abdominal lump • Follow up of abdominal lump 	<ul style="list-style-type: none"> • Obstetrics & Gynaecology • Surgery • Medicine • Oncology
41. Anaemia	<p>At the end of session students will be able to:</p> <ul style="list-style-type: none"> • define anaemia • classify anaemia • list common causes of anaemia in Bangladesh • explain clinical approaches (history taking, physical examination & 	<ul style="list-style-type: none"> • Definition of anaemia • Classification of anaemia • Common causes of anaemia in Bangladesh • Approach (history taking, clinical examination and lab investigation) towards an anaemic patient • Treatment of anaemia 	<ul style="list-style-type: none"> • Medicine/ Hematology • Obstetrics & Gynaecology • Surgery

	<p>investigations) of a patient with anaemia</p> <ul style="list-style-type: none"> • describe treatment of anaemia • state management of anaemia before surgery • outline management of anaemia during pregnancy • mention prevention of anaemia 	<ul style="list-style-type: none"> • Management of anaemia before surgery • Management of anaemia during pregnancy • Prevention of anaemia 	
42. Unconsciousness	<p>At the end of session students will be able to:</p> <ul style="list-style-type: none"> • define unconsciousness • mention the level of unconsciousness. • list the causes of unconsciousness. • explain clinical approaches (history taking, physical examination & investigations) towards an unconsciousness patient • outline emergency management of an unconscious patient. • describe general management of unconscious patient • mention indications of emergency surgery for unconscious patient • mention emergency obstetrics care for unconscious patient. 	<ul style="list-style-type: none"> • Definition of unconsciousness • Level of unconsciousness (including Glasgow Coma Scale) • Approach to an unconscious patient (history taking, clinical examination, lab investigation and bedside investigation) • Responsibility of an emergency medical officer (ABC) • General management of unconscious patient • Indications of emergency surgery for unconscious patient • Emergency obstetric care for unconscious patient. 	<ul style="list-style-type: none"> • Medicine: Neuro-medicine • Surgery • Obstetrics & Gynaecology

8.3.5 Generic topics on Medical Humanities in Phase IV:

8.3.5.1 General Instructions:

- Generic topics on Medical Humanities will be taught within 4th Phase under supervision of Phase-IV coordination committee in collaboration with medical education unit (MEU).
- The sessions will be under the guidance of Principal & Vice-principal, coordinated by concerned departments
- Sessions will be delivered by concerned experts of the topics.
- Each session will be one and half hour.
- Attending these sessions will be mandatory and will be necessary to sit for Final MBBS examination.

8.3.5.2 Topics:

- Medical professionalism
- Inter-professionalism
- Patient Safety & Medical Error

8.3.5.3 Presentation Instructions for Generic Topics on Medical Humanities

Topics	Learning objective	List of Contents	Method	Time
Medical Professionalism	<ul style="list-style-type: none"> • explain the terminology: professionalism, medical professionalism • state the importance of medical professionalism • explain the professional responsibilities in healthcare • mention the ways and means of improving medical professionalism 	<ul style="list-style-type: none"> • The terminology: professionalism, medical professionalism • Importance of medical professionalism • Professional responsibilities in health care • Ways and means of improving medical professionalism 	Interactive Lecture or Seminar	One and half hour
Inter-professionalism	<ul style="list-style-type: none"> • define Inter-professionalism (IP) • mention importance of IP in healthcare • list the members of the inter-professional collaboration • state the means of developing inter-professional collaboration among health team • mention some health service related areas requiring inter-professional collaboration 	<ul style="list-style-type: none"> • Definition of Inter-professionalism (IP) • Importance of IP in health care • Members of the inter-professional team collaboration • Means of developing inter-professional collaboration among health team • Some health service related areas requiring inter-professional collaboration 	Interactive Lecture or Seminar	One and half hour
Patient Safety & medical error	<ul style="list-style-type: none"> • define patient safety • mention importance of patient safety • define medical errors and medical negligence • list common medical errors and medical negligence • explain responsibility of patient safety and rights of a patient • mention the common patient safety issues and goals • explain means of administration of quality care to the patient 	<ul style="list-style-type: none"> • Definition and importance of patient safety • Definition and common medical errors and medical negligence • Responsibility of patient safety and rights of a patient • Common patient safety issues and goals • Means of administration of quality care to the patient 	Interactive Lecture or Seminar	One and half hour

8.3.6 Phase IV Evaluation in Surgery and Allied subjects.

- Evaluation will be done by:
 - a. Item examinations
 - b. Card Final examination (Card Final 3)
 - c. Final Assessment examination
- Item exam to be taken after each 2/ 3 clinical demonstration classes.
- Card exam clearance is necessary to appear in Final Assessment exam.
- Final Assessment is mandatory for eligibility to sit for Final MBBS Professional examination
- Card Final and Final Assessment examinations will carry marks in Formative assessment of Final MBBS Professional exam.

8.3.6.1 Card Final exam:

Eligibility:

1. Attendance in clinical class 75% or more
2. Completed item exams in scheduled card [Card Two-B (Orthopaedics) and Card Three (Surgery)]

Card exam	Card final exam date	Methods of exam	Covering discipline	Allocated time	Marks: 100
Card final 3 (Phase IV)	2 nd /3 rd last day of clinical placement	Short case: 2	Surgery: 1 Ortho/Paed :1	7.5x2 = 15 mins	15x2 = 30
		Long Case: 1	Surgery	30 mins (20+10)	30
		Viva: 2 tables	Table 1: Surgery + Urology Table 2: Ortho + PaedS	5 mins 5 mins	20 20

8.3.6.2 Final Assessment examination:

General Notes:

1. Will be held after completion of Block Posting.
2. Students will get 10 days preparatory leave before Final Assessment Exam.
3. Will be similar to Final Professional Exam.
4. Carry 2 marks in Formative assessment of Final MBBS Exam.

Eligibility:

1. Completed Card exams
2. Attendance 75% or more in Lecture, Clinical classes, Integrated teaching, Block posting.
3. Attendance in Generic topics on Medical Humanities lectures.

Assessment & Evaluation:

Evaluation will be done by

- (a) Written (Formative+ MCQ/SAQ) (b) Practical (OSPE/OSCE)
(c) Structured Oral Examination (SOE) (d) Clinical Examination

Exam will be shorter version of Final MBBS Examination. **Total marks will be 250.**

Distribution of marks of Final Assessment Exam:

1. WRITTEN	TOTAL 100
a. Formative Assessment	TOTAL 10
i. Surgery & Allied	= 5 marks
ii. Ophthalmology & Otolaryngology	= 5 Marks
b. Written Examination	TOTAL 90
i. Surgery & Allied = (10+35)	= 45 marks
ii. Ophthalmology & Otolaryngology = (10+35)	= 45 marks
2. Practical (OSPE/OSCE)	TOTAL 50
a. Surgery & Allied (6 x 5)	= 30 marks
b. Ophthalmology & Otolaryngology = (4 x 5)	= 20 marks
3. Structured Oral Questions	TOTAL 50
a. Surgery & Allied = (15 +15)	=30marks
b. Ophthalmology & Otolaryngology = (10+10)	=20 marks
4. Clinical	TOTAL 50
a. Surgery & Allied = (15+15)	=30 marks
b. Ophthalmology & Otolaryngology = (10+10)	=20 marks

Format of Final Assessment Exam:

Format		Total marks: 250		Discipline		Mark Distribution
				Surgery & Allied	Ophthalmology & Otolaryngology	
1. Written	Formative	100	10	05	05	Card Finals..... 1 Term Exams..... 1 Class Attendance 75%... 1 Integrated Teaching attendance 75%..... 2
	Written Proper		90	MCQ=10 SAQ= 35	MCQ=10 SAQ= 35	MCQ: Surgery = 5 SBA+ 5 MTF Eye & ENT= 5 SBA+ 5 MTF SAQ/SEQ: Group A & B= Surgery Group C =Eye Group D= ENT
2. Practical (OSPE/OSCE)		50		30	(10+10) =20	Surgery 6 stations 6x5=30 Eye 2 stations 2x5=10 ENT 2 stations 2x5=10
3. Structured Oral Examinations (SOE)		50		30	(10+10) =20	Surgery 2 table 15x2=30 Eye 1 table =10 ENT 1 table =10
4. Clinical		50		30	(10+10) =20	Surgery Short case 2x7.5 = 15 Long case 1x15 = 15 ENT Short case 1x10=10 Eye Short case 1x10=10

NB: In MCQ/SAQ+SEQ

Group A: Surgery: Principles of surgery, GIT, Vascular Diseases, Anaesthesia, Radiology, Radiotherapy, Paediatric surgery, Operative Surgery, Chest disease

Group B: Surgery: HBS & Pancreas, Urology, Breast, Endocrine, Orthopaedics & Traumatology, Neurosurgery

Group C: Ophthalmology

Group D: Otolaryngology

Result:

- a. Marks $<60\%$ = failed.
Will not be eligible to sit for Final MBBS Professional exam.
- b. Marks $\geq 60\%$ = passed,
Eligible to sit for Final MBBS Exam
Carries mark in Formative Assessment in Final MBBS exam.

9. Format of Assessments:

- **In-course/Formative assessment:**
 - Attendance in Lecture/Clinical/Integrated Teaching/Block posting
 - Card Final examinations
 - Term Assessment examinations
 - Final Assessment examination
- **End-course/Summative assessment:**
 - Final MBBS Professional Examination

9.1.0 In-course/Formative Assessment:

9.1.1 Attendance:

- Attendance should be collectively 75% or more in Lecture, Clinical, Integrated Teaching, Block posting
- Attendance will be considered in all forms of In-course/Formative assessment.
- Attendance carries marks in Final MBBS Professional examination.

9.1.2 Card Final Examinations:

General notes:

- Examination will be on Clinical and Structured Oral Questions
- Pass marks: $\geq 60\%$
- Card Final exams clearance is required for eligibility to sit for Term Assessment exams, Final Assessment exam and Final MBBS Professional Exam.
- Result at 1st attempt carries marks in Formative Assessment in Final MBBS Professional Examination

Eligibility:

1. Attendance in clinical class 75% or more
2. Completed item exams in scheduled card

Phase-wise Card examination:

Card final exam	Phase	Item exam covered by	Card final exam date	Exam Place	Exam Tools	Faculty
Card final 1	Phase II	Dept of surgery	2 nd /3 rd last day of clinical placement	Dept of Surgery	Short case, Long Case, viva	Surgery,
Card final 2	Phase III	Dept of Orthopaedics, & Neuro Surgery	2 nd /3 rd last day of clinical placement	Dept of Surgery	Short case, Appliance & imaging Viva	Surgery, Ortho, NeuroS,
Card final 3	Phase IV	Dept of surgery, Orthopaedics, Urology, Paediatric Surgery	2 nd /3 rd last day of clinical placement	Dept of Surgery	Short case, Long Case, viva	Surgery, Urology, Paed Surgery

Note:

1. Item exam to be taken every after 2/3 clinical demonstration classes.
2. In Phase III & Phase IV, Faculty from Surgery Allied Disciplines should attend Card Final exams.

Exam Tools:

Card exam	Stations	Covering discipline	Allocated time	Marks
Card final 1 (Phase II)	Short case:2	Surgery	5x2=10 min	Total marks: 100
	Long case: 1		30 mins (20+10)	15x2=30
	Viva: Single table		10 min	30
Card Final 2 (Phase III)	Short case :2	Surgery :1 Orthopaedics: 1	5x2=10 mins	Total marks: 50
	Viva: Single table	Covering 1. Appliance, X-ray/ CT film: Ortho & NeuroS 2. General Principles of Surgery + Ortho/NeuroS	05 mins	10x2=20
			05 mins	30
Card Final 3 (Phase IV)	Short case: 2	Surgery/Uro: 1 Ortho/Paed :1	5x2=10 min	Total marks: 100
	Long Case: 1	Surgery	30 mins (20+10)	15x2=30
	Viva 2 table	Table 1: Surgery+Ortho	5 min	30
		Table 2: Uro+PaedS	5 min	20

9.1.3 Term Assessment Examination (in Phase II and III)

General Notes:

1. Two Term exams, one in Phase II & another in Phase III.
2. Will be taken at 41st week of the respective phase.
3. Will be written exam only.
4. Term exam clearance is mandatory to appear Phase II & Phase III Final Exam (2nd & 3rd Professional Examinations).
5. Term exam will carry marks in Formative Assessment in Final MBBS Professional exam.

Eligibility:

1. Attendance 75% or more in Lecture, clinical, tutorials in respective Phase.
2. Cleared Card Final Exam.

Phase-wise Term Assessment Exams

Term Exam	Academic Phase	Exam Time	Exam Tools	Exam Marks	Syllabus
Term Exam 1	Phase II	41 st week	Written	50	Items covered in Lecture on general principle of surgery & clinical classes
Term Exam 2	Phase III	41 st week	Written	100	Items covered in Lecture on general principle of surgery, systemic surgery & clinical classes

Exam Tools:

1. Only written exam will be taken.
2. Exam duration 2 hours.

Term exam	Duration	Total marks	Pass marks	Groups in Question paper		Syllabus
Term exam 1	2 hours	50	30	2 groups	Group A	Covers lectures taken on surgical principles
					Group B	Covers items tutorials, demonstrations and learning from clinical placement
Term exam 2	2 hours	100	60	4 groups	Group A	Covers lectures taken on general, systemic & operative surgery
					Group B	Covers lectures & items from clinical placement of Orthopaedics, Neurosurgery, anaesthesia/ Radiotherapy, Paediatric Surgery/urology
					Group C	Covering Lectures & demonstrations from clinical placement of Ophthalmology
					Group D	Covering Lectures & demonstrations from clinical placement of Otolaryngology.

Question Type & marks distribution:

1. Each term has 1 paper exam.
2. In Term 1 exam: there will be one mandatory SEQ which carries 10 marks. Rest will be SAQs each carrying 5 marks. Total marks will be 50.
Group A: 1 SEQ 10 marks, 3 SAQs out of 4 = 15 marks, total 25 marks.
Group B: 5 SAQs out of 6 = 25 marks.
3. In Term 2 exam: there will be Two mandatory SEQs, maximum 1 in one group. Rest will be SAQs. One SEQ from Surgery and another SEQ from Ophthalmology/Otolaryngology. Total marks will be 100.

Each group carries 25 marks.

The mark distribution of the group containing SEQ will be: 1 SEQ: 10 marks, 3 SAQs: $5 \times 3 = 15$ marks. Three SAQs to be answered out of 4.

The groups having SAQs only, carries equal marks in each question. Students have to answer 5 SAQs out of 6. Marks distribution: $5 \times 5 = 25$ marks.

4. Each SAQ will carry 5 marks, in which, marks of the stem can be provided as “1+2+2” or “1.5+1.5+2” etc.

5. Result:

- a. Marks $< 60\%$ = appeared but unsatisfactory.

Will not be eligible to sit for Final MBBS exam (if not reappear in supplementary Term exam).

But get eligibility to appear respective Phase II & III Final Professional exam (2nd & 3rd Professional Examinations).

- b. Marks $\geq 60\%$ = passed,

Eligible to sit for respective Phase Final Professional exam

Eligible to sit for Final MBBS Professional Exam

9.1.4 Final Assessment Examination (in Phase IV)

General Notes:

5. Will be held after completion of Block Posting.
6. Students will get 10 days preparatory leave before Final Assessment Exam.
7. Will be similar to Final Professional Exam.
8. Carry 2 marks in Formative assessment of Final MBBS Exam.

Eligibility:

4. Completed Card exams
5. Attendance 75% or more in Lecture, Clinical classes, Integrated teaching, Block posting.
6. Attendance in Generic topics on Medical Humanities lectures.

Assessment & Evaluation:

Evaluation will be done by

- (a) Written (Formative+ MCQ/SAQ) (b) Practical (OSPE/OSCE)
(c) Structured Oral Examination (SOE) (d) Clinical Examination

Exam will be shorter version of Final MBBS Examination. **Total marks will be 250.**

Distribution of marks of Final Assessment Exam:

5. WRITTEN	TOTAL 100
a. Formative Assessment	TOTAL 10
i. Surgery & Allied	= 5 marks
ii. Ophthalmology & Otolaryngology	= 5 Marks
b. Written Examination	TOTAL 90
i. Surgery & Allied = (10+35)	= 45 marks
ii. Ophthalmology & Otolaryngology = (10+35)	= 45 marks
6. Practical (OSPE/OSCE)	TOTAL 50
a. Surgery & Allied (6 x 5)	= 30 marks
b. Ophthalmology & Otolaryngology = (4 x 5)	= 20 marks
7. Structured Oral Questions	TOTAL 50
a. Surgery & Allied = (15 +15)	=30marks
b. Ophthalmology & Otolaryngology = (10+10)	=20 marks
8. Clinical	TOTAL 50
a. Surgery & Allied = (15+15)	=30 marks
b. Ophthalmology & Otolaryngology = (10+10)	=20 marks

Format of Final Assessment Exam:

Format		Total marks: 250		Discipline		Mark Distribution
				Surgery & Allied	Ophthalmology & Otolaryngology	
1. Written	Formative	100	10	05	05	Card Finals..... 1 Term Exams..... 1 Class Attendance 75%... 1 Integrated Teaching attendance 75%..... 2
	Written Proper		90	MCQ=10 SAQ= 35	MCQ=10 SAQ= 35	MCQ: Surgery = 5 SBA+ 5 MTF Eye & ENT= 5 SBA+ 5 MTF SAQ/SEQ: Group A & B= Surgery Group C =Eye Group D= ENT
2. Practical (OSPE/OSCE)		50		30	(10+10) =20	Surgery 6 stations 6x5=30 Eye 2 stations 2x5=10 ENT 2 stations 2x5=10
3. Structured Oral Examinations (SOE)		50		30	(10+10) =20	Surgery 2 table 15x2=30 Eye 1 table =10 ENT 1 table =10
4. Clinical		50		30	(10+10) =20	Surgery Short case 2x7.5 = 15 Long case 1x15 = 15 ENT Short case 1x10=10 Eye Short case 1x10=10

NB: In MCQ/SAQ+SEQ

Group A: Surgery: Principles of surgery, GIT, Vascular Diseases, Anaesthesia, Radiology, Radiotherapy, Paediatric surgery, Operative Surgery, Chest disease

Group B: Surgery: HBS & Pancreas, Urology, Breast, Endocrine, Orthopaedics & Traumatology, Neurosurgery

Group C: Ophthalmology

Group D: Otolaryngology

Result of Final Assessment Exam:

- c. Marks $<60\%$ = failed.
Will not be eligible to sit for Final MBBS Professional exam.
- d. Marks $\geq 60\%$ = passed,
Eligible to sit for Final MBBS Professional Exam
Carries mark in Formative assessment in Final MBBS Exam

9.2.0 End-course/Summative Assessment: Final MBBS Professional Exam

9.2.1 Eligibility:

1. Completed Card Final exams
2. Term Assessment Exam in Phase II & Phase III
3. Final Assessment exam
4. Attendance 75% or more in Lecture/Clinical/Integrated Teaching/Block posting
5. Attendance in Generic Topics on Medical Humanities.

9.2.2 Assessment & Evaluation:

1. Total marks: 500
2. Evaluation will be done by
 - (a) Written (Formative+ MCQ/SAQ+SEQ)
 - (b) Practical (OSPE/OSCE)
 - (c) Structured Oral Examination (SOE)
 - (d) Clinical Examinations.

Distribution of marks of Final MBBS Exam

1. WRITTEN	Total 200 marks
a. Formative Assessment	Total 20
i. Surgery & Allied	= 10 marks
ii. Ophthalmology & Otolaryngology	= 10 (5+5) Marks
b. Written Proper (MCQ/SAQ+SEQ)	Total 180
i. Surgery & Allied= (20+70)	= 90 marks
ii. Ophthalmology & Otolaryngology= (20+70)	= 90 marks
2. PRACTICAL (OSPE/OSCE)	TOTAL 100
a. Surgery & Allied	= 60 marks
b. Ophthalmology & Otolaryngology = (20+20)	= 40 marks
3. STRUCTURED ORAL EXAMINATION (SOE)	TOTAL 100
a. Surgery & Allied= (30 +30)	=60marks
b. Ophthalmology & Otolaryngology = (20+20)	=40 marks
4. CLINICAL	TOTAL 100
a. Surgery & Allied= (30+30)	=60 marks
b. Ophthalmology & Otolaryngology = (20+20)	=40 marks

9.2.3 Formative Assessment (Internal Assessment):

Marks distribution for formative assessment			
SL		Total marks	Marks scale
1	Attendance in Lecture, Clinical class, Block posting, integrated teaching	1.5	$\geq 75\% = 0.5$ $\geq 80\% = 01$ $\geq 85\% = 1.5$
2	Card completion examination	1.5	At first attempt, 1 card passed= 0.5 2 card passed= 01 3 card passed=1.5
3	Year final assessment (Term I & II) at the end of Phase-II & III	2	Single Term passed=1 Both Term passed=2 Both Term Failed= 00
4	Final Assessment Exam Phase IV	2	$\geq 60\% = 1$ $\geq 75\% = 2$
5	MCQ/ Assessment submission on Integrated teaching.	3	<ul style="list-style-type: none"> • Attendance $\geq 75\% = 1$ • Attendance + Assessment submission $\geq 50\% = 2$ • Attendance + Assessment submission $\geq 75\% = 3$

9.2.4 Tabulation Sheet for Formative Assessment

Roll no.		Attendance				Card completion				Term assessment			Final Assessment		Integrated teaching		Grand Total	
		A. $\geq 85\%$ (1.5 marks)				at 1 st attempt A. 3 card passed= 1.5				A. Both Term passed= 2			A. $\geq 75\%$ = 2		A. Attendance + Assessment submission $\geq 75\%$ = 3			
		B. $\geq 80\%$ (1 mark)				B. 2 card passed= 01				B. Single Term passed=1			B. $\geq 60\%$ = 1		B. Attendance + Assessment submission $\geq 50\%$ = 2			
		C. $\geq 75\%$ (0.5 marks)				C. 1 card passed=0.5				C. Both Term failed= 0					C. Attendance only = 1			
		Performance			Marks	Performance			Marks	Performance		Marks	Performance		Marks			
		Phase II	Phase III	Phase IV		Card 1	Card 2	Card 3		Term 1	Term 2							
Class Roll	Prof. Roll																	
1234	5678																	

9.2.5 Final MBBS Written Examination:

Examination to be held in two papers: Paper I and Paper II.

Paper I: Surgery and allied, and Orthopaedics

Paper II: Ophthalmology and Otolaryngology

Total marks: 180

Paper I – 90 [MCQ- 20 (10 SBA and 10 MTF) SAQ & SEQ=70 marks]

Paper II – 90 [MCQ- 20 (10 SBA and 10 MTF) SAQ & SEQ=70 marks]

Time allocation: MCQ- 30 minutes; SAQ+SEQ – 02 hrs 30 minutes.

Construction of Question Paper:

- a. Paper – I
SAQ & SEQ consists of 4 groups
 - Group -1: - Principles of surgery, Vascular Diseases, Anaesthesia, Radiology, Radiotherapy.
 - Group -2: - GIT, Paediatric surgery, Operative Surgery, Chest disease
 - Group -3: - HBS & Pancreas, Urology, Breast, Endocrine.
 - Group -4: - Orthopaedics & Traumatology, Neurosurgery,

- b. Paper –II:
SAQ & SEQ consists of 4 groups
 - Group-1 and Group 2 = Ophthalmology [MCQ-10 (5 SBA, 5 MTF) & SAQ & SEQ -35]
 - Group-3 and Group 4 = Otolaryngology [MCQ-10 (5 SBA, 5 MTF) & SAQ & SEQ -35]

Instructions:

- Each paper will consist of two Structured Essay Questions (SEQs) and the rest will be Short Answer Questions (SAQs). One group will not contain more than 1 SEQ.
- Each group carries 17.5 marks.
- SEQs are compulsory and SAQs will have options.
- The mark distribution of the group containing SEQ will be: 1 SEQ: 7 marks, 3 SAQs: 3.5 x3 = 10.5 marks. Three SAQs to be answered out of 4.
- The groups having SAQs only carries equal marks in each question. Students have to answer 5 SAQs out of 6. Marks distribution: 3.5 x 5 = 17.5 marks.

- Preferably questions will be of:
 - Recall type- 30%
 - Understanding or data interpretation type- 30%
 - Problem solving type- 40%
- Question should cover the whole curriculum
- 90% of the questions should preferably be from core content
- 10% from additional content of course

Scripts distribution: Paper I

Group - 1: will be assessed by General surgeon,

Group - 2: will be assessed by General surgeon

Group - 3: will be assessed by a General surgeon/allied subject expert

Group - 4: will be assessed by an Orthopaedic surgeon.

Paper II

Group 1 and 2: will be assessed by Ophthalmologists

Group 3 and 4: will be assessed by Otolaryngologists

9.2.6 Practical Examination (OSPE/OSCE):

- Stations will be constructed centrally by two experienced examiners nominated and supervised by chairman of the examination committee of the respective university.
- Each station will be of 5 minutes time and marks will be allocated according to rules mentioned in the subject concerned.
- All the examinees under each university will appear in OSCE/OSPE exam in their designated centers on a same date and before 9 am scheduled by University for a particular subject. Failure to arrive at examination center before 9 am is an offense and examiner may disqualify the candidate.
- OSPE examination of Surgery, Ophthalmology and ENT will be on two different days.
- Answer scripts of OSPE will be divided among the examiners for evaluation and the marks are to be submitted prior to final day of the oral examination scheduled in the respective centre.
- Every examination center should be prepared for testing competencies including different procedure stations, data analysis, counseling, displaying x-ray, specimens and instruments. Original materials should be placed at each station.
- Station setup
 1. Total 20 stations will be made comprising 10 from Surgery,
 2. Five (5) Ophthalmology and
 3. Five (5) ENT stations.

Out of those, at least two stations from surgery, one from Ophthalmology and one from ENT will be procedural station.

OSPE Station Setup and Marks Distribution				
PAPER	Total marks	TOTAL STATION	Marks Allocation	Station distribution
Paper 1 Surgery & allied	60	10	10x6= 60	Station 1: Plain Xray Station 2: Contrast Xray Station 3: Orthopaedic Xray Station 4: Specimen Station 5: Instruments Station 6: Appliances Station 7: Data interpretation Station 8: Procedure 1 Station 9: Procedure 2 Station 10: Splint/ bandage
Paper 2 Ophthalmology & Otolaryngology	40	10 Ophth 5 Otolaryn 5	10x4= 40	Station 1: Ophth: instruments Station 2: Ophth: Xray Station 3: Ophth: specimen Station 4: Ophth: clinical photograph/tracing Station 5: Ophth: procedure Station 6: Otolaryn: instruments Station 7: Otolaryn: Xray Station 8: Otolaryn: specimen Station 9: Otolaryn: clinical photograph/tracing Station 10: Otolaryn: procedure

9.2.7 Structured Oral examination (SOE)

General Notes:

Oral & Practical Examination Boards of **Surgery & Allied Subjects**: Eight (8) Examiners in 4 boards in two days.

Day -1:

- Board A -1 examiner from General Surgery & 1 examiner from Allied subjects
- Board B -1 examiner from General Surgery & 1 examiner from Orthopaedics

Day-2:

- Board-A -1 examiner from Ophthalmology & 1 examiner from Ophthalmology
- Board-B -1 examiner from ENT & 1 examiner from ENT

NB: In case of unavailability of any concerned examiner of any board the convener of the examiner in consultation with concerned dean of the faculty of medicine will select the examiner from General surgery or sub specialty or any allied subject

Instructions for Paper I:

- a. Two separate boards comprising one internal and one external examiner will assess written scripts, oral, practical and clinical examination.
- b. Marks allocated will be $30 \times 2 = 60$ marks.
- b. Out of four examiners two will be from general surgery, one will be an orthopaedician & another one will be from allied subjects of surgery.
- c. There should be two other reserve examiners in each internal and external pool. One of the reserve examiners should be from allied subjects like urology, pediatric surgery, plastic surgery or neurosurgery.

d. Question Setting:

- There will be four boxes covering questions on surgery and allied specialties assigned for each examiner.
- Each box will contain at least 20 sets of questions.
- A set of question will contain 3 small questions of three-difficulty level (Must Know, Better to Know & Nice to Know)

- Content of the box-
 - Box-1: - Principles of surgery, Vascular Diseases, Anaesthesia, Radiology, Radiotherapy.
 - Box-2: - GIT, Paediatric surgery, Operative Surgery, Chest disease
 - Box-3: - HBS & Pancreas, Urology, Breast, Endocrine.
 - Box-4: - Orthopaedics & Traumatology, Neurosurgery.

Instructions for Paper –II (Ophthalmology and ENT):

- a. Two separate boards for each specialty comprising one internal and one external examiner will assess written scripts, oral, practical and clinical examination.
- b. Marks allocated will be 20x2=40 marks.
- c. There will be one reserve examiner in each specialty.
- d. Each student will be allocated 15 minutes.
- e. Problem solving skills / Judgment of knowledge should be examined
- f. Instruments and x-rays will not be examined in viva board
- g. Question setting
 - The question and answer will be constructed by the examiners in advance
 - Question is typed in a card and put in box of defined domain
 - A number of questions from each topic should be constructed covering the content area.
 - Content will be changed on alternate days
 - The candidate randomly selects one card from each box and answers.
 - The candidate should answer selected number of questions in the board
 - The examiner reads the question, repeats it if necessary or the candidate reads the question if allowed.
 - When candidate answers the questions, the examiner will put a tick in the appropriate site on a prepared rating scale.

Structured Oral Examination (SOE)					
Paper	Board	Board examiners (discipline)	Marks	Time (mins)	Contents of the question box
I	Board A	Examiner 1: General Surgery	30	7.5 mins	Box 1: Principles of surgery, Vascular Diseases, Anaesthesia, Radiology, Radiotherapy.
		Examiner 2: Allied subjects			Box 2: GIT, Paediatric surgery, Operative Surgery, Chest disease
	Board B	Examiner 1: General Surgery	30	7.5 mins	Box 3: HBS & Pancreas, Urology, Breast, Endocrine.
		Examiner 2: Orthopaedics			Box 4: Orthopaedics & Traumatology, Neurosurgery
II	Ophthalmology	Both examiners from ophthalmology	20	7.5 mins	Questions will be typed in a card and put in a box of Ophthalmology
	Otolaryngology	Both examiners from Otolaryngology	20	7.5 mins	Questions will be typed in a card and put in a box of Otolaryngology

9.2.8 Clinical Examination of Surgery

General notes:

a. Marks distribution

- Surgery - 60
 - Short cases - $3 \times 10 = 30$
 - One Long case - 30.
- Ophthalmology cases - $2 \times 10 = 20$
- ENT cases - $2 \times 10 = 20$

b. For a particular examinee, examiners should be changed for long and short cases.

c. Time allocation:

- Short case: $6 \times 3 = 18$ mins
- Long case: 30 mins (History preparation: 20 mins, Examiners question answering: 10 mins)
- Ophthalmology cases: $6 \times 2 = 12$ mins
- Otolaryngology cases: $6 \times 2 = 12$ mins

Clinical Examination				
Paper	Cases	No. of cases	Marks	Time allocated
Paper I				
Surgery + Allied & Orthopaedics	Short case	3	$3 \times 10 = 30$	$3 \times 6 = 18$ mins
	Long case	1	30	$20 + 10 = 30$ mins
Paper II				
Ophthalmology	Short case	2	$2 \times 10 = 20$ marks	$6 \times 2 = 12$ mins
Otolaryngology	Short case	2	$2 \times 10 = 20$ marks	$6 \times 2 = 12$ mins

**9.2.9 At a glance,
Mark distribution of Oral, Clinical and Practical examination in Surgery in
Final MBBS Professional Examination**

Subject	Oral	Practical/OSPE	Clinical	Total
Surgery + Allied & Orthopaedics	30+30	60	30+30	180
Ophthalmology	20	20	20	60
ENT	20	20	20	60
Total	100	100	100	300

- There will be separate Answer Script for MCQ (SBA & MTF) and written SAQ & SEQ assessment.
- Pass marks is 60 % in EACH of Written, Oral, Practical and Clinical components.
- Practical Examination will be in 2 days, One day Surgery, One day Eye-ENT
- Oral + Clinical will be in 2 days, One day- Surgery, another day- Ophthalmology + ENT.
- Marks and Written examination Answer scripts must be returned before last day of oral-clinical examination at respective examination center. Otherwise, convener of the center will return the whole scripts to Dean office for final decision.
- For declaration of results in earliest possible time after compilation of marks quick disposal of marks to competent authority is desirable