Bachelor of Medicine & Bachelor of Surgery (MBBS) Curriculum in Bangladesh

Bangladesh Medical & Dental Council (BM&DC)
203, Shaheed Sayed Nazrul Islam Sarani (86, Bijoy Nagar), Dhaka-1000
www.bmdc.org.bd

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Surgery & Allied Subjects

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

List of Competencies to acquire:

1. **Clinical –**
   a. rapport building with patients, relatives, colleagues, health care professionals and supporting staffs of the hospital
   b. take detail 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
2. **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
3. **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.

4. **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 dressings

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/Bedside teaching (in weeks)			Total weeks	Block posting (in weeks)	Formative examination (in days)		Summative examination (in days)	
	2nd Phase	3rd Phase	4th Phase	Total	PBL, Practical demonstration , Instrumental demonstration, Skill lab, Tutorial & etc.			2nd Phase	3rd Phase	4th Phase						
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					
Transfusion medicine	-	03	-	03				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	327				134	22	126 hrs	21	15	24	60 wks	04 wks	25 days		40 days	
Grand Total	**483 hours**						**126 hrs**	**64 weeks**					**65 days**			
Time for integrated teaching, examination preparatory leave and formative & summative assessment is common for all subjects of the phase																
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																

Surgery & Allied Subjects: Hours 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 {(2nd phase wks + 3rd phase wks + 4th phase wks = Total three phases wks) × (6 days × 4 or 2 hours)}
	2nd Phase		3rd Phase		4th 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)
Transfusion medicine	12 h (1w)	-	-	-	-	-	12 h	(1+0+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	**252 hrs**	**216 hrs**	**180 hrs**	**168 hrs**	**288 hrs**	**288 hrs**	**1392 hrs**	**60 weeks**

Teaching-learning methods, teaching aids and evaluation

Teaching Methods				Teaching aids	In course evaluation/ Formative
Large group	**Small group teaching**	**Self learning**	**Others**		
Lectures	Tutorials, Problem Based Learning, Clinical demonstrations OPD / indoor attending & observing minor operations Demonstrations of X-rays specimen, Observations in ICU, Postoperative ward, Case Presentation and discussion. Skill lab practice	Assignment, Self study	Integrated teaching, Visit to radiotherapy Attend centers where investigations for hearing impairment, vertigo, Tinnitus are available.	Computer, Chalk & board, OHP, Multimedia, Photographs &Videos, Specimens, & Models, Plain & Contrast X-rays of Upper & lower GIT, I.V.U, Fractures Skull X-rays Sinogram & Fistulogram Ultrasonogrphy, Abdomen HBS & Pancreas Urinary tract Scans, thyroid scans, C.T. Scan, MRI, PET Scan, Bone scan, Doppler and duplex imaging. Immunohistochemistry	Item Examination Card final, Term Examination Term final (written, oral+ practical + clinical) Marks distribution: a) Surgery— I. Card final-3 II. Term Final-2 III. MCQ of Integrated teaching-5 b) Ophthal- 5 c) ENTD-5

Final professional Examinations:

Marks distribution for assessment of surgery

Total marks Surgery and allied Subjects – 500

- Written = 200 (Formative Assessment-20 +(MCQ- SBA & MTF) 40+ (SAQ +SEQ) 140 =200)
- Structured Oral = 100 (60+20+20)
- Clinical = 100 (60+20+20)
- Practical (OSPE/OSCE) = 100 (60+20+20)

Total in Surgery and allied---500.

Related Equipments:

General surgery	**Materials**
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, Bi-channel d. Sharps- BP blade and handle, surgical scissors, Needle holder, Surgical suture materials, Gloves, gown, mask, caps, surgical goggles e. 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, f. Retractors—Deavers, abdominal, Morris abdominal retractor, Langhanbach's retractor,	g. Special-Lane's twin gastro jejunostomy clamp, proctoscope, metalic urethral dilators, nephrolithotomy forceps, Bone nibbler, Osteotome, chisel, hammer, amputation saw, SPC set, CV line set, Spinal needle, h. Orthopedic--Plaster of Paris bandage, crepe bandage, Splints supporting aids- Cervical collar, Circle brace, artificial limb, i. Anesthesia- machine, Laryngoscope, airway tube, Umbo bag, pulse oximetry, Digital Thermometer, Oxygen cylinder with devices (These equipment may be used in OSPE procedure stations)
ENTD	
Thudicum nasal speculum, Killians self retaining nasal speculum, Lichwitz antrum puncture trocar and cannula, Higginson's rubber syringe, Walsham's forceps, Luc's forceps, Tilleys forceps, St Clair Thomson post nasal mirror, Jobson horne probe and ring curette, Tuning fork, Head mirror,	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.
Ophthalmology	
Trial lens, trial frame, Eye speculums (Wire, Universal), DCR punch, Tonometer, Ophthalmoscope, Cat's paw retractor, BP Blade & handle, Keratome, Squint hook	Iris repositor, lens dialer, two way cannula, chalazion clamp and scoop, corneal forceps, irrigating vectis, sac guard, sac dissector, lacrimal probe, punctum dialtor etc.

Learning Objectives and Course Contents in Surgery

Learning Objectives	Contents	Teaching Hours
A. Basic and Principles of Surgery Student should be able to: 1. state the history , evolution and scope of Surgery 2. assess and prepare patient for surgery 3. understand the patho-physiology 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	***CORE*** ***Phase II*** 1. History, evolution and scope of surgery 2. Approach to a surgical patients 3. Surgical diagnostic process and techniques 4. Surgical Infection (Boil , Furuncle, Abscess, Carbuncle , cellulites) 5. Septicemia (causes, complications and treatment) 6. Sinus, Fistula and cysts 7. Wounds (classification and management) 8. Ulcers , pressure sores 9. Groin hernias 10. Haemorrhage 11. Shock ***Phase III*** 12. Metabolic response to injury 13. Principles of Management of Trauma 14. Management of a severely injured patient 15. Fluid and electrolytes balance 16. Enteral and Parenteral nutrition ***Phase IV*** 17. Pre operative assessment and preparation 18. Tumours of skin 19. Lymphadenopathy (causes, investigations, diagnosis, biopsy) 20. Surgical ethics ***ADDITIONAL*** Organ transplantation, Robotics in surgery	20 hours 10 hours 10 hours

Learning Objectives	Contents	Teaching Hours
B. Systemic Surgery ***1. Alimentary System*** Student should be able to : 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. recognise post operative complications & take appropriate measures.	**CORE** **Phase II** Complications of Peptic ulcer (Perforation, Pyloric stenosis) Upper G.I. Tract bleeding Appendicitis Intestinal obstruction; **Phase III** Abdominal trauma (Diagnostic and Management principles) Ruptured Spleen Ruptured liver Ruptured intestine **Phase IV** 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) **ADDITIONAL** Intra abdominal abscess Diseases of salivary glands Hiatus hernia.	5 hours 5 hours 5 hours

Learning Objectives	Contents	Teaching Hours
2. Genito-Urinary System Student should be able to- 1. diagnose common congenital G.U. anomalies & advise / refer to appropriate centers 2. diagnose and manage acute GU conditions like • Acute retention of urine • Acute epidedymo- 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	**CORE** ***Phase III*** 1. Urinary symptoms & definitions 2. Urological investigations and their interpretations, 2. Developmental genito-urinary anomalies 3. Scrotal swelling • Hydrocele • Scrotal cellulitis 4. Acute scrotal conditions • Epididymo- orchitis • Torsion testis ***Phase IV*** 5 Urolithiasis (Causes ,Diagnosis , Principles and modalities of treatment) 6 Retention of urine (acute and chronic 7 Hydronephrosis 8 UTI 9 Urinary tract injury. • Renal injury • Urethral injury 10. Renal Neoplasm • RCC • Wilm's Tumour 11 Testicular Tumour 12 BPH 13 Stricture urethra ***<u>ADDITIONAL</u>*** • Male infertility • Minimal Invasive Surgery in Urology	20 hours 10 hours

Learning Objectives	Contents	Teaching Hours
3 Hepatobiliary & Pancreas Student will be able to: 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.	**CORE** **Phase II** Cholelithiasis (causes and complications) Cholecystitis (acute & chronic) Pancreatitis (acute pancreatitis) **Phase IV** Obstructive jaundice Pancreatic tumours Liver abscess **ADDITIONAL** Hepatic neoplasm Cysts of liver Neoplasm of Gall Bladder	5 hours 5 hours 4 hours
4 Endocrine & Breast Students will be able to: 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.	**CORE** **Phase IV** ***Thyroid*** Goitre and Neoplasms of thyroid ***Breast*** Breast pain, Mastitis and Breast Abscess Fibro-adenosis and Fibroadenoma Carcinoma of breast **ADDITIONAL** Diseases of adrenal gland Diseases of Parathyroid gland	4 hours 4 hours 2 hours

Learning Objectives	Contents	Teaching Hours
5 Chest Students will be able to: • assess & diagnose traumatic haemopneumo-thorax, associated injuries & introduce water seal drain in appropriate case.	**CORE** ***Phase IV*** Chest injury (Haemothorax, Pneumothorax) Chest tumours, Chest drain, **ADDITIONAL** Dysphagia Empyaema thoracis	3 hours
6. Cardio-vascular System Students will be able to: 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 ***7. Plastic & Reconstructive*** Students will be able to 1. manage Burn patient and minimize their complications 2. take any major wound care 3. suggest measures for con. External deformity & disfiguration	**CORE** ***Phase III*** Vaso occlusive disorders Atherosclerosis, Buerger's disease Varicose vein Thrombophlebitis Deep vein thrombosis **ADDITIONAL** Pulmonary embolism Angioplasty, CABG and cardiac surgery **Core** ***Phase IV*** Burn (Causes, complications and management) Skin grafting Skin tumours, Special area burn , Inhalation and electric burn	5 hours 5 hours

Learning Objectives	Contents	Teaching Hours
8. Neuro surgery Students will be able to: 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 neuro surgical cases.	**CORE** **Phase IV** Head injury ICSOL PLID Paraplegia/hemiplagia **ADDITIONAL** Hydro cephalus Tumours of brain Tumours of spinal cord	5 hours
9. Operative Surgery Student should be able to perform: 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	**CORE** **Phase III** Principles of Asepsis & Antisepsis Pre-operative assessment & preparation Venus access Cricumcision Operation for hydrocele Repair of D.U perforation Wound care ***Tutorials*** Universal precautions (Scrubbing , gloving & gowning) O.T. environment & behavior Preoperative skin preparation and draping Suturing materials ,Stitches	5 hours 5 hours

Learning Objectives	Contents	Teaching hours
Student should be able to : • assist in common major operations & take post operative care	**Phase IV** Common Abdominal incision Operation for inguinal hernia Drainage of abscesses Catheterisation , Supra-pubic cystostomy Anastomosis Appendicectomy Cholecystectomy Gastrojejunostomy Basic principles of Laparoscopy. **Additional** Thyroidectomy, Nephrectomy, Mastectomy / Prostatectomy	10 hours
10. Orthopedic Surgery Student should be able to: • apply ATLS protocol to provide resuscitation of polytrauma patient . • manage simple and undisplaced factures • demonstrate skill in wound excision of open fractures . • demonstrate skill in: ▪ application of splints, slings , traction. ▪ application of plaster slab and cast ▪ manipulative reduction of common fracture and dislocation. ▪ aseptic technique of joint fluid aspration . • diagnose and outline treatment for acute osteomylities and septic arthritis • identify patient for referral to appropriate centre • demonstrate knowledge and understanding of the basic principle of physiotherapy and rehabilitation.	**CORE** ***Phase III*** **a) General Orthopedics** • Introduction to orthopaedics • Hard tissue trauma :- - Fracture classification - Principal of management of open and closed facture - Fracture healing –nonuninon, malunion, delayed union. • Infection of bone (Acute and chronic osteomyelitis) ***Phase III*** **b) Regional orthopedics** 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	5 hours 10 hours

Learning Objectives	Contents	Teaching Hours
	Phase IV **Regional Orthopaedics** • Upper Limb Hand injuries and Hand Infection • Lower Limb Frac ture of Neck of femur Fracture of Pelvis Ankle and foot injuries Amputations Additional Dislocation – Hip, Haemarthosis • Soft tissue trauma (muscle and tendon injuries, compartmental syndrome) . • Infection of joint including osteoarticular tuberculosis • Mass Casualty- ATLS, Disaster management. • Bone tuberculosis **Additional** Dislocation of shoulder and elbow b) Paediatric orthopedics : Congenital anomalies-talipes, DDH, Bow legs, Polydactyly, Claw c) Bone tumors : Classification of bone tumor Common benign and malignant bone tumor – osteochondroma, Giant cell tumor, Osteosarcoma, Metastatic bone tumor. Vertebral fracture – (primary management, transportation. Principles of definitive management) **Additional** d) Tendinitis, Tenosynovitis, bursitis.	45 hrs

Learning Objectives	Contents	Teaching Hours
11. Anaesthesiology Student should be able to : • 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. **Practical Skills** Student should be able to perform : • pre-operative assessment • induction • intubation • I/V line • artificial ventilation • post-operative room care	***Phase III*** **CORE** 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 GAnes (G.A) f) Local/Regional anesthesia g) Management of Pain (chronic) h) Intensive Care Unit (ICU) i) Basic life support. j) Cardio-Pulmonary Resuscitation (CPR) **Exposure to practical procedures** (Tutorial) : • Pre-operative assessment • Induction • Endo tracheal Intubation • CV line • Artificial ventilation • Face mask ventilation. • Recovery room experience	10 hours

Learning Objectives	Contents	Teaching Hours
12. Radio Diagnosis & 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	**CORE** **Phase IV** • 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 **CORE:** • Normal and pathological image • Pneumonic and Tuberculous consolidation • Pleural effusion • Pneumo Thorax **Additional** • Lung abscess • Mediastinal mass	6 hours 2 hours

Learning Objectives	Contents	Teaching Hours
Gastro intestinal system Student should be able to : • diagnose intestinal obstruction, perforation etc. • recognise 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.	**Core:** • Plain X-ray findings of Acute abdomen. • Indications & contraindicatious for barium studies. Hepatobiliary system Cholangiogram & ERCP • USG of HBS and Pancreas **Additional:** MRCP	
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.	**CORE** • 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 **CORE** • X-ray KUB & IVU • USG of Kidney, Ureter , Bladder and prostate	

Learning Objectives	Contents	Teaching Hours
13. Radiotherapy Students will be able to: • 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 Students will be able to: • recognise common cytotoxic drugs. • refer appropriate cases for chemotherapy. • recognise common complication & offer primary care.	***Phase IV*** **CORE** ***Introduction to Radiotherapy*** **Radiation oncology, basic principles and practices :** • 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. **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	5 hours

Learning Objectives	Contents	Teaching Hours
Students will be able to: • 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. • recognise clinical condition as which could be diagnosed by radio-isotope & interpret the results. • recognise diseases requiring isotope therapy.	**Prevention of common cancer :** • Primary prevention, Secondary prevention • Early diagnosis • Referral to appropriate centre **Palliative support and terminal care :** • Follow-up of cancer patients and terminal care **Nuclear Medicine, basic Principles and practice :** • Radio-isotope in diagnosis • Radio-isotope in therapy	1 hour 1 hour 1 hour

Learning Objectives	Contents	Teaching Hours
14. Paediatric Surgery Students will be able to: • identity common paediatric surgical problems including emergencies. • initiate primary care • refer the cases to appropriate hospital	**CORE** **Phase III** • Examination of a child and neonate (Special considerations) • Infantile Inguino scrotal swellings • Acute abdomen in infants & children • Congenital hypertrophic pyloric stenosis **Phase IV** • Neonatal/Infantile intestinal obstruction • Intussusception • Anorectal malformations. • Maldescended Testis • Torsion Testis • Haemangioma and other Cutaneous lesions • Child-hood tumours. • Rectal bleeding and prolapsed rectum **Tutorials** • Cystic hygroma, Branchial fistula • Phimosis/balanitis • Paraphimosis • Phimosis/balanitis • Paraphimosis	5 hours 10 hours

Appendix-1

COLLEGE MONOGRAM

Photograph of the student

CLASS PERFORMANCE RECORD CARD

DEPARTMENT OF SURGREY

---------- Medical College

Bangladesh.

Name of the student: .....

Father's Name: ……Mother's Name……

Address: -- Village/road with no……

P.O: ……P.S: ……..Dist: …….

Postal Code no…….Country: …….

Telephone No: ……..Mobile No: ……..

Batch..... Roll No: ..... Admission Session.....

Local Address: ..... ……..

Hostel:-……. Room No: .....

Year of admission in 1st year MBBS.....

Promoted to 3rd year: Jan/ July - Year.....

2nd Professional examination due in- Jan/ July- Year.....

2nd professional passed on Jan/July-Year……

3rd Professional due on Jan/July, Year----------

3rd Professional Passed on Jan/July----------

Final Professional examination due in- Jan/ July- Year.....

For foreign students

Citizenship: .....Passport no……

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 • Lumps in different quadrants. • Gastric outlet obstruction b) Hepato biliary conditions c) Pancreatic conditions			
7.	Examination of acute abdominal conditions • Acute Appendicitis • Perforation of the hollow viscus • Acute Pancreatitis • Intestinal obstruction			
8.	Short cases in out patient clinics • 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

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

Cl. Reg. No.	
Roll N0.	
Group	
Batch	

Card no.	2 (Two)-A
Year	4th 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 BoneTumours and Ostemyelitis Common Orthopaedic I**nstruments**			
	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 Orthopeadics/Unit Chief

Registrar (Ortho Unit-)

ORTHOPAEDIC & TRAUMATOLOGY

Cl. Reg. No.	
Roll No.	
Group	
Batch	

Card No.	2 (Two)-B
Year	5th 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 Ostemyelitis & others Common Orthopaedic I**nstruments**			
	TUTORIAL			
1	Bone tumours& Osteomyelitis			
2	Children fractures& Compart ment 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 • Lymph Nodes • Thyroid • Thyro glossal Cyst			
2.	Examination of extremities for peripheral vascular conditions			
3.	Examination of chronic abdominal conditions. (5 cases) a) G.I. tract condition • Lumps in different quadrants. • Gastric outlet obstruction • Ascitis b) Hepato biliary conditions c) Pancreatic conditions			
4.	Examination of acute abdominal conditions • 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 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			

9.	**PAEDIATRIC SURGERY (2 WK)** Examination of Paediatric surgical cases • Anorectal malformation • Hernias • Urogenital malformations • Congenital Hypertrophic Pyeloric stenosis • Cleft lip, palate. • Haemangioma, Cystic Hygroma, Branchial cyst • Neonatal Intestinal obstruction			
10.	Short cases in out patient clinics • 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, Parentral 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

Ophthalmology

Departmental Objectives

The objective of this course is to provide need-based education so as to produce a quality doctor who will be able to

- deal with common ocular ailments
- identify, give initial management & refer ocular emergency cases appropriately
- provide leadership in the sphere of primary eye care in the country as well as abroad.

To achieve the above mentioned departmental objectives, the following learning objectives will be required:

List of Competencies to acquire:

1. Measure visual acuity of adult and children, a. unaided b. with pin hole c. with glass;
2. Examine color vision & examination of visual field (confrontation method)
3. Examine ocular movement and alignment; assessment of pupillary light reflex (direct and consensual)
4. Perform direct ophthalmoscopy.
5. Perform digital tonometry.
6. Perform Regurgitation test of lacrimal sac.
7. Perform Fluorescein dye test, irrigation of conjunctival sac & installation of eye drops/ointment.
8. Perform eversion of upper lid & removal of conjunctival foreign body.
9. Diagnose and give treatment of bacterial conjunctivitis, vitamin A deficiency disease (night blindness, Bittot's spot, xerophthalmia), initiate treatment of minor trauma, correction of simple presbyopia and referral of difficult cases.
10. Diagnose and initiate treatment and referral of ocular emergency cases:
    a. trauma, b. painful red eye. c. corneal ulcer/keratits, d. corneal foreign body, e. acute dacryocystits.
11. Diagnose and referral for specialist management: cataract, chalazion, pterygium, leucocoria of children, squint, cases with reduced vision

Fundamentals and principles of ophthalmology

Goal: The students will have the overall understanding of external and internal ocular structures of the normal human eye and will be able to perform the eye examination in normal and disease conditions.

Topic Specific objectives:

At the end of the teaching of the course the students will be able to:

- describe normal ocular anatomy.
- obtain detail ocular history.
- measure and record visual acuity in adults and children.
- assess pupillary reflexes.
- evaluate ocular motility.
- use the direct ophthalmoscope for gross assessment of red reflex, the optic disc and fundus examination.
- perform and evaluate visual fields by confrontation.

Specific contents in this subject will include:

A. Ocular Anatomy.

Students should be able to define gross anatomy of the eyeball& adnexa

1. Eyelids.
2. Extraocular muscles.
3. Lacrimal apparatus
4. Conjunctiva.
5. Cornea
6. Sclera.
7. Anterior chamber
8. Iris
9. Pupil.
10. Lens
11. Ciliary body
12. Posterior chamber
13. Vitreous cavity.
14. Retina
15. Optic disc.
16. Macula.
17. Choroid.
18. Optic nerve.

Learning Objectives

A. Knowledge components:

Students will be able to describe:

1. basic ocular anatomy
2. concept of measuring visual acuity without correction ,with pinhole and with correction
3. the importance of assessing ocular motility in the six cardinal positions of gaze and ocular alignment in primary position
4. the basic function of ophthalmoscope
5. importance of dilatation of pupil for fundus examination
6. abnormal fundal appearance in diabetic and hypertensive retinopathy
7. the concept of measuring intraocular pressure
8. the technique of determining the peripheral visual field by confrontation method
9. referral guideline

B. Skill Components:

At the end of the course, the students will able to demonstrate the skill of:

1. examination of each eye individually.
2. test V/A each eye individually and with pinhole.
3. evaluation of the position of the lids, and inspection of the conjunctiva, sclera, cornea and iris with a penlight.
4. examination of the pupil and assessment of the pupillary reaction.
5. ocular motility test in six positions and cover test
6. manual sac regurgitation test
7. assessment of intraocular pressure by digital method
8. performing visual field assessment by confrontation method
9. eversion of the upper lid and examine for the presence of foreign bodies
10. fluorescein dye test and its interpretation.
11. performing direct ophthalmoscopy and identify structures eg. optic disc, macula, and major vessels.

C. Attitude component:

Students will show continuous interest in gaining information in the subject and at the end of the teaching; they will be able to demonstrate the following:

a. A patient-centered role:
b. Scientific Integrity:
c. Ethical medical Professional Behavior:
d. Dedication to Continuous Learning:

Learning will be facilitated by:

Active participation in the

a. Classroom discussion
b. Completion of assignments
c. Formal presentations in tutorials.
d. Self-initiated independent thinking, presentation skill.

Evaluation:

Students will be evaluated by

a. Written examination(Short Essay test and MCQ test)
b. Formal and informal observations by instructor
c. Terms examinations
d. Final assessment together with other topics in the final Professional MBBS examination.
e. Class and ward attendance

Remediation during training:

1. The course coordinator will review the student's performance and will:
    i. Identify any specific deficits
    ii. Document all areas requiring remediation or additional concentration.
    iii. Provide additional recommendations for remediation of specific lackings.

Method of teaching:

a. Didactic lecture
b. In-class group session
c. Clinical class in the hospital out-patient, in-patient and Operation Theatre settings
d. Problem based discussion.

Materials

Models, power point presentation will be provided and students will get copies of handout whenever available.

Learning Objectives and Course Contents in ophthalmology

Learning Objectives	Contents	Teaching Hours
Student will be able to: 1. describe the anatomy of orbit and its contents 2. describe gross anatomy of the extra ocular muscles 3. diagnose orbital cellulitis, proptosis, squint /deviation and asymmetry and refer to specialist care 4. list the conditions for further referral to specialist care	**Orbit:** **1. Gross Anatomy:** a. Bones of the orbit constituting walls, roof and floor b. Contents of the orbit **2. Clinical examination of orbital disease:** **3. Orbital diseases:** a. Orbital cellulitis b. Proptosis	2 hrs
Students will be able to 1. describe gross anatomy of the lid 2. describe surgical steps of chalazion operation. 3. demonstrate the skill of step wise clinical examination, 4. describe diagnosis and treatment procedure of the followings; Stye, chalazion and blepharitis. 5. identify and refer the following: Trichiasis, ptosis, ectropion, entropion, chalazion 6. perform eversion of the lid.	**Eye lids:** **1. Gross Anatomy of the eye lid & its disease** **2. Clinical Examination procedure** a. Corneal light reflex & palpebral fissure height b. Visual inspection of eyelids and periocular area. **3. Diseases of Lid** a. Malpositions.(definitions) i. Trichiasis ii. Ptosis iii. Ectropion iv. Entropion. b. Inflamations. i. Stye ii. Chalazion iii. Blepharitis iv. Internal hordeolum	2 hrs

Learning objectives	Contents	Teaching Hours
Students will be able to : 1. describe gross anatomy of conjunctiva 2. name diseases of the conjunctiva 3. describe surgical steps of pterygium operation. 4. examine the conjunctiva 5. diagnose and manage of viral, bacterial, allergic conjunctivitis & ophthalmia Neonatorum 6. diagnose pterygium and refer for surgical management 7. remove superficial conjunctival foreign body	**Conjunctiva:** **1. Gross Anatomy of the Conjunctiva & its diseases:** **2. Examination procedure for conjunctiva** **3.Disease of conjunctiva**: a. Conjunctivitis - Bacterial - Viral - Allergic b. Ophthalmia neonatorum c. Trachoma (Gross idea) d. Pterygium **4.Precautionary measures:**	2 hrs
Students will be able to: 1. describe the anatomy of lacrimal apparatus 2. describe production, and functions of tear. 3. describe steps of sac patency test with interpretation 4. describe symptoms, signs of lacrimal sac diseases. 5. diagnose and manage lacrimal sac diseases. 6. mention indication, contraindication and major complications of DCR and DCT 7. perform digital regurgitation test 8. perform digital massage in congenital nasolacrimal duct obstruction. 9. initiate treatment of acute & chronic dacryocystitis, and congenital nasolacrimal duct obstruction, and referred to an ophthalmologist	**Lacrimal Apparatus:** **1. Gross Anatomy of the Lacrimal Apparatus& its diseases:** **2. Physiology:** Function of tear. **3.Examination Technique:** **4. Lacrimal sac disease:** a. Actuate dacryocystitis. b. Lacrimal sac abscess c. Chronic dacryocystitis. d. Congenital nasolacrimal duct obstruction	2 hrs

Learning objectives	Contents	Teaching Hours
Students will be able to 1. describe gross anatomy of the fibrous coat of the eye 2. describe supply of nutrition to cornea and maintenance of its transparency 3. describe steps of performing fluorescein dye test. 4. describe Keratoplasty 5. examine cornea 6. perform fluorescein dye test (to detect corneal epithelial defect) 7. remove superficial nonimpacted corneal foreign body 8. diagnose, and initiating treatment of corneal ulcer, keratitis and appropriate referral	**Cornea and sclera:** **1. Gross anatomy of cornea and sclera** **2. Physiology:** a. Maintenance of nutrition& transparency of cornea b. Function of cornea c. Tear film **3. Diseases of cornea** a. corneal ulcer b. keratitis c. Keratoplasty (Gross idea)	3 hrs
Student will be able to 1. describe the parts of uveal tract. 2. describe diseases of uveal tract, symptoms, signs and management of acute iritis & endophthalmitis 3. identify circumcorneal / ciliary congestion 4. perform pupil examination 5. identify ciliary tenderness 6. diagnose, initiation of treatment of iritis, endophthalmitis and appropriate referral.	**Uveal tract** **1. Gross Anatomy** **2. Diseases of uveal tract** a. Anterior uveitis/uveitis b. Endophthalmitis c. Panopthalmitis	2 hrs

Learning objectives	Contents	Teaching Hours
Students will be able to: 1. describe clinical features of age related cataract 2. describe stages of senile cataract 3. mention indications of cataract surgery 4. mention complications of untreated cataract 5. perform the preoperative evaluation 6. state ECCE, SICS and phaco surgery. 7. mention Complications of cataract operation 8. state Advantage of IOL implantation over spectacle 9. demonstrate the skill of diagnosis of cataract and referral to proper ophthalmologist	**Lens and cataract:** **1. Gross Anatomy:** **2. Physiology:** Accommodation **3. Disease of the lens** a. Cataract b. Pseudophakia c. Aphakia **4. Management of cataract:** a. Cataract surgery (Gross idea) b. Intraocular lens and its advantage (Gross idea) **5. Referral criteria of a cataract case**	3 hrs
Student will be able to: 1. describe anatomy of the anterior chamber and anterior chamber angle 2. describe production circulation and outflow of the aqueous humor 3. define and classify glaucoma. 4. describe Symptoms, signs and management of POAG, PACG and congenital glaucoma 5. demonstrate the skill of: a. taking history of glaucoma patients. b. digital tonometry. c. conformation test d. direct ophthalmoscopy 6. diagnose and provide initial management of PACG and early referral. 7. counseling of all glaucoma patient regarding blinding nature of disease & necessity of life long regular treatment & follow up	**Glaucoma:** **1. Gross Anatomy** **2. Physiology** a) Production, circulation and outflow of the aqueous humor. b) Intra ocular pressure and factors influencing IOP. **3. Classification of glaucoma.** **4. Disease.(gross aspect)** **a)** Primary angle closure glaucoma i) Risk factors ii) Symptoms iii) Signs iv) Management **b)** Primary open angle glaucoma: i) Risk factors ii) Symptoms **c)** Congenital glaucoma i) Genetics ii) Symptoms iii) Signs **d)** Secondary Glaucoma: Causes **6. Principles of Management:** a. Pharmacological treatment. b. Surgical Management: c. Laser treatment	4 hrs

Learning objectives	Contents covered in this topic	Teaching Hours
Student will be able to: 1. describe the gross anatomy of the retina and its function 2. describe the normal fundus. 3. describe the fundal features of diabetic, hypertensive retinopathy. 4. examine normal eye with use of direct ophthalmoscope 5. identify or suspect vitro retinal disorder and refer patient	**Retina and vitreous:** **1. Gross Anatomy:** i. Vitreous ii. Retina **2. Function of retina.** i. Normal vision. (acuity of vision) ii. Color vision **3. Symptoms Suggestive of vitro- retinal disorder.** **4. Examination of normal eye with direct ophthalmoscope.** **5. Fundal features of** a. Diabetic retinopathy. b. Hypertensive retinopathy. **6. Referral criteria** a. Abnormal red reflex of fundus b. Visual loss or symptoms	3 hrs
Student will be able to: 1. define the common refractive errors eg. myopia, hypermetropia & astigmatism. 2. define Aphakia and pseudophakia 3. define presbyopia and describe the rule of thumb for correction of presbyopia 4. demonstrate basic knowledge about contact lens and refractive surgery. 5. define low vision and mention importance of low vision aid for rehabilitation. 6. record visual acuity. 7. do prescription of presbyopic glass as per rule of thumb and referring difficult patients to ophthalmologists. 8. refer all cases for final correction by ophthalmologist 9. detection of cases with low vision and refer to low vision aid centers	**Refraction, Contact lens, Refractive Surgery and Low vision (Gross idea):** **1. Refractive status& management** a. Emetropia. b. Myopia. c. Hypermetropia. d. Astigmatism. e. Presbyopia f. Aphakia- I. Spectacle correction II. Contact lens III. Intraocular lens and pseudophakia IV. **Refractive surgery** (Basic idea) **6. Low vision.** Definition of low vision. Refer to low vision aid centre	3 hrs

Learning objectives	Contents	Teaching Hours
Students will be able to. 1. name tumors affecting the eye and adnexa 2. name the causes of leucokoria in children. 3. describe stages, symptoms, signs and management of retinoblastoma 4. diagnosef Leucokoria and mention its importance for early referral	**Leucocoria in children** a. Cataract b. Retinoblastoma c.. Endophthalmitis d. Persistent fetal vasculature (PVF/PHPV) e. Retinopathy of prematurity	1 hrs
Student will be able to: 1. describe Strabismus. 2. describe the importance of measuring visual acuity of children of two to five years old 3. describe the causes of amblyopia in children 4. describe the causes of Leukocoria 5. demonstrate the skill of: a. recording visual acuity in children b. ocular motility test c. recognize strabismus, nystagmus and amblyopia for immediate specialist referral.	**Ocular motility and paediatric ophthalmology:** **1. Gross Anatomy.** Extra-ocular muscles **2. Amblyopia.**- Definition, cause & impact **3. Strabismus/squint:** Definition, cause, diagnosis,effects and management principle **4. Nystagmus:** Definition & identification	2 hrs

Learning objectives	Contents	Teaching Hours
Student will be able to: 1. describe visual and pupillary, path ways. 2. describe manifestations of III, IV & VI cranial nerve palsy. 3. describe Papilloedema 4. record visual acuity. 5. perform confrontation visual field testing in four quadrants for each eye. 6. examine pupillary light reflex 7. recognize and diagnose nystagmus. 8. examine the optic disc with the direct ophthalmoscope	**Optic Nerve and Neuro Ophthalmology:** **A. Gross Anatomy** 1. Visual path way. 2. Pupillary Pathway **B. Examination procedure:** 1. VA 2. Visual field testing (confrontation) 3. Pupillary light reflex. 4. Direct Ophthalmoscopy	2 hrs
Student will be able to: 1. describe types of ocular injury 2. explain the effect of different types of ocular trauma 3. mention criteria for referral of the patients 4. demonstrate skill of: a) examination of the eye to assess the effect of injury b) removal of superficial conjunctival, sub-tarsal and superficial corneal foreign body c) performing pad-bandage of the eye d) providing primary management of ocular trauma e) referring the patient after primary management to ophthalmologist /hospital	**Ocular trauma:** 1. Blunt injury (Details) 2. Perforating Injury. 3. Foreign Body:(Extra and intra ocular) 4. Chemical Injury (details) 5. Thermal injury (Basic idea) 6. Radiation injury (Basic idea)	2 hrs

Learning objectives	Contents	Teaching Hours
Students will be able to: a. describe fundal change in hypertension b. describe fundal change in diabetes mellitus. c. describe ocular manifestation of vitamin-A deficiency and management. d. provide health education regarding importance of yearly eye checkup by ophthalmologist for prevention of blindness due to diabetes. e. demonstrate the skill of detecting disc oedema on fundus examination with direct ophthalmoscope f. recognize Bittot's spot, xerophthalmia and Kerotomalacia & referal.	**Ocular Manifestations of systemic diseases (Gross idea):** 1. Diabetes mellitus 2. Hypertension 3. Vitamin A Deficiency 4. Auto-immune diseases (Basic idea) 5. Tuberculosis 6. AIDS	2 hrs
Student will be able to: a. describe etiology, magnitude and impact of blindness. b. demonstrate the concept of 'Primary Eye care' c. describe Ocular hygiene. d. describe diseases and conditions for referral. e. describe concept of school sight test. f. define low vision g. demonstrate gross idea about communicable and preventable eye diseases. h. perform school sight test i. identify cases of low vision and referral. j. implement "Primary Eye Care" concept at the place of work k. develop awareness about eye donation in the community. l. diagnose & initiate initial management of ocular emergency	**Miscellaneous & Community eye care:** 1. Etiology and magnitude of blindness 2. School sight test. 3. Primary eye care 4. Referral guide line 5. Low vision and rehabilitation 6. Outreach activities. 7. Eye donation & eye banking. 8. Vision 2020, The right to sight (Gross idea) 9. Ocular therapeutics 10. Ocular emergency 11. Sudden loss of vision 12. Painful loss of vision 13. Painless loss of vision 14. Gradual dimness of vision 15. Red eye 16. Ocular effects of environmental change	5 hrs

EXAMINATION SKILLS	Skills-		Assist	Observe
	Able to perform Independently	Able to Perform under Guidance		
1. Visual Acuity test and Use of pinhole (including light perception, projection)	✓			
2. Colour Vision test		✓		
3. Visual field by confrontation	✓			
4. Examination of ocular movements	✓			
5. Flourescien staining to identify corneal abrasion		✓		
6. Pupillary size and reaction	✓			
7. Distant direct ophthalmoscopy on dilatedpupils to diagnose lens opacities		✓		
8. Method of Direct ophthalmoscopy		✓		
9. Digital tonometry	✓			
10. Schiotz tonometry				✓
11. Regurgitation for NLD Block	✓			
12. Syringing				✓
13. Instillation of eye drops/ ointment	✓			
14. Irrigation of conjunctiva	✓			
15. Applying of patching	✓			
16. Epilation of cilia		✓		
17. Eversion of upper eye lid	✓			
18. Removal of corneal foreign body				✓
19. Cataract surgery				✓
20. Glaucoma surgery				✓
21. Chalazion/Stye				✓
22. Tarsorraphy			✓	
23. Assessment of Opacity in the media	✓			
24. Lacrimal Sac Surgery				✓

DEPARTMENT OF OPHTHALMOLOGY

CARD FOR EVALUATION

First clinical Card (4th year) **Total Marks = 100**

Name of the student			
Roll No		**Class**	
Session		**Batch**	
Period of placement in Eye 4 weeks			
From		**To**	

No.	Items	Day of teaching	Marks obtained	Teacher's Signature
1.	History taking	1 day		
2	Examination of the Eye: Adnexa, **Lid, Chalazion, Ext.Hordeolum, Int.Hordeolum** Visual Acuity (Adult & children unaided, with pinhole, with present glass), Ant. Segment. Ocular motility, Digital tonometry, Confrontation test.(Visual field test)	3 days		
3	Methods of application of ocular drugs: Eye Bandage, removal of sup. Corneal F.B, Irrigation of conj. Sac.	1 day		
4	'RED EYES' - case demonstrations. Including fluorescein dye test & cilliary tenderness.	2 day		
5	Trial box, Snellen's chart	1 day		
6	Regurgitation test, Sac Patency Test and Epiphora 3 cases	1 day		
7	Assessment	1 day		
8	Total	10 days		

Total No. of attendance	
Marks obtained	
Comment	
Signature of the Registrar/RS	**Signature of Head of the Department**

DEPARTMENT OF OPHTHALMOLOGY

CARD FOR EVALUATION

Second clinical Card (5th Year) Total Marks = 100

Name of the student			
Roll No		**Class**	
Session		**Batch**	
Period of placement in Eye Ward 4 (four) weeks. (ward + OPD)			
From		**To**	

Total No. of attendance	
Marks obtained	
Comment	
Signature of the Registrar/RS	**Signature of Head of the Department**

Teaching Hours

Methods	Total

No.	Items	Day of teaching	Marks obtained	Teacher's Signature
1.	History & Exam (Colour vision, Field of vision, pupillary light reflex)	4 days		
2.	Corneal ulcer, Corneal abrasion: Diagnosis and management.	2 days		
3.	Uveitis: Diagnosis and management.	2 days		
4.	Cataract diagnosis and management.	3 days		
5.	OT, surgical demonstration Chalazion, Stye, DCR, Cataract surgery with IOL implantation (SICS/ECCE/Phaco)	2 days		
6.	Glaucoma.	3 days		
7.	Ocular Injury, Conjunctival irrigation, Eversion of lid, Epilation	2 days		
8.	Ophthalmoscopy, Tonometry, Assessment of opacity in media	2 days		
9.	Dacryocystitis: Diagnosis & management.	2 days		
10.	Xerophathalmia, paediatric cases.	2 days		
11.	Assessment	2 days		
	Total	**26 days**		

Lectures	40 hours
Ward Teaching	8 weeks

Otorhinolaryngology & Head-Neck Surgery

Departmental Objectives

The aim is to teach undergraduate medical students so as to produce need based community oriented doctors who will be capable of :

1. diagnosing and managing common ENT & Head-Neck disorders.
2. referring complicated ENT and head-neck disorders to appropriate centres if and when necessary
3. managing common emergencies in ENT & head-neck disease
4. giving preventive advice on certain aspects of ENT & head-neck diseases

To achieve above mentioned departmental objectives the following learning objectives should be achieved:

1. The art of appropriate history taking
2. Should perform primary ENT & head-neck examination procedure
3. Should use the aural speculum, nasal speculum, tongue depressor, laryngeal mirror, tuning fork and head mirror/light, otoscope & other instruments as listed in the enclosure
4. Should be able to describe the clinical application of basic anatomy & physiology of Ear, Nose and Throat
5. Should be able to describe the pathology of common ENT disorders & disorders of the Head-Neck region
6. Should list commonly used drugs and describe their adverse effects
7. Should recommend common investigative procedures and special investigation (CT, MRI, and sonography, etc)

Learning Objectives and Course Contents in Otorhinolaryngology & Head-Neck Surgery

Learning Objectives	Contents	Teaching Hours
Students will be able to: 1. demonstrate the applied Anatomy of ear. 2. demonstrate the applied Physiology of ear. 3. take History of ear diseases 4. conduct clinical hearing test and value the significance of audiometry and caloric test. 5. diagnose various ear diseases by clinical examination (FB, Otitis Exerna, Traumatic Tympanic membrane perforation, ASOM, CSOM, Otosclerosis. 6. remove impacted wax, foreign body, Aural toileting 7. diagnose ear diseases and Its complications and refer to appropriate hospital when needed. e.g.- perichondritis otosclerosis extra and intracranial complications of middle ear diseases 8. make D/D of earache 9. differentiate safe from unsafe variety of CSOM.	**EAR** **CORE** 1. applied Anatomy of ear 2. applied Physiology of ear:- hearing, Balance 3. congenital diseases of ear-Preauricular sinus 4. causes of earache 5. causes of deafness 6. diseases of ext. ear-Furuncle, Otitis externa ,Otomycosis, Foreign body, Trauma,Perichondritis of pinna 7. diseases of middle ear-ASOM, CSOM, OME, Otosclerosis. 8. diseases of internal Ear-Meniere's disease, Labyrinthitis. 9. Tuning fork test, Audio metry, Caloric test 10. micro ear surgery-Myringotomy Myingoplasty & different types of mastoidectomies. 11. neurootological complications: Lateral sinus thrombosis, general idea about intra cranial complications of ASOM & CSOM. **Additional:** 12. causes of Vertigo &Tinnitus 13. management of deafness.	

Learning Objectives	Contents	Teaching Hours
Student will be able to : 1. describe applied anatomy and applied physiology of nose. 2. manage epistaxis 3. remove FB and reduction of Fracture nasal bone. 4. diagnose nasal diseases by clinical examinations 5. refer the patient to specialized ENT centre 6. apply ANS Pack. 7. history taking of disease of Nose and PNS.	**<u>NOSE</u>** **CORE:** 1. Anatomy of nose 2. Physiology of nose 3. Epistaxis. 4. FB nose, Fracture nasal bone 5. Nasal allergy 6. Nasal polyp 7. Rhinitis, Sinustitis 8. DNS, septal perforation, septal abscess, septal haematoma 9. Nasal papilloma, rhinosporidiosis. 10. Atrophic rhinitis 11. Nasopharyngeal angiofibroma and naso-pharyngeal carcinoma. 12. Sino-nasal malignancy **Additional** Headache Tumours of nose and PNS Common nasal and sinus Operation:- Polypectomy SMR, Septoplasty Caldwell Luc operation BAWO	

Learning Objectives	Contents	Teaching Hours
Student will be able to : 1. Describe anatomy of oral cavity, pharynx, larynx and oesophagus. 2. Describe Physiology of deglutition. 3. Make D/D of white patches, ulcers in oral cavity, Leukoplakia and Sorethroat. 4. Diagnose Diphtheria and refer it to appropriate hospital 5. Diagnose acute & recurrent tonsillitis, adenoids, 6. Describe indications of adenotonsillectomy and principles of post operative management and contraindications. 7. Diagnose complications of adenotonsillectomy and its management 8. List D/D of dysphagia. 9. List D/D of hoarseness of Voice. 10. List D/D of Stridor 11. Describe indications of trachestomy & its steps, postoperative management and complications.	**Mouth cavity, pharynx, larynx and esophagus** **CORE** 1. Anatomy of oral cavity, pharynx, larynx and Oesophagus 2. Physiology of salivation, deglutition and functions of larynx, pharynx. 3. Diseases of oral cavity Congenital anomalies like Hare lip, cleft palate White patch-oral cavity, oral ulceration, Leukoplakia and neoplasm. 4. Acute & recurrent tonsillitis faucial diphtheria. 5. Adenoids 6. Tonsillectomy and adenoidectomy 7. Peritonsillar abscess, retro pharyngeal abscess, parapharyngeal abscess. **Larynx** Acute Epiglottitis, Acute Laryngo tracheo bronchitis Acute & chronic laryngitis Papillomalarynx Stridor Causes of hoarseness of voice Tracheostomy Carcinoma-larynx. Foreign Body larynx, trachea, bronchus.	

Learning Objectives	Contents	Teaching Hours
	Pharynx FB Malignancy of Pharynx **Oesophagus** PV syndrome Dysphagia Foreign Body Benign & malignant lesion of Oesophagus (strictures, rupture) **Head-Neck** 1. Applied anatomy of salivary glands, Thyroid & Parathyroid glands 2. Physiology of salivary glands, Thyroid & Parathyroid glands 3. Salivary gland diseases 4. Thyroid and parathyroid diseases 5. Neck mass 6. Congenital sinus & cyst of head neck (Thyroglossal cyst, Branchial cyst, Branchial sinus) **General Idea about head neck malignancies**	

Integrated Teaching

Topic	Learning Objective	Teaching Aids	Assessment	Department
• Otogenic and Rhinogenic extra-cranial & intra-cranial complications • Facio-Maxillary Neoplasm	Student will be able to: • state the causes of extra-cranial & intra-cranial complications of ASOM and CSOM • describe the symptoms & signs of acute mastoiditis, facial palsy, labyrinthitis lateral sinus thrombosis. • Investigate & interpret the results of investigation. • treat different complications (gross idea) State common causes of maxillary swelling/carcinoma of Maxilla.	Video cassette film of C.T. Scan, X-ray, Diagram, Otoscope, Hammer, Cotton, Pin & Patients. Tongue depressor, PNS mirror, laryngeal mirror Nasal speculum. (Nice to know fundoscopy) Ophthalmoscope	Performance, Interpretation, Short Question, Modified short Question, MCQ Practical Exam OSCE	ENT & Neuro Surgery ENT & Eye

Teaching Methods:

- Lecture/ Mini Lecture
- Tutorial/ Demonstration - Video
- Case presentation- Subject – Operation- Programe side Teaching Theatres
- Discussion, Visit to RHC / Specialised Centre (If available)

Teaching Hours for Otorhinolaryngology & Head-Neck Surgery

Methods	Total
Lectures	38 hours
Ward Teaching	8 weeks

CARD SYSTEM FOR WARD & OUTDOOR DUTIES

Clinical Card in Otorhinolaryngology & Head-Neck Surgery

(4 weeks in 3rd phase and 4 weeks in 4th phase - Total marks = 100)

Name of the student			
Roll No		**Class**	
Session		**Batch**	
Period of placement in ENT Outdoor /Ward			
From		**To**	

3rd Phase

No.	Item	Date of teaching & learning	Marks obtained	Signature of teacher
1.	History taking, examination & investigations of ear diseases			
2.	History taking, examination & investigations of diseases of nose & Paranasal Sinuses.			
3.	History taking, examination and investigation of diseases of pharynx, larynx & Oesophagus			
4.	Examination of Head-Neck & differential diagnosis of neck swellings.			
5.	Observe 10 cases of discharging ears and establish diagnosis			
6.	Observe 10 cases of deafness and establish diagnosis			
7.	Observe 10 cases of nasal obstruction & establish diagnosis. Learn all about septal deviation			
8.	Observe 5 cases of nose bleeding and learn nasal packing			
9.	Observe 5 cases of wax in ears and learn toileting			
10.	Observe 10 cases of neck swellings and establish diagnosis			

4th - phase

No.	Items	Date of teaching & learning	Marks obtained	Signature of teacher
1.	Observe 5 cases of Recurrent tonsillitis tonsillectomy, also learn pre & postoperative management.			
2.	Observe cases of Peritonsillar abscess/ retropharyngeal abscess. Establish diagnosis. Learn principles of management			
3.	Observe 10 cases of hoarseness of voice. Establish diagnosis & learn principles of treatment			
4.	Observe instruments for laryngoscopy, oesophagoscopy & bronchoscopy. Learn procedures of each			
5.	Observe 5 cases of tracheostomy. Learn technique of pre & post-operative management			
6.	Observe 2 antral washout operation. Learn instruments & principles of operation. See 3 cases of FB Nose. Learn technique of removal.			
7..	Observe 5 cases of dysphagia. Learn management. Learn all about nasogastric feeding			
8.	Observe 10 cases of Head & Neck swellings Establish diagnosis.			
9.	Observe ENT X-rays. Interpret common findings			

Total Number of attendance		**Out of**	
Punctuality			
Attitude to learning			
Relationship with staff & patients			
Percentage of marks obtained in items examination			
Signature of Professor / Associate Professor	**Date :**		

Instruments

1. Ear speculum
2. Otoscpe
3. Nasal speculum (Thudicum)
4. Antrum puncture trocar and cannula (Lichwitz)
5. Tongue depressor (Luc's)
6. PNS mirror
7. Laryngeal mirror
8. Boyle Davis mouth gag
9. Adenoid curette with / without cage (St Clare Thomson)
10. Tracheostomy tube-metallic/PVC
11. Laryngoscope
12. Oesophagoscope
13. Bronchoscope
14. Head light/mirror
15. Tuning Fork

Operative Procedures

a. Tonsillectomy
b. Adenoidectomy
c. Septoplasy/SMR
d. Caldwell-Luc operation
e. Myringoplasty
f. Mastoidectomy
g. Thyroidectomy
h. Salivary gland excision
i. Biopsy for diagnosis of carcinoma of tongue, oral lesions etc
j. Direct larygnoscopy
k. Neck node biopsy
l. Antral washout

X-ray

m. X-ray paranasal sinus (occipito-mental view)
n. X-ray nasopharynx – lateral view
o. X-ray mastoid
    - Towne's view
p. X-ray neck
    - Lateral view
    - Ba swallow x-ray of esophagous

Nice to know

CT scan /MRI

FOL – Fibre Optic Laryngoscopy

CLINICAL PLACEMENT OF STUDENTS 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**		**1st term**
16-17	**Orthopaedic surgery**	**05-08**	**Ophthalmology**	**01-04**	**Orthopedics**
18	**Radiology**	**09-12**	**ENT**	**05-08**	**Ophthalmology**
19	**Transfusion medicine**	**13**	**Radiotherapy**	**09-12**	**ENT**
20	**Anaesthesia**	**14**	**Neurosurgery**		**2nd & final term**
21	**Dentistry**	**15**	**General Surgery**		
				01-07	**Surgery**
				08-09	**Urology**
				10-11	**Paediatric Surgery**
Card completion exam at the end of rotation & **Term exam at 41st week**		**Term exam at 41st week**		**12**	**Emergency & Casualty** **Burn & Plastic Surgery**
				04 weeks	**BLOCK POSTING**
					Final assessment

Time schedule for the lecture classes (number)

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
Transfusion Medicines	0	3	0	3
Anaesthesia	0	10	0	10
Neurosurgery	0	0	5	5
Paediactric Surgery	0	5	10	15
Urology	0	5	10	15
Burn Plastic Surgery	0	0	5	5
	35	**68**	**148**	**251**

Large Group Teaching

All lectures should be interactive one.
It should be directed to develop analytical and problem solving attitude.

Student should be encouraged to adopt self-directed learning.

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Clinical Teaching and tutorials

- Students are to attend the wards as per placements twice in a day in morning and evening sessions as fixed by the respective college authority.
- They must be well dressed along with apron & nameplate. Shirts, Pants (full length) Shoes only and Winter apparels are allowed in ward settings. Three quarter pant, T-shirt, Sandals are not allowed and teacher may disallow those students to continue the class.
- They will carry stethoscope, percussion hammer, pencil torch and measuring tape and other necessary clinical examination tools.
- During their ward visit, they will examine patients and try to make working diagnosis and write the history as per prescribed format.
- They will go through hospital documents and look what necessary measures and decision has been taken to follow the management of the patient in the ward.
- They will observe and practice techniques of IV & IM injection, infusion, dressing of the wounds. Student will also attend the operation theater and observe the instruments and equipments used in the operation theater.
- They will observe the techniques of different anaesthesia and the drugs used, techniques of hand scrubbing, gowning gloving, scrubbing and draping of operation field, making incisions, haemostasis, saturating technique and wound repair.
- Students performance will be assessed by item examinations, ward and term examinations.

Assessment-

1. **Internal assessment: (Marks for formative assessment)**
    a. Items & Card completion examination ,
    b. Year final assessment at the end of Phase-II & III (written)
    c. MCQ in Integrated teaching.
    d. Final assessment examination (similar to final professional examination) at the end of block posting. (Medicine, Surgery, Obs & Gynae)
2. **Final professional MBBS Examination:**
    a. **Written:** (MCQ- 20 (10 SBA and 10 MTF) ; SAQ & SEQ=70) each paper
    Time allocation: MCQ- 30 minutes; SAQ+SEQ – 02hrs 30minutes.

    i. Paper – I SAQ & SEQ consists of 4 groups.

Group -1:- Principles of surgery, Vascular Diseases, Anaesthesia, Radiology, Radiotherapy, Blood Transfusion.
Group -2:- GIT, Paediatric surgery, Operative Surgery, Chest disease
Group -3:- HBS & Pancreas, Urology, Breast, Endocrine.
Group -4 :- Orthopaedics & Traumatology, Neurosurgery,
There will be 05 questions in each group and out of those 04 are to be answered carrying 3.5 marks each.
At least two Structured Essay Question (SEQ) will be in each paper.

ii. Paper –II:
Ophthalmology-- MCQ-10 (5 SBA, 5 MTF) & SAQ & SEQ -35;
ENT-- MCQ-10 (5 SBA, 5 MTF) & SAQ & SEQ -35
Group-1and Group 2 = Ophthalmology
Group-3 and Group 4 = ENT
At least two Structured Essay Question (SEQ) will be in each paper.

iii Preferably questions will be of
recall type- 30%,
understanding or data interpretation type- 30% and
problem solving type- 40%

iv Question should cover the whole curriculum .
90% of the questions should preferably be from core content and 10% from additional content of course.

v. Scripts distribution: 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 and Group -4 will be assessed by an Orthopedic surgeon.

b. OSPE –

i. Stations will be constructed centrally by two experience examiners nominated and supervised by chairman of the examination committee of the respective university.
ii. Each station will of 5 minutes time and marks will be allocated according to rules mentioned in the subject concerned.
iii. All the examinee 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 dis qualify the candidate.
iv. OSPE examination of Surgery, Ophthalmology and ENT will be in two different days.
v. 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.

vi. 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.
vii. 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.

ix Marks allocation

Surgical stations are- (10 x 6 = 60 marks)

		No.
a.	Plain x-ray	-1
b.	Contrast x-ray	-1
c.	Orthopaedic X-ray	-1
d.	Specimen	-1
e.	Instrument/s	-1
f.	Appliances (Catheter, tubes, stoma or reservoir bags etc)	-1
g.	Data interpretation	-1
h.	Procedure stations	-2
i.	Splint/bandage	-1

4. Ophthalmology -5 and ENT-5 stations are- (5+5) x4 = 40 marks)

		No.
a.	Instrument station	= 1
b.	X-ray station/ Specimen	= 1
c.	Clinical photograph/ tracing	= 1
d.	Procedure	= 1

c. Structured Oral Examination. (SOE)

NB: 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

Paper-1 (General surgery and allied subjects) Marks-30X2=60

a. Two separate boards comprising one internal and one external examiner will assess written scripts, oral, practical and clinical examination.
b. There are two other reserve examiners in each internal and external pool. One of the reserve examiner should be from allied subject like urology, pediatric surgery, plastic surgery or neurosurgery.
c. Out of four examiners two will be from general surgery, one will be an orthopedician & another one will be from allied subjects of surgery.
d. There will be four boxes covering questions on surgery and allied specialties assigned for each examiner.
e. Each box will contain at least 20 sets of questions.
f. A set of question will contain 3 small questions of three-difficulty level (Must Know, Better to Know & Nice to Know)
g. Content of the box-
    1. Box-1:- Principles of surgery, Vascular Diseases, Anaesthesia, Radiology, Radiotherapy, Blood Transfusion.

2. Box-2:- GIT, Paediatric surgery, Operative Surgery, Chest disease
3. Box-3:- HBS & Pancreas, Urology, Breast, Endocrine.
4. Box-4 :- Orthopaedics & Traumatology, Neurosurgery.

Paper –II (Ophthalmology and ENT) Marks 20X 2= 40

i. Two separate boards for each specialty comprising one internal and one external examiners will assess written scripts, oral, practical and clinical examination.
ii. There will be one reserve examiner in each specialty.
iii. Instruments and x-rays will not be examined in viva board.
iv. Each student will be allocated 15 minutes
v. Problem solving skills / Judgment of knowledge should be examined
vi. The question and answer will be constructed by the examiners in advance
vii. Question is typed in a card and put in box of defined domain
viii. A number of questions from each topic should be constructed covering the content area.
ix. Content will be changed on alternate days
x. The candidate randomly selects one card from each box and answer.
xi. The candidate should answer selected number of question in the board
xii. The examiner read the question, repeat it if necessary or the candidate reads the question if allowed.
xiii. When candidate answers the questions, the examiner will put a tick in appropriate site on a prepared rating scale

d. Clinical examination of surgery

a. Surgery -60
    1. Short cases 3 x 10 =30
    2. One Long case- 30.
b. Ophthalmology cases -2 x 10=20
c. ENT cases- 2 x 10=20

Mark distribution of oral, clinical and practical examination in surgery in final 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

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- 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 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.

FINAL PROFESSIONAL EXAMINATION

Assessment of Surgery

(MARKS DISTRIBUTION)

Components	Marks On each component	Sub total Marks	Total Marks
Written examination			
Formative assessment marks			
General Surgery & allied subjects	10	20	20
Ophthalmology	05		
ENT	05		
Written			
Paper – 1:			
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	

Oral, Clinical & Practical			
General Surgery + allied & Orthopaedics (Oral+ Clinical+ Practical)	(60+60+60)	180	
Ophthalmology (Oral+ Clinical+ Practical)	(20+20+20)	60	300
ENT (Oral+ Clinical+ Practical)	(20+20+20)	60	
Oral examination should be structured.			
Grand Total Marks			500