# Department of Paramedical Sciences

# Faculty of Allied Health Sciences

# SGT UNIVERSITY

Shree Guru Gobind Singh Tricentenary University

## Gurgaon-122505

Syllabus

## M.Sc. Operation Theater Technology

## Duration: 3 years (6 Semester)

W.e.f. Academic Session 2021-22

**SCHEME OF EXAMINATION**

**M.Sc. Operation Theatre Technology (MOTT)**

**SEMESTER -I**

| S.No. | Subject | Paper Code | Theory Examination | | Practical Examination | | Total Marks | Total Credits |
|---|---|---|---|---|---|---|---|---|
| | | | University Exam | Internal Exam | University Exam | Internal Exam | | |
| 1. | Anatomy | | 60 | 40 | | | 100 | 4 |
| 2. | Physiology and Biochemistry | | 60 | 40 | 60 | 40 | 200 | 4+2 |
| 3. | Clinical Pharmacology | | 60 | 40 | | | 100 | 4 |
| 4. | Clinical Pathology and Microbiology | | 60 | 40 | 60 | 40 | 200 | 4+2 |
| 5. | Applied Physics and Basic Computers | | 60 | 40 | | | 100 | 4 |
| | Total | | 300 | 200 | 120 | 80 | 700 | 24 |

**SEMESTER -II**

| S. No. | Subject | Paper Code | Theory Examination | | Practical Examination | | Total Marks | Total Credits |
|---|---|---|---|---|---|---|---|---|
| | | | University Exam | Internal Exam | University Exam | Internal Exam | | |
| 1. | Basic Medicine and Medical ethics | | 60 | 40 | | | 100 | 4 |
| 2. | Basics of Anaesthesia | | 60 | 40 | 60 | 40 | 200 | 4+2 |
| 3. | Basics of Surgery | | 60 | 40 | 60 | 40 | 200 | 4+2 |
| 4. | CSSD Procedures, Sterilization Procedures | | 60 | 40 | 60 | 40 | 200 | 4+2 |
| 5. | Research Methodology, Biostatistics and Hospital Management | | 60 | 40 | | | 100 | 3 |
| | Total | | 300 | 200 | 180 | 120 | 800 | 25 |

**SEMESTER -III**

| S. No. | Subject | Paper Code | Theory Examination | | Practical Examination | | Total Marks | Total Credits |
|---|---|---|---|---|---|---|---|---|
| | | | University Exam | Internal Exam | University Exam | Internal Exam | | |
| 1. | Anaesthesia Delivery System and Equipments used in OT | | 60 | 40 | 60 | 40 | 200 | 4 + 2 |
| 2. | Basic Procedures and Techniques | | 60 | 40 | 60 | 40 | 200 | 4+2 |
| 3. | Periop Anaesthetic techniques, Preparation | | 60 | 40 | 60 | 40 | 200 | 4+1 |
| 4. | Preparation for Various Surgeries | | 60 | 40 | 60 | 40 | 200 | 4+2 |
| 5. | Research Project | | | | | | | 2* |
| | Total | | 240 | 160 | 240 | 160 | 800 | 25 |

**SEMESTER -IV**

| S. No. | Subject | Paper Code | Theory Examination | | Practical Examination | | Total Marks | Total Credits |
|---|---|---|---|---|---|---|---|---|
| | | | University Exam | Internal Exam | University Exam | Internal Exam | | |
| 1. | Anaesthesia for specialty Surgeries and Situations | | 60 | 40 | 60 | 40 | 200 | 4+2 |
| 2. | Basic Intensive care | | 60 | 40 | 60 | 40 | 200 | 4+2 |
| 3. | Research Project | | | | 120 | 80 | 200 | 08 |
| | Total | | 120 | 80 | 240 | 160 | 600 | 20 |

***The dissertation will be evaluated in the 4th semester and the credits be counted in the 4th semester while calculating the SGPA/CGPA**

**M.Sc. OTT**
**SEMESTER-I**
Paper -1
**ANATOMY**

TotaHours 50

| S. No. | UNIT |
|---|---|
| 1. | **Introduction**<br>Human body- Overview & Organization, Anatomical terminology. |
| 2. | **Skeletal Muscles**<br>Major skeletal muscles of the Head, Neck, Thorax, Abdomen & upper and lower limbs. |
| 3. | **Upper Limb**<br>Regional and surface anatomy of the shoulder, axilla, and upper lim |
| 4. | **Lower Limb**<br>Regional & surface anatomy of the hip, thigh, legs |
| 5. | **Thorax Anatomy**<br>Regional & surface anatomy of Intercostals space, Pleura, Bony thoracic cage, Rib , Sternum |
| 6. | **Respiratory system**<br>Regional & surface anatomy of Nose, Larynx, Trachea, Lungs, Bronchial tree. |
| 7. | **Heart**<br>Regional & surface anatomy of heart, chambers of heart,<br>Regional & surface anatomy of Valves of heart, Major arteries and veins of heart, Pericardium. |
| 8. | **Alimentary System**<br>Regional & surface anatomy of Pharynx, Esophagus, Stomach, Small Intestine, Large Intestine, Spleen, Liver, Gall Bladder, Pancreas. |
| 9. | **Central Nervous System**<br>Regional & surface anatomy of Spinal Cord, Meningeal Covering<br>Regional & surface anatomy of brain |
| 10. | **Sensory Organs**<br>Regional & surface anatomy of Eyes, Ear, Tongue, Nose. |
| 11. | **Urinary System**<br>Regional & surface anatomy of Kidney, Ureters, Urinary bladder,Urethra. |
| 12. | **Male Reproductive System**<br>Anatomy of the scrotum, Prostate gland, penis & testis.<br>Epididymis, Ducts deferens, Inguinal canal, Seminal vesicles, Bulb urethral gland |
| 13. | **Female Reproductive System**<br>Anatomy of the ovaries, fallopian tubes, Uterus,<br>Vagina and external genitalia; functions of ovary. |

**SEMESTER-I**

Paper - II

Paper code –

**PHYSIOLOGY AND BIOCHEMISTARY**

**Total Hours - 40**

| S. No. | UNIT |
|---|---|
| 1. | **General Physiology**<br>-Introduction to the structure and function of cell organelles,<br>Transport across cell membrane.<br>Blood Propagation of nerve impulse, Muscle- properties-classification –excitation /contraction coupling.<br>3 Hours |
| 2. | **Blood**<br>-Blood groups and Rh factor<br>- Composition of blood, -Functions of the blood, plasma proteins<br>-Function of hemoglobin<br>- Detailed description about WBC-total count (TC), differential count (DC) and functions.<br>-Platelets – formation and normal level and functions<br>- Erythrocyte sedimentation rate (ESR)<br>5 Hours |
| 3. | **Cardio-Vascular System-**<br>-Structure & properties of cardiac muscle.<br>-Cardiac cycle, Heart rate regulation-factors affecting Heart Rate,<br>-BP: Definition, regulation, factors affecting BP,<br>-Cardiac output- Regulation & function affecting Cardiac output. |
| 4. | **Respiratory system**<br>-General organization,<br>-Mechanics of respiration,<br>- Definitions and normal values of lung volumes and lung capacities.<br>-Exchange of Gases<br>-Respiratory Failure |
| 5. | **Excretory System**<br>-Kidneys: structure & function.<br>-Maturation - neural control- neurogenic bladder,<br>-Normal urinary output<br>- Temperature Regulation, Circulation of the skin- body fluid-electrolyte balance |
| 6. | **Nervous system**<br>-Brain and spinal cord<br>-Conduction of nerve impulse<br>-Autonomic Nerves system |
| 7. | **Endocrine System**<br>Physiology of Thyroid, Parathyroid, Suprarenal glands, Pineal gland and organs with a minor endocrine function, Thyroid gland, Bulbourethral glands. |
| 8. | **Digestive System**<br>Physiology of the Mouth, Salivary glands, Pharynx, esophagus, stomach, intestine, liver pancreas, biliary system & peritoneal cavity, esophagus, stomach, small intestine, pancreas & liver. |
| 9. | **Fluids and Electrolyte, Acid Base Balance**<br>-Composition of body fluids.<br>-Acid base balance<br>-Disturbances of acid base balances(PH, alkalosis, acidosis |
| 10. | **Nutrients and Minerals**<br>Cover to Carbohydrate, -Protein,<br>-Lipid,<br>-Vitamin,<br>-Minerals |

**Practicals:** demonstration of ph meter.
Acid base titration & validation of normality equalion.
Urine analysis.
Genral tests of carbohydrates.
Genral tests of proteins.
Making of blood smear.
Dlc ,Tlc,Rbc,Esr.
Blood pressure ,Pulse.
Effect of posture on BP.
Effect of exercise on BP.

**SEMESTER-I**

Paper – III **CLINICAL PHARMACOLOGY**Total Hours - 40

| S. No. | UNIT |
|---|---|
| 1. | **Antisialagogues**<br>Atropine, Glycopyrrolate |
| 2. | **Sedatives anxiolytics**<br>Diazepam, Midazolam, Phenergan, Lorazepam, Chloropromazine, Trichlophos |
| 3. | **Narcotics**<br>Morphine, Pethidine, Fentanyl, Pentazozine, Nalbuphine, Butorphanol, Buprinorphine, Tramadol |
| 4. | **NSAIDs**<br>Diclofenac, Ketorolac, COX-2 inhibitors |
| 5. | **Antiemetics**<br>Ondansetron, Dexamethasone, Metoclopramide, |
| 6. | **Prokinetic**s<br>Metoclopromide |
| 7. | **H2 Blockers and Proton Pump Inhibitors**<br>Ranitidine, Famotidine, Omeprazole, Pentoprazole |
| 8. | **Induction agent**<br>Thiopentone,, Ketamine,<br>Propofol,<br>Etomidate |
| 9. | **Muscle relaxants**<br>Depolarising - Suxamethonium,<br>Non depolarizing -Pancuronium, Vecuronium, Atracurium, Rocuranium |
| 10. | **Inhalational anaesthetics**<br>N20, Ether,<br>Halothane,<br>Isofllurane, Sevoflurane, Desflurane,<br>Enflurane, 6 Hours |
| 11 | **Reversal agents**<br>Neostigmine, Glycopyrrolate, Atropine, Nalorphine, Naloxone, Flumazenil |
| 12 | **Local anaesthetics**<br>Lignocaine, Bupivacaine, Ropivacine, Prilocaine-jelly, Proparacaine,Emla - Ointment, Etidocaine |
| 13. | **Emergency drugs**<br>Adrenaline and its mode of administration, dilution, dosage<br>- Dopamine,<br>-Dobutamine,<br>-Isoprenaline,<br>-Nor Adrenaline, Mephenteramine<br>-Sodium Bicarbonate,<br>-Xylocard,<br>-Aminophylline, derriphyline<br>-Hydrocortisone,<br>-Antihistamlnics<br>-Antiarhythmics<br>-Vasodilators – Nitroglycerin, SNP,<br>- Bronchiolytic agents,<br>-Furosemide<br>-Mannitol<br>-Oxoytocin<br>-Methergin<br>-Diclofenac – I. V.<br>-Various Fluids – Crystalloids & colloids - Nacl, Ringer lacatate, Haemaccel, Hetastarch |

**SEMESTER-I**

Paper – IV

**CLINICAL PATHOLOGY AND MICROBIOLOGY**

Total Hours - 40

| S. No. | UNIT |
|---|---|
| 1. | **Cellular Adaptation**<br><br>Cellular adaptation,<br>-Cell injury & cell death,<br>-Cellular response to stress and noxious stimuli,<br>-Reversible and irreversible cell injury, |
| 2. | **Blood**<br>Blood Groups,<br>-Blood Transfusion,<br>-Blood components<br>-BT,CT,<br>-Transfusion Reactions |
| 3. | **Infectious diseases**.<br>General principles of microbial pathogenesis<br>-Viral infections<br>-Bacterial infections<br>- Rheumatic heart disease<br>-Fungal infections<br>-Parasitic infections |
| 4. | **Waste management**<br>Hospital waste disposals |
| 5 | **Hospital acquired infection and prevention**<br>Hospital acquired infection and prevention, |
| 6. | **Hepatitis B, C, HIV/AIDS**<br>Hepatitis B, C, HIV/AIDS<br>Causes & prevention |
| 7. | **PPE, Universal Precautions**<br>Cover PPE(Personal Protective Equipments - list) Universal Precautions- indications |
| 8. | **Decontamination and Sterilization**<br>Methods of cleaning, Decontamination and Sterilization |
| 9. | **Sample collection, Labeling and sending to Lab**<br>Cover Sample collection, Labeling and sending to Lab |

## PRACTICALS:-MICROBIOLOGY &PATHOLOGY

| Unit | Unit Title | Content |
|---|---|---|
| • | **Staining:** | • Grams staining<br>• ZN and modified ZN staining<br>• Capsular staining |
| • | **Parasitology**: | • Stool examination: S a l i n e mount, Iodine mount<br>• Stool concentration techniques<br>• Preparation of thick and thin smears<br>• Preparation and staining technique of Leishman's stain and Giemsa stain<br>• Demonstration of malarial parasite in peripheral smear<br>• Rapid test for malaria |
| • | **Mycology:** | • Demonstration of fungi using KOH , Lactophenol cotton blue and India ink<br>• Colony characteristics and Microscopic examination and identification tests for :<br>  • Candida and Cryptococcus,<br>  • Dermatophytes<br>  • Aspergillus sp<br>  • Miscellaneous fungi<br>• Slide culture technique |
| • | **Virology:** | 1. Specimen collection, principle, methods, procedure of serological tests.<br>Spot tests/ELISA : HBV, HCV, HIV, Dengue |
| • | **Waste Management:** | • Use of Colour coded bags |
| • | **Sample collection** | • Collection of specimen<br>• From Outpatient<br>• Inpatient Unit<br>• Minor OT<br>• Major OT for sterility testing |
| • | **PPE, Universal precautions** | • Demonstrate correct Hand Hygiene technique<br>• Demonstration of Personal Protective Technique. |
| • | **Sterilization** | • Demonstration of Principle and working of an Autoclave, Hot Air Oven.<br>• Visit to CSSD |
| **PATHOLOGY-** | | - Coombs test.<br>- Cross matching<br>- Bt /ct |

**SEMESTER-I**

Paper – V

Paper code –

**APPLIED PHYSICS AND BASIC COMPUTER**

Total Hours – 40

| S. No. | UNIT |
|---|---|
| 1. | **Applied Physics**<br>Basic principle of electricity applied in OT, ICU, and CSSD.<br>-Concept of static electricity, charge, potential current power, resistance.AC /DC<br>-Basic principles of heat, concept of temperature its measurement, way of dispersion of heat.<br>-Concept of volume, specific gravity, density, concentration of solute.<br>-Gas laws and their practical implications in field.<br>-Compressed gases, filling ratio, principles of pressure regulator, flow of gases, fluid viscosity, laminar flow, turbulent flow. |
| 2. | **Introduction to Computer**<br>-Computer basics, I/O devices<br>- Different operating system<br>– MS DOS<br>– Basic commands<br>– MD, CD, DIR,TYPE and COPY CON commands<br>– Networking<br>– LAN, WAN,MAN(only basic ideas)<br>– Memories, RAM and ROM, Different kinds of ROM, kilobytes.<br>-MB, GB their conversions |
| 3. | **Typing text in MS word**<br>– Manipulating text,Formatting the text<br>– using different font sizes, bold, italics<br>– Bullets and numbering<br>– Pictures, file insertion<br>– Aligning the text and justify<br>– choosing paper size , adjusting margins<br>– Header and footer, inserting page No's in a document |
| 4. | **Printing a File**<br>– Using spell check and grammar option<br>– Find and replace<br>– Mail merge<br>– inserting tables in a document. |
| 5. | **Miscellaneous**<br>-Creating table in MS, Excel<br>– Cell editing<br>– Drawing graphs and charts using data in excel<br>– Auto formatting<br>– Inserting data from other worksheets<br>– Using formulas and functions<br>– Manipulating data with excel<br>– Using short functions to sort numbers and alphabets |
| 6. | **Slides**<br>Preparing new slides using MS-POWERPOINT<br>– Inserting slides ,slide transition and animation , Using templates, Different text and font sizes |
| 7. | **Slides with Special Features**<br>Slides with sounds<br>– Inserting clip arts, pictures, tables and graphs |

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| | – Presentation using wizards |
| 8. | **Introduction to Internet**<br>Introduction to Internet<br>– Using search engine – Google search<br>– Exploring the next using Internet Explorer and Navigator<br>– Uploading and Download of files and images<br>– E-mail ID creation – Sending messages<br>– Attaching files in E-mail<br>– Writing small programs using functions and sub – functions.<br>– Introduction to “C” language – Different variables, declaration, usage |

**SEMESTER-II**

Paper – I

**BASIC MEDICINE AND MEDICAL ETHICS**

Total Hours - 40

| S. No. | **UNIT** |
|---|---|
| 1. | **Basic Disorder**<br><br>Disorder of haematopoiesis<br>- anaemias<br>- iron deficiency anaemia, |
| 2. | **Infections and Diseases**<br>- Sepsis and septic stock,<br>-Fever of unknown origin,<br>-Infective endocarditis,<br>-Infections of skin, muscle, soft tissue,<br>-Diseases caused by bacteria, viruses, mycobacterium, fungi, protozoa and helminthes,<br>- Common secondary infection in HIV |
| 3. | **Different Diseases of CVS**<br>Diseases of CVS<br>-CHF,<br>-Pulmonary Oedema,<br>-CAD,<br>-Peripheral vascular diseases (PVD) |
| 4. | **Disease of Respiratory system**<br>Asthma,<br>-pneumonia,<br>-COPD,<br>-Restrictive Lungs Disease. |
| 5. | **Kidney & Urinary Tract Disease**<br>- Acute renal failure,<br>-Glomerulonephritis,<br>-Haemodialysis,<br>-Kidneytransplant,<br>-Urinary Tract Infection |
| 6. | **Liver and Biliary Tract Disease**<br>- Viral hepatitis,<br>-Alcoholism,<br>-Liver failure,<br>-Hepatic Coma |
| 7. | **Endocrinology and Metabolism.**<br>- Diabetes mellitus,<br>-Hyperthyroidism, hypothyroidism |
| 8. | **Medical Ethics**<br>– Definition<br>-Basic principles of medical ethics<br>– Goal<br>– Scope<br>– Confidentiality |
| 9. | **Malpractice and Negligence**<br>Malpractice, Types of medical malpractice.<br>-Negligence |
| 10. | **Rational and Irrational drug therapy.**<br>Introduction to Rational and irrational drug therapy.<br>- Clinical implication of rational drug therapy.<br>- Reason and Impact of Irrational use of drug therapy.<br>3 Hours |
| 11. | **Different type of Consent**<br>Consent<br>-Different types of consents |

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| | - Right of patients |
| 12 | **Care of terminally ill – Euthanasia**<br>-What is terminally ill<br>-Care of terminally ill patients |
| 13. | **Organ transplantation**<br>What is Organ transplantation<br>-Successfully transplanted organs<br>-Policies and procedures Of organ transplantation<br>-Organ donor option |
| 14 | **Medical Legal Aspects of Medical Records**<br>– Medico – legal case and type<br>– Records and documents related to MLC<br>– ownership of medical records<br>- Confidentiality Privilege communication<br>- Release of medical information<br>- Unauthorized disclosure<br>- retention of medical records<br>- Other various aspects. |

**SEMESTER-II**

Paper – II

Paper code –

**BASICS OF ANAESTHESIA**

Total Hours - 50

| S. No. | **UNIT** |
|---|---|
| 1. | **Technical terms / Documentation**<br><br>Technical terms used in anaesthesia<br>**Importance of Record keeping in OT / ICU**<br>**-Various registers and statistics**<br>**-PAC and Anaesthesia record** |
| 2. | Phase of GA<br>-Induction,<br>-Intubation,<br>-Maintenance,<br>-Reversal,<br>- Recovery./ Emergence. |
| 3. | Drugs used during anaesthesia.<br>Drugs used during anaesthesia, their uses indication and contra indication |
| 4. | **Premedication**<br>Different drugs used for Premedication their doses, effects and side effects. |
| 5. | **I.V. Induction agent**<br>Inhalational Anaesthetic agents<br>I.V. Induction agent their doses, indication, contra indication and management<br>Properties of Inhalational anaesthetic agents, their role in GA.<br>Different volatile anaesthetic agents: Advantages and disadvantages |
| 6. | **Neuromuscular Blockers**<br>Types of drugs used for Neuromuscular blocks their doses, indication and contra indications, complications |
| 7 | **Reversal Agents**<br>Drugs used for Reversal Agents<br>their doses, indication and contra indication |
| 8. | **Steroids**<br>Steroids -<br>their doses, indication and contra indication |
| 9. | **Analgesics**<br>Drugs used as Analgesics<br>their doses, indication and contra indication<br>– Opioids / Non opiods Analgesics<br>• Infusions, PCA |
| 10. | **Emergency Drugs**<br>Emergency drug used in OT and ICU Their uses, doses, indication and contra indication<br>**-**Anticoagulants, Antiarrhythmics,<br>-Syringe pumps and infusion pumps |
| 11. | **Different Airways/ Endotracheal tubes**<br><br>Oropharyngeal / Nasopharyngeal airways<br>– Sizes, colour coding , insertion techniques.<br>-Airways Adjuvants<br>- Stylette, GEB, Lighted wand,<br>- Supraglottic Airway Devices (SADs), |

| | | |
|---|---|---|
| | -Difficult intubation trolley<br>- Tracheostomy, Decannulation protocol<br>-Types, parts, sizes of ETT<br>-Specialised ETT and uses | |
| 12. | **Suction Catheters**<br>Suction Catheters – types, sizes, colour coding, techniques of suction<br>-Suction pressure | |
| 13. | **Laryngoscope**<br>Laryngoscope – Types, Size of blades,<br>-Fiberoptic intubation / video laryngoscopy<br>-Laryngoscopic view of larynx | |
| 14. | **Spinal and Epidural needle**<br>Spinal and Epidural needle – sizes, colour coding, features, differences<br>- Epidural Catheters | |
| 15 | **Asepsis in OT**<br>Importance of OT Asepsis<br>Aseptic techniques, OT sterilization procedures<br>**-How to handle HIV, HCV, HBsAg positive cases in OT**<br>**-PPE** | |

**Practicals:** Preparations of drugs and trolley for Anaesthesia

Dilutions of different drugs, proper labelling

Differences between subarachnoid and epidural anaesthesia

Calculation of doses of various important drugs used during perioperative period

Calculation of dose from various % strengths

Gram, mg, mcg; relationship and conversions

Insertion and care of airways, SADs, laryngoscope blade

Assessment of sizes of ETT, airways, suction catheters, Laryng -oscopic blades, SADs

**SEMESTER-II**

Paper – III

Paper code –

**Basics of surgery**

Total Hours - 40

| S. No. | **UNIT** |
|---|---|
| 1. | **Basic Procedures Techniques.**<br>Scrubbing Technique,<br>-Gowning Technique,<br>-Gloving techniques. |
| 2. | **Surgical terminology and Incision**<br>Surgical terminology,<br>-Types of incision<br>-indications for the use of particular incision; |
| 3. | **Haemorrhage**<br>Signs and symptoms of internal and external haemorrhage<br>-Classification of haemorrhage<br>-Management of haemorrhage |
| 4. | **Tourniquets**<br>Types of tourniquets<br>- Uses of tourniquet<br>- Duration of tourniquet application, -Pneumatic tourniquet, application,<br>-Complication of tourniquet application |
| 5. | **Wounds and Abscess**<br>What is Wounds,<br>-Types of wounds,<br>- Wound healing,<br>-Treatment and complications of wound<br>- inflammation<br>- wound infections<br>-Causes and treatment; -Incision and drainage of abscesses;<br>-Importance of personal cleanliness and aseptic techniques |
| 6 | **Skin Preparation for Invasive Procedures**<br>Skin preparation for invasive procedures<br>-Surgical asepsis |
| 7 | **Classification of Surgical Instruments and Their Uses**<br>Classification of surgical instruments and their uses |
| 8. | **Suture Material**<br>Suture Material: Types and uses.<br>-Different Suturing Techniques.<br>-Instruments used for suturing |

**PRACTICAL :**

**-Scrubbing, gowning, gloving techniques**

**-Instruments, suture materials,**

**-Application of tourniquets, Types of incisions,**

**-Bandaging of wounds, drainage of abscess**

**SEMESTER-II**

Paper – IV

Paper code –

**CSSD PROCEDURES, STERILIZATION PROCEDURES**

Total Hours - 40

| S. No. | **UNIT** |
|---|---|
| 1. | **Introduction of CSSD**<br>Layout and location of CSSD and its role in hospital functioning. |
| 2. | **Functions of CSSD**<br>-Collection of used items from user area,<br>-Use of disinfectants<br>–Sorting and classification of equipment for cleaning purposes, sharps, blunt lighted etc, contaminated high risk items, delicate instruments or hot labile instruments.<br>-Documentation, staff, dress protocol |
| 3. | **Cleaning process in CSSD**<br>-Various methods of cleaning<br>-Use of detergents. -Mechanical cleaning apparatus,<br>-Cleaning instruments, Cleaning jars, receivers bowls etc. trays, basins and similar hand ware utensils.<br>-Cleaning of catheters and tubing,<br>- cleaning glass ware, cleaning syringes and needles. |
| 4. | **Packing in CSSD**<br>Materials used for wrapping and packing –Assembling pack contents.<br>-Types of packs prepared.<br>-Method of wrapping<br>- Labeling:Date , contents, initials<br>-Use of indications to show that a pack of container has been through a sterilization process |
| 5. | **Different Methods of Sterilization**<br>-Principles of sterilization and disinfection<br>-Methods of decontaminations<br>- Moist heat sterilization.<br>-Dry heat sterilization. -EO gas sterilization.<br>-H202 gas plasma sterilization<br>-Irradiation: Gamma sterilisation<br>- Sterilisation control: Indicator agents |
| 6. | **Autoclaving Machine**.<br>Uses and maintenance of autoclaving machine.<br>Mechanism of Autoclaving Machine |
| 7. | **Duties of CSSD Technician**<br>Duties of CSSD Technician |
| 8 | **Disinfection and sterilization of OT and equipments/ Waste management**<br>-Sterilisation of OT:<br>-Fumigation method, Fogging machine and agents<br>-Carbolisation<br>-Decontamination of spillage of infected material<br>-Monitoring protocols for sterilization of OT<br>-Critical, semicritical, noncritical equipments<br>-Methods of disinfection: High level and Low level disinfection<br>-Various techniques of sterilization and disinfections of items, Decontamination procedure<br>-Antiseptics, sterilants, sanitization<br>**-Segregation and disposal of hospital waste**, |

**PRACTICALS:**

- **-Complete steps in operation of autoclave, its maintenance protocol**
- **-Documents to be maintained in CSSD**
- **-Various physical, chemical methods of sterilization**
- **-Cleaning and sterilization of OT**
- **-Methods to decrease infections in OT**

**SEMESTER-II**

Paper – V

Paper code –

# Research Methodology, Biostatistics and Hospital Management

**Total Hours- 60**

| S. No. | **UNIT** |
|---|---|
| 1. | **Introduction research methodology**<br>Introduction to research methods,<br>Variable in research<br>Reliability and validity in research<br>Conducting a literature review<br>Formulation of research problems and writing research questions<br>Hypothesis, Null and research Hypothesis, Type I and type<br>II errors in Hypothesis testing |
| 2. | **Data collection**<br>Experimental and non experimental research designs,<br>Sampling methods, data collection, observation method,<br>Interview method, questionnaires and schedules construction<br>5 Hours |
| 3. | **Research Frame work**<br>Ethical issues in research,<br>Principles and concepts in research ethics-confidentiality and privacy informed consent,<br>Writing research proposals,<br>Development of conceptual framework in research |
| 4. | **Introduction to statistics**<br>Introduction to statistics<br>Classification of data, source of data,<br>Method of scaling- nominal, ordinal, ratio and interval scale<br>Measuring reliability and validity of scales |
| 5. | **Data sampling**<br>Measures of central tendency,<br>Measures of dispersion, skewness and kurtosis,<br>sampling, sample size determination.<br>Concept of probability and probality distributions- binomial probability distribution, poison probability distribution and normal probability distribution |
| 6. | **Data correlation**<br>Correlation-Karl person, spearman's rank correlation methods regression analysis, testing hypothesis-chi square test, student's test, NOVA |
| 7. | **Health care – an overview**<br>.Functions of Hospital administration<br>Modern techniques in Hospital management<br>Challenges and strategies of Hospital management<br>Administrative Functions–<br>Planning, Organizing, Staffing, Leading and Controlling Organizational Structure,<br>Motivation and leadership.<br>Designing health care organization |

| | |
|---|---|
| 8. | **Hospital Management**<br>Medical record, House-keeping services<br>Laboratory performance.<br>Management of biomedical waste.<br>Total patient care – indoor and outdoor.<br>Nursing and ambulance resources.<br>Evaluation of hospital services<br>Quality assurance.<br>Record reviews and medical audit |

**SEMESTER-III**

Paper – I

Paper code –

**ANAESTHESIA DELIVERY SYSTEM & AND EQUIPMENTS USED IN OT**

Total Hours - 45

| S. No. | UNIT |
|---|---|
| 1. | **Medical Gas Supply**<br>- Compressed gas cylinders, colour coding, Types of cylinders (E&H), handling and storing of cylinders<br>- Cylinder valves; pin index safety system (PISS), pressure regulator, safe handling of cylinders<br>- Gas piping system / Manifold Room / DISS<br>- Recommendations for piping system<br>- Alarms & safety devices.<br>- Oxygen Concentrator: Mechanism, functioning, maintenance<br>-Liquid Oxygen |
| 2. | **Modern Anaesthesia machine**<br>Different parts of Modern Anaesthesia machine<br>-Functioning of Anaesthesia WorkStation<br>-Checklist of Modern Anaesthesia machine before use<br>-Safety features in Modern Anaesthesia machine vs Basic Boyles Apparatus<br>- Scavanging system: Role in modern anaesthesia practice<br>- Anaesthesia Ventilator:<br>-Modes of ventilator<br>- Working principles<br>- Alarms and settings |
| 3. | **Breathing Systems**<br>-General considerations: humidity & heat<br>-Common components - connectors, adaptors, reservoir bag, expiratory valve.<br>-Methods of humidification.<br>-Classification of breathing system<br>-Mapleson system – A, B, C, D, E, F<br>-Jackson Rees system,<br>- Bains circuit<br>-Non rebreathing valves - ambu valves<br>-The circle system – Components, advantages, disadvantages |
| 4. | **Diathermy / Cautery**<br>-Diathermy /Cautery machine<br>– Types, Uses,<br>-Precautions |
| 5. | **Defibrillators**<br>Uses of Defibrillators / AED<br>-Types of defibrillators<br>-Selection of charge for defibrillation, Position of Pads<br>-Precaution during defibrillation<br>-Care and handling |
| 6. | **Monitors**<br>-Multiparameter monitors<br>-ECG , -Temperature<br>-IBP / NIBP, -CVP<br>-Pulse oximeter: Types of probes, precautions<br>-ETCO2 monitor<br>-FIO2, inhalational gas monitoring<br>-ABG machine, sampling of arterial blood<br>-Care of monitoring equipments |
| 7. | **OT Table, OT lights, C Arm , HVAC system**<br>-Types of OT tables, positions, care and handling<br>-Types of OT lights, specifications<br>-Functioning and handling of C arm |

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| | -Humidification, ventilation, Air conditioning system |
| 8. | **Suction machine**<br>Types of Suction machine,<br>-Pressure setting for various requirements<br>- Suction Catheter – Sizes, Colour coding |

**PRACTICALS: (Anaesthesia Delivery system and Devices)**

**-Maintenance and upkeep of anaesthesia machine, monitors, accessories**
**-Recognising various breathing circuits, basic components, assembling**
**-Setting up of various alarms, functioning of ventilator, setting alarms, modes, etc.**
**-Checking for leaks, Cockpit drill, Safety features of modern anaesthesia machine**
**Parts of modern Anaesthesia work station, handling of gas cylinders**
**Safety features in Anaesthesia machine**
**Hazards in OT and their prevention**
**Handling of OT table, OT lights, C arm,**
**Air conditioning system in OT, HEPA filters, Laminar air flow**

**SEMESTER-III**

Paper – II

Paper code –

**BASIC PROCEDURES AND TECHNIQUES**

Total Hours - 40

| S. No. | UNIT |
|---|---|
| 1. | **I.V. Cannulation**<br>Sizes, Colour Coding, Technique of i.v. cannulation,<br>-Preparation of I.V. drip,<br>-Types of fluids,<br>-Precaution during IV cannulation |
| 2 | **Central Venous Cathetrisation And CVP**<br>Role,<br>- Types, sizes<br>-Locations<br>-Positions, Technique, Precautions<br>-Complications |
| 3 | **Arterial Cannulation**<br>-Significance,<br>-Locations, types, sizes<br>-Technique,<br>-Complications |
| 4. | **Intubation**<br>**Technique of endotracheal intubation**<br>**Insertion of SGADs (LMA, I -Gel etc)**<br>**Cuff inflation and pressure**<br>**Difficult intubation kit**<br>Sellick manoeuvre,<br>BURP Technique |
| 5. | **Bandaging And Splinting**<br>Types of bandages and various techniques<br>-Scalp bandage, Figure of 8, Bandages of Eye / Ear<br>-Splinting Techniques, Use of Splints / Crape Bandage<br>-Pressure Points, Emergency Torniquet<br>6 Hours |
| 6 | **Drainage Of Abscess**<br>Cleaning,<br>-Incision,<br>- Drainage,<br>- Bandaging |
| 7. | **Foley Catheter**<br>- Types, sizes<br>- Insertion Technique<br>-Sterile precautions |
| 8. | **Nasogastric Tube**<br>-Size, uses<br>-Techniques of Insertion |
| 9. | **Face Masks & Airways, Laryngoscopes,CPR**<br>• Types of masks: Open and closed<br>• -Sizes,<br>- Technique of holding Anaesthesia mask<br>-Airways – Types, Sizes, insertion technique<br>-Laryngoscopes – Types, Parts<br>-Endotracheal tubes - Types, sizes, Specialised ETT, Double lumen tubes (DLT), etc<br>-Supraglotic Airway Device (SGADs): Types, sizes<br>-Checking tube position, complications.<br>-Difficult Intubation Trolley / Tray<br>-Types of Oxygen masks<br>**-Basic CPR Protocol: CAB** |

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| 10. | **Making Of Various Dilution Of Drugs**<br><br>• Meaning of % , 1:1000, 1:200000 etc.<br>• Macrodrip / Microdrip / mcg / ml<br>• Drop Factor<br>• Drops per min, infusion rate calculation<br>• Mcg / mg / gm Conversion<br>• Making 2.5 % solution from 1 gm / 0.5 gm of Thiopentone powder. |
| 11 | **Baby Resuscitation Trolley**<br>Contents of baby resuscitation trolley<br>-Uses<br>-Things to remember<br>-Check list |

**PRACTICAL:**

-Procedure for IV cannulation, CV cannulation, arterial cannulation

-Technique of endotraceal intubation, insertion of Foley's catheter, NG tube

-Calculation of ml of drug required from a given % of drug

-Method of holding resuscitation mask, triple airway manoeuvre

**SEMESTER-III**

Paper – III

Paper code –

**PERIOP ANAESTHETIC CARE AND PREPARATIONS**

Total Hours - 40

| S. No. | **UNIT** |
|---|---|
| 1. | **Types Of Anaesthesia**<br>• Anaesthesia Techniques<br>• Phases of GA,<br>• Balanced anaesthesia, TIVA<br>• Regional Anaesthesia Techniques<br>• IVRA, CNB, Plexus Block , Topical<br>• Sedation / MAC<br>• Complication of GA / RA |
| 2. | **Pre-Op Check (PAC)**<br>• Pre anaesthetic assessment.<br>• History – past history - disease / Surgery / and personal history - Smoking / alcohol / drugs / medication<br>• General physical assessment, systemic examination – CVS, RS, CNS<br>• Investigations – Haematological, Urine, ECG, Chest X- ray, Endocrine, Hormonal assays, Echocardiography, angiography, Liver function test, renal function test.<br>• ASA grading - I, II, III, IV, V |
| 3. | **Duties Of OT Technician In Pre Operatve Room**<br>• Patient check List : Protocol<br>• Part preparation,<br>• Consent, PAC, Investigations,<br>• NPO Status, OT Dress,<br>• Lipstick/ Nailpolish,Premedication<br>• Basal parameters<br>• I.V. Line, Premedication |
| 4. | **Pre Operative Checklist /Cockpit Drill**<br>• Anaesthesia Machine / Gas Supply<br>• Suction Machine<br>• Monitors anaesthesia<br>• Airway Devices – Laryngoscope, Airways, ETT, Stylette, tape gelly.<br>• I.V. Cannula, I.V.fluids<br>• Drugs – Anaesthesia related and Emergency .<br>• Special preparation – As per specific patient need.<br>• Difficult intubation tray: Contents |
| 5. | **Post Operative Care**<br>• PACU, Discharge Criteria<br>• Modified Aldrete Score<br>• Five Vital Signs<br>• PONV<br>• Bladder Distension<br>• Pain management |

**PRACTICALS:**

-Setting of trolley for GA and Regional Anaesthesia

-Rapid sequence intubation, Sellick's manoeuvre (Cricoid pressure)

-Monitoring of patient in PACU, setting of alarms

-Post op management of pain, nausea, vomiting, bladder distension

**SEMESTER-III**

Paper – IV

Paper code –

**PREPARATION FOR VARIOUS SURGERIES**

Total Hours - 50

| S. No. | **UNIT** |
|---|---|
| 1. | **Preparation of OT**<br>• Preparation of OT before surgery |
| 2. | **Positions of patient**<br>• Positions of patient for different surgeries |
| 3. | **Maintenance of Instruments.**<br>• Handling of instruments<br>• Cleaning of instruments<br>-Maintenance of instruments |
| 4. | **Instrument Requirement for Common Surgical Procedures**<br>Instrument requirement for common surgical procedures such as<br>• Herniorrhaphy,<br>• Appendicectomy,<br>• Laparotomy,<br>• Mastectomy,<br>• I&D,<br>• Hydrocele,<br>-Intestinal Obstruction |
| 5. | **Instruments for Obstetric and Gynecological surgeries**<br>-Instruments required for different obstetric surgeries<br>-Instruments required for different Gynecological surgeries<br>-Types of obstetric and Gynaecologic surgeries |
| 6. | **Preparation and Position for Urological Surgeries**.<br>-Brief description of different Urological Surgeries.<br>-Preparation for different Urological Surgeries.<br>-Position for different Urological surgeries |
| 7. | **Orthopedics surgeries**<br>Brief description of different orthopedics Surgeries.<br>-Preparation for different orthopedics Surgeries.<br>-Position for different orthopedics surgeries<br>-Instruments required for different orthopedics surgeries |
| 8. | **Neurological Surgeries**<br>Brief description of different Neurological Surgeries.<br>-Preparation for different Neurological Surgeries.<br>-Position for different Neurological surgeries<br>-Instruments required for different Neurological surgeries |
| 9. | **Ophthalmology Surgeries**<br>Brief description of different Ophthalmology Surgeries.<br>-Preparation for different Ophthalmology Surgeries.<br>-Position for different Ophthalmology surgeries<br>-Instruments required for different Ophthalmology surgeries |
| 10 | **Otorhinolaryngologic Surgeries**<br>Various Otorhinolaryngologic Surgeries and Instruments required for them<br>-Preparation of trolleys for ENT surgeries<br>-Preparation of different dilutions of adrenaline: 1: 50,000, 1: 100,000, 1: 200,000, etc |

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| 11. | **Reconstructive Surgeries.**<br>Brief description of different Reconstructive Surgeries.<br>-Preparation for different Reconstructive Surgeries.<br>-Position for different Reconstructive surgeries<br>-Instruments required for different Reconstructive surgeries |
| 12 | **Thoracic, Cardiac, Vascular surgeries.**<br>Brief description of different Thoracic, Cardiac, Vascular Surgeries.<br>-Preparation for different Thoracic, Cardiac, Vascular Surgeries.<br>-Position for different Thoracic, Cardiac, Vascular surgeries<br>-Instruments required for different Thoracic, Cardiac, Vascular surgeries |

**PRACTICALS:**

**-Preparation of OT for various surgeries**

**-Familiarisation with special instruments used for various sub specialities**

**-Carbolisation of OT**

**-Preparation of trolleys for various types of sub specialities of surgeries**

**-Cleaning , disinfection and storage of various instruments**

**SEMESTER-IV**

Paper – I

Paper code –

**ANAESTHESIA FOR SPECIALITY SURGERIES AND SITUATIONS**

Total Hours -50

| S. No. | **UNIT** |
|---|---|
| 1. | **NEURO ANAESTHESIA**<br>Glassgow coma scale<br>-Special investigation -CT, Angiography and MRI<br>-Anaesthesia Techniques for Neuro surgeries<br>-Reinforced Endotracheal tubes<br>-Positioning in neuro surgery<br>-I.C.P.<br>-Air embolism |
| 2. | **OBSTETRIC ANAESTHESIA**<br>Differences between a pregnant and a normal lady<br>-Risks for anaesthesia.<br>-Precautions to be taken<br>-Check list<br>-Regional vs General anaesthesia<br>-Resuscitation of the new born, apgar score<br>-Preparation for emergency LSCS<br><br>**Emergencies**<br>-Manual removal of placenta<br>- A.P .H.<br>-P.P.H.<br>-Ruptured uterus<br>-Ectopic pregnancy |
| 3. | **PAEDIATRIC ANAESTHESIA**<br>Check list for pediatric Anaesthesia<br>-Premedication – modes, drugs, doses<br>-Pediatric circuit<br>-Pain management |
| 4. | **ENT ANAESTHESIA**<br>- Anaesthesia for adenotonsillectomy<br>-Anaesthesia for mastoidectomy<br>- Anaesthesia Bronchoscopy and oesophagoscopy<br>- Nasal Intubation – Preparation and Technique<br>-RAE endotracheal tubes : Indications |
| 5. | **CARDIAC ANAESTHESIA**<br>Arrhythmias<br>-Angina<br>-Dyspnoea<br>-Special investigations<br>-ECHO cardiography/ TEE<br>-Angiography<br>-Setting up of monitoring system<br>-Monitoring - invasive and non – invasive<br>- Transferring the patient to ICU.<br>- Chest tube management<br>-NYHA classification<br>- Cardiopulmonary bypass<br>-Weaning of CPB |

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| 6. | **ANAESTHESIA OUTSIDE THE O.T.**<br>• Cath Lab<br>• Radiology<br>• E.C.T.<br>• Risk and preventive measures |
| 7. | **DAY CARE ANAESTHESIA**<br>• Special features<br>• Patient selection<br>• Advantages<br>• Disadvantages<br>• Anaesthesia Techniques |
| 8. | **GERIATRIC ANAESTHESIA**<br>• Physiological changes<br>• Diseases of aging<br>• Nervous system<br>• Geriatric pharmacodynamics / pharmacokinetics<br>Postoperative cognitive dysfunction |
| 9. | **ANAESTHESIA FOR TRAUMA & SHOCK**<br>-Resuscitation<br>-Pre-op investigation / assessment<br>-Circulatory management<br>-Management of anaesthesia<br>Rapid sequence induction – Cricoid pressure<br>-Other problems |
| 10. | **THORACIC ANAESTHESIA**<br>-Pulmonary function tests and lung volume<br>- Bed side tests<br>-Vitallograph<br>- One lung Anaesthesia,<br>-Double lumen tubes, Bronchial blockers |
| 11. | **POSTOPERATIVE PROBLEMS**<br>-Nausea & Vomiting<br>-Sore throat<br>-Laryngeal granuloma<br>-Neurological complications.<br>-Awareness<br>-Vascular complications.<br>-Trauma to teeth<br>-Headache<br>-Backache<br>-Ocular complications<br>-Auditory complications |

**PRACTICALS:**

**-Familiarisation with all instruments used in different types of surgeries**

**-Positions of patients and OT table for various surgeries**

**-Use of double lumen ETT, bronchial blockers,**

**-Preparations for anaesthesia and surgeries for different age groups**

**-Resuscitation in trauma, Care of patients in PACU**

**SEMESTER-IV**

Paper – II

Paper code –

**BASIC INTENSIVE CARE**

Total Hours - 40

| S. No. | **UNIT** |
|---|---|
| 1. | **MONITORING AND DIAGNOSTIC PROCEDURES IN I.C.U.**<br>- Clinical Monitoring<br>- Central Venous access.<br>- ECG monitoring.<br>- NIBP – Cuff sizes and application<br>- Multiparameter monitor – Normal values<br>-PCT, Surgical Tracheostomy<br>-ICD<br>-USG<br>- Invasive hemodynamic monitoring, Cardiac Output |
| 2. | **GENERAL CARE OF PATIENT IN I.C.U.**<br>-Care of unconscious patient<br>-Syringe pump / Infusion Pump uses, infusion rate.<br>-Vascular lines - arterial, venous line<br>- Radiography / USG<br>-Physiotherapy - chest physiotherapy<br>-Oxygen Therapy<br>– Sources of oxygen,<br>-Oxygen Delivery devices,<br>-Oxygen Toxicity,<br>-Monitoring Hypoxia |
| 3 | **INFECTIONS IN ICU**<br>Ventilator Associated Pneumonia (VAP)<br>-Prevention of infection in ICU |
| 4. | **ACID - BASE DISORDERS AND FLUID BALANCE**<br>-ABG analysis, Normal ABG value<br>-Arterial cannulation<br>-Crystalloid and colloids: Differences, indications<br>-Monitoring drip rate<br>-Fluid balance : Intake/output chart |
| 5. | **COMMON DRUGS USED IN ICU**<br><br>-Inotropic support<br>- Vaso dilator drugs.<br>-Vasopressor<br>-Antiarrhythamic drugs<br>-Bronchodilators<br>-Sedatives & Hypnotic<br>-Anticoagulant drugs<br>-Anticonvulsants<br>-Neuromuscular blockers |
| 6. | **TRAUMA**<br>-Head Injury<br>-Glasgo coma score (GCS)<br>-AVPU Assessment<br>-Fluid Resuscitation in Trauma<br>-Polytrauma |

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| 7. | **PRINCIPLES OF TRANSFUSION THERAPY**<br>-Blood Grouping and cross matching<br>-Whole blood, packed RBC<br>-Plasma components and indications<br>-Complication of Blood Transfusion<br>-Anaphylactic reaction |
| 8. | **ICU VENTILATORS**<br>-Basic respiratory parameters<br>-Basic ventilators settings and modes<br>-Monitoring and alarms<br>-Weaning process<br>-Complications of ventilator<br>-Care of patient on ventilator<br>-Suctioning of ETT / Tracheotomy tube<br>-NIV : CPAP, BIPAP<br>- Handling and disinfection of ventilators<br>-Tracheotomy – Indications, Technique,care<br>- Decannulation Procedure |
| 9. | **NUTRITION ICU PATIENT**<br>-NG tube insertion<br>-Parenteral Nutrition<br>– Types, Techniques, complications.<br>-Enteral Nutrition |
| 10. | **CARDIOPULMONARY RESUSISTATION**<br>-Causes of cardiac arrest and types<br>-Basic life support outside hospital<br>-Triple Airway Manoeuvre<br>-AMBU Bag<br>-BLS Protocol for adult / children<br>-BLS Protocol for infants<br>-Chest compression technique<br>-Use of AED / Defibrillator<br>-Drugs used in Cardiac arrest |

PRACTICALS:

Familiarisation with handling and use of various items and equipments used in ICU

Care of unconscious patients

Care of patient on ventilator, ventilator alarms

Preparation of trays for various emergency procedures

Modes of ventilation, , ventilator settings,

use of defibrillator and AED

Handling of ABG analyser, ABG analysis, normal values

Vital parameters, normal ranges, maintenance of monitors and other equipments

**SEMESTER-IV**

Paper – III

Paper code –

**RESEARCH PROJECT**

The research project is to be carried out over a period of approximately 6 months and will be carried out in the hospitals, subject to approval by all concerned. Each student will select research project with their respective supervisors. The projects will be selected such that a student can reasonably be expected to make an original contribution to the chosen area of research within the time period allotted. The purpose of the project is to provide the student with training in academic research and acquisition of practical skills, including the design of a research project, planning of experiments, dealing with practical problems, recording of, presenting and analyzing data.

**Unit I- Research Project Proposal Development** is an independent tutorial conducted by the student's advisor, and involves a comprehensive literature survey of the chosen research area. Through regular meetings, the student and advisor discuss this literature in detail and the topic for research project will be finalized in the third semester.

**Unit II- Research Project** Each student must submit to the university with the signed approval of the advisor, a research project proposal defining the research project project, the methods and design of the experiments needed for completion, the progress to date and plans for completion in the third semester.

**Unit III – Research Project preparation**: This is involving preparation of the research project. The research project must include a cover page, abstract, table of contents, introduction of the thesis topic with a comprehensive review of literature, appropriately organized methods, results and discussion section for the experiment performed and final conclusions section summarizing the outcome of the project. The student should submit a draft of the research project to the advisor by the end of the fourth semester.

**CARE OF PATIENTS IN PACU**

M.Sc. OPERATION THEATRE TECHNOLOGY ($4^{TH}$ SEM)

| L | T | P | Credits | Examination: 60 Marks |
|---|---|---|---|---|
| 3 | 1 | 4 | | Int. Assessment: 40 |
| | | | | Total Marks: 100 |

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|---|---|---|
| UNIT:- 1 | PACU | • DEFINITION<br>• LOCATION OF PACU<br>• Layout and facility of PACU<br>• Recovery of phases<br>• Discharge criteria |
| 2. | Monitoring and Care of patients in PACU | • Monitoring:-<br>• Basic monitoring<br>• CVS monitoring<br>• Respiratory monitoring<br>• Neuromuscular monitoring<br>• Care of conscious patients<br>• Care of unconscious patients |
| 3. | Complications and Managements | • Most common complications in PACU:<br>• Hypoxia<br>• Hypercapnia<br>• Hypocapnia<br>• Hypotension<br>• Hypertension<br>• dysrhythmias |

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| | | • Anaphylactic reaction<br>• Confusion |
| 4. | Drugs used in PACU | • Anticholinergic drugs<br>• Anticonvulsant drugs<br>• Vasopressor and vasodilator.<br>• Bronchodilator.<br>• Anti-allergic drugs<br>• Analgesics<br>• Anti-anaphylactic<br>• Antiemetic's |
| 5. | Acid - base disorders and fluids | • Normal ABG value<br>• ABG analysis,<br>• Arterial cannulation<br>• Crystalloid and colloids fluids<br>• Fluid balance : Intake/output chart |
| 6. | Equipment's used in PACU | • Folly 's catheter and insertion technique<br>• Ryes tube insertion technique<br>• Content of emergency trolley in PACU<br>• Defibrillator |
| 7. | Oxygen delivery devices | • Nasal prongs<br>• Simple face mask<br>• Rebreathing mask<br>• Partial rebreathing mask<br>• Non rebreathing mask<br>• Venturi mask |

# CARE OF PATIENTS IN PACU

**(PRACTICAL)**

**1**. Maintenance of equipment's in PACU

2. Care of unconscious patients

3 Preparation of emergency trays of drugs for various emergency procedures

4. Use of defibrillator

5. Handling of ABG analyser and normal values

6. Vital parameters, normal ranges,

7. Central pipe lines of oxygen, suction, air