

MADHYA PRADESH PARAMEDICAL COUNCIL6th Floor, Satpura Bhawan, Bhopal**Syllabus & Guidelines****Schedule Serial No. 17****Subject: -Operation Theater Technician****No. Of Admission; 0 -50 Admissions Per Year**

S.No	Duration/ Degree/ Diploma/ Certificate	Syllabus	Teaching Faculty with minimum qualification & experience	Non teaching staff with qualification & Experience	Library	Laboratory with Equipment	Building		Remark
							Teaching	Hostel	
1	1 year (12months)	Appendix 'A' enclosed	1.Professor of Surgery- 1 2.Associate Professor Surgery -1 3. Assistant Professor Surgery –1 4. Demonstrator-	Clerk-2 Computer Operator- 1 Peon-2 Sweeper - 2 Technician-4 Accountant – 1 Chowkidaar- 2 Nurse –2 (B.Sc N)		Fully equipped Operation Theatre as per MCI recommendation	Lecture Hall-2 2500 Sq.ft Demonstration –3 1250 Sq.ft. each	25 room Double seated 15;x 20 with kitchen, Dining room, toilets.	Qualification & experience of teaching staff as per MCI norms.

OPERATION THEATRE TECHNICIAN TOPICS FOR ANAESTHESIA:

1. Introduction and types of anaesthesia.
2. General anaesthesia – anaesthetic gases and volatile anaesthesia agent.
3. Equipment for General anaesthesia – anaesthetic machine & other instrument preparation and arrangement.
4. Drugs used for pre-operative, intra operative and post- operative medication.
5. Arrangement drugs and other equipment in O.T.
6. Regional Anaesthesia – spinal, epidural, nerve & plexus blocks.
7. Preparation and arrangement for regional anaesthesia.
8. Clinical observation and identification of sign and symptoms of shock, allergic reactions respiratory distress & assistance in other emergency conditions.
9. Requirements and assistance in conduct of anaesthesia intensive therapy unit and resuscitation.
10. Intravenous infusion solutions and blood transfusion therapy.
11. Pre- operative check-up, and preparation of patient for anaesthesia.
12. Post-operative observation and care of patient.
13. Maintenance, care and sterilization of anaesthesia equipments.
14. Care, maintenance and use of monitoring equipment used in anaesthesia.
15. Record keeping and maintenance of record of drugs and patient anaesthesia record.

SYLLABUS FOR COURSE OF O.T. TECHNICIAN THEORY TOPICS:

1. Introduction to surgery and basic surgical procedures
2. Sterilization of equipment and O.T. (Aphasia, Antisepsis & Fumigation.) & O.T. hygiene.
3. Surgical infection in O.T. & prevention anti Microbial therapy.
4. Fluids & electrolytes & intra venous fluids & setting up of IV line & Eletransfuisa.
5. Shifting of O.T. patients (Pre & Post op.) Sp. trauma patients.
6. Various surgical instrument.
7. Maintenance & care of general & special surgical instruments & equipments.
8. Pre-Op requirements (case papers, Pt. identification, consent, pre-op instruments).
9. Positioning of patient for special surgical procedures.
10. Control of Hemorrhage & resusaration.
11. O.T. illumination.
12. Preparation of surgical field.
13. Assisting at operation & setting up of instrument trolley
 - (a) Gen. surgery.
 - (b) Uri. Surgery.
 - (c) Gastrointestinal surgery.
 - (d) Neurosurgery.
 - (e) Cardiovascular surgery.
 - (f) Orthopedic surgery.
 - (g) E.N.T surgery.
 - (h) Gynaelogical & Obstetric surgery.
14. Surgical sutures.
15. Collection of specimens
16. Dressing material & their application.
17. Waste disposal.

DEMONSTRATION:

1. Sterilization techniques.
2. O.T. Hygiene.
3. Scrubbing.
4. How to wear gloves.
5. Setting-up of IV line.
6. Bandage & plaster application.
7. Surgical instruments.
8. Sutures.
9. Positioning of patient.
10. Shirting of surgical patients.
11. Demonstration of surgical procedures.
12. Collection specimens.
13. Maintenance of surgical records.

14. Monitoring of patients.
15. Demonstration of minor processes, R.T. insertive,

SYLLABUS FOR O.T. TECHNICIANS:

1. Morphology, classification and identification of microbes.
2. Growth, transmission and destruction of microbes.
3. Sterilization methods. 4. Sterilization methods.
5. Sterilization methods. 6. Disposal of waste materials.
7. Collection and transportation of the specimen of O.T. for microbiological examination. 8. Hospital infection.

O.T. Technician Course:

Five lectures are –

1. Skin
2. Muscle.
3. Bones & joints.
4. Blood vascular system.
5. Nervous system.

SYLLABUS

ANATOMY & PHYSIOLOGY:

ANATOMY Introduction: -

1. Structure of the body-cells-tissues. Muscular-Skeletal system: Skull control. 9. Demonstration. 10. Demonstration. 11. Demonstration.– verbal column girdle, Bones of upper extremities – Bones of lower extremities, muscles, pelvic girdle, thoracic cage & bone joints. Cardiovascular system: Heart – Circulation of blood- arteries- veins. Lymphatic system: Circulation of Lymph, Lymph glands, and Thoracic duct. Digestive system: Mouth, esophagus, stomach, small intestine, large intestine, spleen, liver, gall bladder, Pancreas. Respiratory system: Nose & Larynx-Trachea Bronchi Lungs. Nervous system: Meanings- Brain-Ventricles-Spinal cord and nerves. Reproductive system: Female & Male organs. Urinary system: Kidneys, Ureters, Bladder, Prostate, and Urethra. Skin: Structure and its function. Endocrine system: Hypothalamus Pituitary gland, Penial Gland, Thymus gland, Thyroid and Para thyroid glands, Suprarenal Glands, Testes, Ovaries. Eye: Structure and its function. Ear: Structure and its function.

PHYSIOLOGY (Theory):]

1. Blood:

- (a) Composition and general functions of blood.
- (b) Descriptions of blood cells normal count and functions.
- (c) Steps of coagulation, Anti-coagulation.
- (d) Cerebrospinal fluid, formation, composition and functions.
- (e) Blood group, ABO and Rh, Basis for classification, Basis for determination, Importance of blood groups.
- (f) Composition and functions of lymph.

2. Cardio-vascular system:

- (a) Functions of Heart and blood vessels
- (b) Descriptions of blood cells normal counts and functions.
- (c) Steps of coagulation.
- (d) Cerebrospinal fluid, formation, compositions and function.
- (e) Blood group. Rh, Basic for classification, Basic for determination, Importance of blood groups.
- (f) Composition and function of lymph.

2. Cardio- vascular system: (a) Functions of Heart and blood vessel. (b) Circulation Systemic circulation. Pulmonary circulation (c) Cardiac cycle brief description of events. (d) Definition of cardiac output, pulse, blood pressure. Electrocardiogram

3. Respiratory system

- (a) Name the structures involved in respiration and their function
- (b) Transport of O₂ and CO₂ in the blood.
- (c) Definitions of respiratory rats. tidal volume, vital capacity, cyanosis, hypoxia. **4. EXCRETORY SYSTEM:**

- (a) Functions of Kidney.
- (b) Functions of glomerulii and tubules. Composition of urine normal and abnormal.

5. SKIN:

Function of skin.

6. DIGESTIVE SYSTEM:

- (a) Composition and functions of saliva, Mastication and deglutition.
- (b) functions of stomach, composition of gastric juice, pancreatic juice, Bile and succusentericus.
- (c) Digestion of food by different enzymes. Absorption and defaecation.

7. ENDOCRINE GLANDS:

- (a) Definition endocrine glands. Name the endocrine glands and the hormone secreted by them.
- (b) Major actions of each hormone.

8. REPRODUCTIVE SYSTEM:

- (a) Name the primary and accessory sex organs in male and female. Nthe secondary sexual characters in male and female.
- (b) Functions of ovary formation of ova, actions of ovarian hormones.
- (c) Function of testis spermatogenesis and actions testosterone.

ANATOMY, PHYSIOLOGY**ANATOMY (PRACTICAL)**

1. Demonstration of parts of body landmarks on the surface.
2. Skeletal system, identification of bones and joints.
3. Demonstration of interior of thorax with organs in situ.
4. Respiratory system and pleurau.
5. heart and great vessels.
6. Demonstration and identification of various organs with the abdomen.
7. Liver and gall bladder.
8. Peritoneum ,stomach and Intestines.
9. Spleen, pancreas and part of Urinary system.
10. Male genital system.
11. female genital system.
12. Central nervous sytem, spinal level and site of lumber puncture.
13. Surface anatomy of important organs and blood vessels.
14. Demonstration of limbs with special referene to important vessel and muscles. **PHYSIOLOGY (PRACTICAL)**

1. Microscope, Usage, Maintenance, Cleaning and minor repairs.
2. Behavior of RBC in Isotonic, Hypo tonic and Hype-tonic, sodium chloride solution.
3. Identification of blood cells focussed under microscope.

- (a) RBC

(b) Various types of WBC

(c) Platelets

(d) reticulocyte.

4. To obtain sample of plasma and serum.

5. Preparation of anti-coagulants, double oxalate and sodium citrate.

6. Haematocrit.

7. Identification of ruling area in Neubauer's chamber, RBC and WBC pipettes and Westergreen's pipette Wintrobe's tube.

8. Haemoglobin estimation.

9. Demonstration of blood pressure recording and pulse.

10. Demonstration of normal constituents of urine and abnormal constituents e.g. glucose protein etc.

SURGICAL INSTRUMENTS AND GENERAL SURGERY

(INCLUDING ABDOMINAL SURGERY)

1. SURGICAL INSTRUMENTS:

(A) Instruments for General Surgery.

(b) Operation on the face and Neck.

2. SURGICAL PROCEDURES:

1. Neck Surgery: Thyroidectomy Parathyroidectomy Thyroglossal Duct Cystectomy

2. Breast procedures: Breast Biopsy Mastectomy

3. Abdominal Extraintestinal Surgery

Abdominal Laparotomy, Hemiorrhaphy

Cholecystectomy

Drainage of pancreatic Cyst (pseudocyst)

Pancreaticoduodenectomy (Whipple Procedure)

Pancreaticoduodenectomy

Drainage of abscess (es) in the region of the liver

Hepatic Resection

Splenectomy

4. Gastrointestinal endoscopy

Esophagoscopy

Gastroscopy, Colonoscopy, Sigmoidoscopy

5. Vagotomy and Pyloroplasty

Gastrostomy:

Gastrostomy, Small Bowel, Resection,

Cutaneous, Ileostomy, Appendicectomy

Colostomy: Closure of colostomy, Right Hemicolectomy

Transverse Colectomy

Anterior Resection of the Sigmoid Colon and rectum

Hemorrhoidectomy

Pilonidal Cystectomy and sinusectomy.

SURGICAL PROCEDURES, MONITORING & PREPARING OF INSTRUMENT TRAYS

(A) Roll of OT Technician

Importance

Infection control

Chemical Hazards Pre& post operative procedures

(B) Preparation of instrument Trays

General surgery Trays

Major procedures Tray

Basic/ minor Procedure Tray

Long instrument Tray

Choledochoscopy Tray

Basic Rigid Sigmoidscopy tray

Gastrointestinal Procedures Tray

Rectal Procedures Tray

STERILISATION& O.T. APPARATUS**(A) STERILISATION & DISINFECTION**

1. Disinfection

O.T. Fumigation

Ultraviolet disinfection

2. Sterilisation

(a) Sterilisation of sharp instruments

(b) Use of antiseptics Spirit, Cetavelon, savlon, dettol, carbolic Acid, Betadine

(c) autoclaving

Type of Autoclave

Working

Principles

Methods & details of its use.

(B) OTHER MACHINES COMMONLY USED IN O.T.: Cautey, O.T. Light, Suction, Cardiac Monitor, Emergency Light, Pulse Oxymeter etc.

(C) DRUGS COMMONLY USED IN O.T.

(a) Anesthetic medicines chloroform, Ether, Nitrous Oxide, halogen etc.

(b) General Medicines Analgesics, sedatives

(c) I.V. Fluids

(d) Antibiotics

(e) Emergency drugs

(D) PRE- OPERATIVE CONSIDERATIONS: Physiological support of the surgical patient.

(E) PROTECTION OF THE PATIENT IN SURGERY:

Admission procedure

Transfer Procedure

Various positions during operations

Lithotomy position, ante-trendelenburg's position, Kidney Position

Environmental Controls

Electrical and Fire Hazards

Electro-surgery

Operative Record

Counting Procedure

Sterilization

Emergencies and Disasters

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(a) Instruments for General Surgery

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2.SURGICAL PROCEDURES:

1. Neck surgery: Thyroidectomy

Parathyroidectomy

Thyroglossal Duct Cystectomy

2. Breast Procedures: Breast Biopsy

Mastectomy

3. Abdominal Extraintestinal Surgery

-Abdominal Laparotomy-Hemiorrhaphy

Cholecystectomy

-Drainage of pancreatic Cyst (pseudocyst)

-Pancreaticoduodenectomy (Whipple Procedure)

Pancreatectomy

- Drainage of Abscess (es) in the region of the Liver

Hepatic Resection

-Splenectomy

4. Gastrointestinal endoscopy

Esophagoscopy

Gastroscopy, Colonoscopy, Sigmoidoscopy

5. Vagotomy and Pyloroplasty

Gastrostomy:

Gastrectomy. Small Bowel, Resection,

Cutaneous, Ileostomy, Appendicectomy

Colostomy; Closure of colostomy, Right Hemicolectomy

-Transverse Colostomy

- Anterior Resection of the Sigmoid colon and Rectum

Hemorrhoidectomy

Pilonidal Cystectomy and Sinusectomy

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(A) Roll of OT Technician

Importance,

Infection control,

Chemical Hazards,

Pre & post operative producers.

(B) Preparation of instrument Trays

– General Surgery Trays

– Major procedures Tray

Basic/ minor Procedure Tray

-Long instrument Tray

–Choledochoscopy Tray

– Basic Rigid Sigmoidscopy Tray

– Gastrointestinal procedure Tray

- Rectal Procedures Tray

STERILISATION & O.T. APPARATUS

(A) Sterilisation & disinfection

1. Disinfection

O.T. Fumigation

Ultraviolet disinfection

2. Sterilisation

–(a) Sterilisation of sharp instruments

(b) Use of antiseptics, Spirit, Cetavelon, Savlon, Dettol ,Carbolic acid, Betadine (c) Autoclaving,

Type of Autoclave,

Working,

Principles,

Methods & details of its use.

(B)OTHER MACHINE COMMONLY USED IN O.P. : Cautery, O.P. Lights, Suction, Cardiac Monitor, Emergency Light, Pulse Oxymeter etc.

(c) DRUGS COMMONLY USED IN O.T. –

(a) Anesthetic medicines chloroform, Ether, Nitrous Oxide, Halogen etc.

(b) General Medicines Analgesics, Sedatives

(c) I.V. fluids

(d) Antibiotics

(e) Emergency drugs

(D) PRE –OPERATION CONSIDRATIONS : Phychological support of the surgical patient.

(E) PROTECTION OF THE PATIENT IN SURGERY :

Admission Procedure

– Transfer procedure

- Various positions during **operations**
- Lithotomy position, Ante- tendenlenberg's position, Kidney Position- Environmental Controls
- Electrical and Fire Hazards
- Electro-Surgery
- Operative Record
- Counting Procedure
- Sterilization
- Emergencies and Disasters

SURGICAL PROCEDURES & SPECIALITY OPERATIVE SURGERY

1. Gynaecologic and Obsteric Surgery:

Dilatation of the Cervix and Curettage of the Uterus (D & C) .

Therapeutic Abortion by Suction Curettage.

Vaginal Hysterectomy,

Anterior and/ or posterior colorrhaphy

Laparoscopy/ Hysterectomy.

Total Abdominal Hysterectomy,

Salpingo- oophorectomy,

Tubal Sterilization Tuboplasty of the Fallopian Tubes,

Cesarese Section,.

2. Genitourinary Surgery:

Hypospadias Repair,

Epispadias Repair.

Hydrocolectomy

Spermatoclectomy.

Orchectomy,

Cystoscopy,

Cystostomy,

Cystectomy,

Teansurethral Resection of the prostate (TURB)and/ or

Lesions of the Bladder Neck (TURB)

Open Prostatectomy,

Nephrectomy,

Upper tract Urolithotomy (Ureteriithotomy, Pyeloiotomy)

Nephrolithotomy,

Cutaneous Ureterostomy,

Lieal conduct,

Adrenalectomy,

Extracorporeal Shock Wave Lithotripsy (ESWL),

Ultrasonic Lithotripsy,

Electrohydraulic Lithoripsy,

3. Thoracic Procedures:

Bronchoscopy,

Mediastinoscopy,

Segmental Resection of the Lung,

Wedge Resection of the Lung,

Pulmonary Lobectomy,

Pneumectomy,

Decortication of the Lung,

Insertion of Transvenous Endocardial Pacemaker

4. Cardiovascular Surgery:

Carotid Endarterectomy

Abdominal Aortic Procedures (Abdominal Aortic),

Aneurysmectomy, Abdominal Aortic Endarterectomy),

Femoropopliteal Bypass,

Greater Saphenous Vein Ligation and Stripping,

2. Gynecologic and Obstetric Trays:

Dilatation and Curettage (D&C) Tray,

Cervical Cone Tray,

Vaginal Hysterectomy Tray,

Laparoscopy Tray,

Abdominal Hysterectomy Tray,

Cesarean Section Tray.

3. Genitourinary Trays:

Vasectomy Tray,

Open Prostatectomy Tray,

Kidney Operatio Tray.

4. Thoracic Trays:

Mediastinoscopy Tray,

Thoracotomy Tray,

Pacemaker Tray.

5. Cardiovascular Trays:

Vascular procedures Tray,

Vascular Shunt Tray,

Cardiac Procedure Tray.

6. Orthopedic Tray:

Basic orthopadic procedures Tray,

Minor orthopedic procedures Tray,

Bone Holding Instruments Tray,

Hip Retractors Tray.

7. Neurologic Procedures Trays:

Craniotomy tray,

Laminectomy Tray,

Kerrission Rongenurs and Pituitary Tray,

8. Plastic Procedures Tray:

Basic Plastic procedures Tray.

9. Otorhinolaryngologic (ENT) Tray;

Basic Ear Procedures Tray,

Nasal procedures Tray,

Myringotomy Tary,

Tonsillectomy and Adenoidectomy Tray,

Tracheostomy Tray.

10. Ophtalmic Tray:

Basic Eye Procedures Tray,

Eylied and Conjunctival Procedures Tray,

Basic Eye Muscle Procedures Tray,

Globe and Orbit procedures tray,

Corneal procedures Tray,

Cataract Extraction and Lens Procedures Tray,

Basic Eye procedures Tray, s

Glaucoma procedures Tray

Retinal Procedures tray.

11. Pediatric trays:

Pediatric Major Procedures Tray,

Pediatric Minor procedures Tray,

Pediatric Gastrointestinal Procedures tray.

Repair of Syndactyly

Skining grating

Scar release operation

Digital flexor Tendon Repair

Peripheral Nerve Repair

augmentation Mamoplasty

Abdominopasty/ abdominal

Liposuction

8. Otorhinolaryngologic (E.N.T) Surgery:

Myringotomy

- Mastoidectomy
- Tympanoplasty
- Stapedectomy
- Submucous Resection of the Nassel Septum (SMR)
- Intranasal Arthroscopy Intranasal Fenestration of the Nasoantral wall
- Caldwell- Luc Procedure (Radical Drainage of the Antrum of the Maxillar Sinuses)
- Nasal Polypectomy
- Drainage of the Frontal Sinus
- Tonsillectomy and Adenoidectomy (T and T)
- Laryngostomy
- Radical Neck Dissection
- Excision of lesion of the Oral Cavity (Practical Glossectomy with Marginal Resection of the Mandible)
- ophthalmic Surgery
- General Information
- Excision of a chalazation
- Canthotomy
- Correction of Ectropion
- Blepharoptosis Repair
- Lacrimal duct probing
- Decryocystorhinostomy
- Correction of Ectropion
- Evisceration of the Eye
- Enucleation of the Globe
- Orbital Exonerations
- Corneal Transplant/ Keratoplasty
- Cataract Extraction
- Indectomy
- Trabeculectomy-
- Excision of a Pterygium
- Repair of Retinal Detachment/ Scieral Buckling
- Vitrectomy Refractive Keratoplasty

10. Pediatric Procedures:

Pediatric General Information

- Pediatric Tracheostomy
- Branchial CLEFT Sinusectomy
- Repair of Congenital Diaphragmatic Hernia
- Omphalocels Repair
- Portosystemic Shunt
- Arteriovenous Shunt

- Arterivenous Fistula
- Cardiac procedures; Closed heart Surgery, open heart Surgery

5.Orthopedic Surgery

- Open Reduction of a carpal Bone Fracture
- Excision of a Ganglion
- Carpal Tunnel Release
- Open Reduction of the Humerus
- Open Reduction of the Radius and/ or Ulna
- Open Reduction of the olecranon process Fracture
- Repair of Recurrent Anterior Dislocation of the Shoulder
- Open Reduction of Fracture of the Humeral Head (including Humeral Head prosthesis) Internal Fixation of the Hip
- Femoral Head Prosthetic Replacement
- TotalHipReplacement
- OpenReduction of the Femoral shaft
- Triple Arthrodesis of the Ankle
- Total Ankle joint Replacement
- Open reduction of the Ankle
- Arthrotomyof the Knee
- Excision of popliteal (Baker's) Cyst
- Total Knee replacement-open Reduction or the Tibial shaft
- Correction of Hammer Toe deformity with Interphalangeal
- Fusion
- Metatarsal Head Resection
- Procedures for correction of Scoliosis
- Amputation of Lower Extremity

6. Neurological Surgery:

- Craniotomy
- Cranioplasty
 - Transphenoidal Hypophysectomy
 - Ventricular Shunts
 - Laminectomy
 - Excision of a Cervical Intervertebral Disc with Fusion, Anterior Approach –

7. Plastic Surgery:

- Cleft Lip Repair
- Cleft Palate Repair
 - Reduction of Nasal Fracture
 - Reduction of a Mandibular Fracture
 - Reduction of a Zygomatic Fracture
 - Open Reduction of an Orbital Floor Fracture-

Rhinoplasty – Mentoplaste Augmentation

– Blepharoplasty – Rhytidectomy

– Dermabrasion

–Otoplasty

- T.O.Fidtila

– Pediatric Umbilical Herniorrhapy

– Repair of Congenital Atresia of the Esophagus

– Insertion of a central Venous Cathetar (Pediatric)

– Pyioromyotomy for Congenitail Hypertrophic pyloric Stenosis

- Pediatric Gastrostomy

–Relief of Intestinal Obstruction (Pediatric)

– Redcution of Pediatric Intussusception

– Pediatric Colostomy – Pediatric Colorectal Resection for Aganglionic Megacolon/ Hirschsprung's Diseaes

– REpair of Imprforate Anus

– Neural Tube Defects Meningomyelocele .

ANAESTHESIA

-ANAESTHESIS: Including different methods and procedures for Anaesthesia; Preparation of patient for anaesthesia; Intensive care etc.

1. Anaesthesia:

General Information

– General Anaesthesia

–Conduction Anaesthesia

–Boyle's appartus-it –use Oxygen –Niotrous Oxide

2. General Anaesthesia

3. Conduction Anaesthesia

–Spinal

– Epidural

–Caudal-Regional

– Local – Topical

4. Methods for Prepration of the patients for Anaesthesia

5. Intensive care – Methods and procedures (during and after operation)