

## Bachelor of Vocation (Operation theatre technology)

### B.Voc. (OTT)

### Year 1 (Diploma)

I Semester				
S.No.	Course Code	Subject	Content Type	Credit
1	BVOTT-101	Human Anatomy & Physiology-1	Gen	4
2	BVOTT-102	Bio Medical Waste management	Skill	4
3	BVOTT-103	Introduction to Bio-Chemistry	General	4
4	BVOTT-104	First Aid and Bandaging	Skill	3
5	BVOTT-105	<b>Fundamentals of computer</b>	Gen	3
6	BVOTT-106	<b>General English</b>	Gen	3
7	BVOTT-107	<b>Personal Grooming</b>	Gen	2
8	BVOTTP-1	Vocational Practical	Skill	13

II Semester				
S.No.	Course Code	Subject	Type of Course	Credits
1	BVOTT-201	Human Anatomy & Physiology -2	Skill	4
2	BVOTT-202	OT Equipment Management	Skill	2
3	BVOTT-203	Elementary Nursing	Skill	4
4	BVOTT-204	Clinical Pathology	Skill	4
5	BVOTT-205	<b>Communication Skills - I</b>	Gen	3
6	BVOTT-206	<b>Computing Skill – I</b>	Gen	3
7	BVOTTP-2	Vocational Practical	Skill	13

## Bachelor of Vocation (Operation theatre technology)

### B.Voc. (OTT)

#### Year 2 (Advanced Diploma)

III Semester				
S.No.	Course Code	Subject	Type of Course	Credits
1	BVOTT-301	Applied Anatomy & Physiology	Skill	4
2	BVOTT-302	Principle of Anesthesia	Skill	3
3	BVOTT-303	Basics of Equipment and OT Tray Set up	GEN	4
4	BVOTT-304	Clinical Pharmacology	Skill	3
5	BVOTT-305	<b>Financial Literacy</b>	General	3
6	BVOTT-306	<b>Digital Literacy</b>	General	2
7	BVOTT-307	<b>Basics of Legal &amp; HR Policies</b>	General	3
8	BVOTTP-3	Vocational Practical	Skill	13

IV Semester				
S.No.	Course Code	Subject	Type of Course	Credits
1	BVOTT-401	Basic Aesthetical Techniques	SKILL	4
2	BVOTT-402	Community Health Nursing and Communicable Disease	SKILL	4
3	BVOTT-403	Essential Critical Care and Nursing Skills	GEN	4
4	BVOTT-404	OT Techniques in EYE and E.N.T	Gen	2
5	BVOTT-405	<b>Functional English II</b>	Gen	2
6	BVOTT-406	<b>Basics of Accounting</b>		
7	BVOTT-407	Medical Law & Ethics	Gen	4
8	BVOTTP-4	Vocational Practical	Skill	13

## Bachelor of Vocation (Operation Theatre Technology)

### B.Voc. (OTT) Syllabus

#### Year 3 –B.Voc Degree

V Semester				
S.No.	Course Code	Subject	Type of Course	Credits
1	BVOTT-501	Basics of Surgery	Skill	3
2	BVOTT-502	CSSD Procedures	Skill	3
3	BVOTT-503	Regional Aesthetic Techniques	Gen	4
4	BVOTT-504	Basic Intensive Care	Skill	3
5	BVOTT-505	<b>Communication Skills II</b>	Gen	3
6	BVOTT-506	<b>Health and Fitness</b>	Gen	2
7	BVOTT-507	<b>Basics of Economics &amp; Markets</b>	Gen	3
8	BVOTTP-5	Vocational Practical	Skill	13

VI Semester				
S.No.	Course Code	Subject	Type of Course	Credits
1	BVOTT-601	Anaesthesia for Special Surgeries	Skill	4
2	BVOTT-602	Hygiene , Sanitation Nutrition ,Dietics	Skill	4
3	BVOTT-603	Clinical Microbiology	Skill	3
4	BVOTT-604	<b>Entrepreneurship</b>	Gen	3
5	BVOTT-605	<b>Employment Readiness</b>	Gen	3
6	BVOTTP-6	Vocational Practical	Skill	13

## **OPERATION THEATRE TECHNOLOGY**

### **Year 1 (Diploma)**

#### **Semester I**

#### **BVOTT -101 BASICS OF HUMAN ANATOMY AND PHYSIOLOGY-1**

##### **UNIT-1**

Anatomy : Introduction to human body , definition of anatomy, planes, position and movement of human body, anatomy of head and neck, cranial cavity, mouth pharynx, nose, pectoral region, shoulder, scapular region, upper and lower limbs ,bones and joints, pericardium and heart, lungs , diaphragm, trachea, esophagus, thoracic duct, brief introduction of skeletal system, organization of skeleton, definition, classification, constituents of bones and bone tissue, growth and development of bones, bones of cranium, electronic microscopic structure of cell, Structure of arteries, veins and capillaries

##### **UNIT-2**

Anatomy : Tissue- classification, functions and structure of primary tissues – epithelial tissue, connective tissue, muscular tissue, nervous tissue, function of arteries, veins and capillaries, cardiac cycle and heart sound, factors affecting heart rate and its regulation, physiological variations, factors controlling blood pressure, hemorrhage and shock, disease related to cardiovascular system, definition and classification of muscular tissue, characterization of skeletal, smooth, cardiac muscles, types of cartilage, skeletal, smooth and cardiac muscle.

##### **UNIT-3**

Physiology: introduction on physiology, cell-description of cell and its components, functions of cell, homeostasis, basics about different organs and systems, structure and functions of urinary system, organs of urinary system, glomerular filtration, physiology of urine formation, functions of kidney, glomerular filtration rate.

##### **UNIT-4**

Physiology: Introduction to blood and its components, functions of RBCs, WBCs and platelets, difference between serum and plasma components and organs of lymphatic system, introduction to reproductive system, structure and functions of male and female reproductive organs, parts of male and female reproductive organs.

## **BVOTT -102 BIOMEDICAL WASTE MANAGEMENT**

### **UNIT-1**

Introduction to bio medical waste management: definition of bio medical waste management, hazards of bio medical waste and its management, infection control, principles of bio medical waste management.

### **UNIT-2**

Categories of BMW: Different waste category, different types of waste, to manage bio medical waste in the work place, disposal of laboratory waste.

### **UNIT-3**

Color coding: Use of different colors of bags, describe waste management in hospital, need for bio medical waste, history of bio medical waste, problems associated with BMW, waste treatment.

### **UNIT-4**

Bio safety: components of safety in Operation Theater, personal protective equipments, cleaning and disinfecting medical equipments, sterilization basic care of OT.

## **BVOTT -103 INTRODUCTION TO BIO- CHEMISTRY**

### **UNIT-1**

Introduction to Laboratory apparatus: Pipettes- different types (Graduated, volumetric, Pasteur, Automatic etc.), Burettes, Beakers, Petri dishes, depression plates. Flasks - different types ) Volumetric, round bottomed, Erlenmeyer conical etc. Funnels - different types (Conical, Buchner etc.), bottles - Reagent bottles - graduated and common, Wash bottles - different type Specimen bottles etc., measuring cylinders, Porcelain dish, tubes - Test tubes, centrifuge tubes, test tube draining rack etc.

### **UNIT-2**

Maintenance of lab glass ware and apparatus: Glass and plastic ware in Laboratory use of glass: significance of boro silicate glass; care and cleaning of glass ware, different cleaning solutions of glass care and cleaning of plastic ware, different cleaning solutions etc.

### **UNIT-3**

Instruments 1 (Theory and demonstration) : Diagrams to be drawn

Water bath: Use, care and maintenance

Oven & Incubators: Use, care and maintenance.

Water Distillation plant and water deionizers. Use, care and maintenance

Refrigerators, cold box, deep freezers - Use, care and maintenance

Reflux condenser: Use, care and maintenance  
Centrifuges (Theory and demonstration) Diagrams to be drawn  
Definition, Principle, Svedberg unit, centrifugal force, centrifugal field rpm.

## **UNIT-4**

Instruments 2: Laboratory balance diagrams to be drawn  
Manual balances: Single pan, double pan, trip balance  
Direct read out electrical balances.  
Use care and maintenance: Colorimeter and spectrophotometer Principle  
Use, care and maintenance: pH meter principle, parts, Types of electrodes, salt bridge solution.  
Use, care and maintenance: Ph meter and electrodes.

## **BVOTT -104 FIRST AID AND BANDAGING**

### **UNIT-1**

First Aid 1: Definition of first aid, scope, principles and essentials, methods of approach and qualifications of a first aider. Wounds, Snake bite, bite by rabid animal, and stings of insects- first aid and treatment. Fractures- Varieties, general signs and symptoms, general rules for treatment, padding of splints, individual fractures and treatment.

### **UNIT-2**

First Aid 2: Hemorrhage Varieties, arrest of external hemorrhage, arrest of hemorrhage from special regions, mouth, nose and ear. Artificial respiration, Asphyxia - Definition and causes. Poisons, classification, general rules for the treatment of poisoning, burn injury, Shock, Effects of heat and cold

## **BVOTT -105-Fundamental of Computers**

### **Unit-1**

Introduction to Computers  
History of Computer, Generations, Characteristics, Advantages and limitations of  
Computer, Classification of Computers, Functional Components of Computer, Input, Output and  
Processing, Concept of Hardware and Software, Data & Information. Concept of data storage.  
Number system. Decimal, Binary, Hexadecimal ASCII.

### **UNIT-2**

Introduction to GUI Based Operating System

Basics of Operating system , Basics of DOS & LINUX, The User interface, File and directory

management, Windows setting, Control Panel, devices and Printer setting, Using various window commands for desktop.

### **UNIT-3**

Word Processing

Word processing basics, Menu Bar, Opening and closing documents ,save & save as , Page

setup ,print preview, and printing. Text creation and manipulation Editing, cut copy paste.

Document creation ,editing, Formatting the text – Paragraph indenting, bullets and numbering

,changing case, Table manipulation – creation of table ,insertion and deletion of cell, row and

column.

### **UNIT-4**

Network basics , Internet

Basics of computer network LAN, WAN etc, Concept of Internet ,Basic of Internet Achitecture,

Services on Internet Architecture, World wide web and websites, Communication on Internet ,

Internet Services, Preparing Computer for Internet Access, ISPs and Examples ,Internet Access

Technologies. Web Browsing , Configuring web browser, Popular search engines Downloading

and printing web pages.

Internet application

Basics of E-mail , E-mail addressing , forwarding and searching, Composing

### **BVOTT-106-GENERAL ENGLISH AND SOFT SKILL**

Introduction to English language

a) Role and significance of English language in the present scenario

b) English language: its relevance for the Indian industry.

c) Introduction to listening, speaking, reading, writing and bench marking of the class.

Functional Grammar

- a) Parts of speech, articles, tenses, verbs and modals.
- b) Practice of daily use words, numerals and tongue twisters
- c) Vocabulary building, construction of simple sentences: Basic sentence pattern, subject and predicate.
- d) Sentence construction – simple, complex and compound

English communication- About myself

- a) Let's talk, making conversation, meeting and greeting
- b) Introduction myself, my family and my friends
- c) My opinions, my likes and dislikes
- d) Life at collage, hostel and workplace

## **PRACTICALS:**

### **BVOTTP 101.PRACTICAL ANATOMY AND PHYSIOLOGY**

#### **Human anatomy (practical)**

Demonstration of

- Study of Human Skeleton parts with skeletal models.
- Study with charts and models of all organ systems mentioned above.
- Microscopic slides examination of elementary human tissues, cells.
- Major organs through models and permanent slides.
- Parts of circulatory system from models.
- Parts of respiratory system from models.
- Digestive system from models.

Excretory system from models.

#### **Human Physiology (Practical)**

- To measure pulse rate
- To measure blood pressure



- To measure temperature
- Measurement of the Vital capacity
- Determination of blood groups
- Transport of food through esophagus
- Calculation and evaluation of daily energy and nutrient intake.
- Measurement of basal metabolic rate
- Demonstration of ECG
- Bile juice secretion and excretion 11. Urine formation and excretion

## **BVOTTP-102 PRACTICAL BIOMEDICAL WASTE MANAGEMENT**

- bio medical waste management
- waste infection control, principles of bio medical waste management.
- Categories of BMW
- Use of different colors of bags,
- sterilization basic care of OT.

## **BVOTTP 103-PRACTICAL BIOCHEMISTRY**

- 1. Analysis of Normal Urine
- 2. Liver Function tests
- 3. Lipid Profile
- 4. Renal Function test
- 5. Blood gas and Electrolytes
- 6. Demonstration of Glucometer with strips

## **BVOTTP -104 PRACTICAL FIRST AID AND BANDAGING**

- first aid and treatment.
- general rules for the treatment of poisoning, burn injury, Shock, Effects of heat and cold

## **BVOTTP 105- PRACTICAL FUNDAMENTALS OF COMPUTER**

- Starting MS WORD, Creating and formatting a document,
- Changing fonts and point size,
- Table Creation and operations, Autocorrect, Auto text, spell Check, Word Art, Inserting
- objects, Page setup, Page Preview, Printing a document, Mail Merge.
- Starting Excel, Work sheet, cell inserting Data into Rows/ Columns, Alignment, Text
- wrapping , Sorting data, Auto Sum, Use of functions, referencing formula cells in other
- formulae , Naming cells, Generating graphs, Worksheet data and charts with WORD, Creating
- Hyperlink to a WORD document , Page set up, Print Preview, Printing Worksheets.
- Starting MS–Power Point,, Creating a presentation using auto content Wizard, Blank
- Presentation, creating, saving and printing a presentation, Adding a slide to presentation,
- Navigating through a presentation, slide sorter, slide show, editing slides, Using Clipart, Word
- art gallery, Adding Transition and Animation effects, setting timings for slide show, preparing
- note pages, preparing audience handouts, printing presentation documents, MS-Access,
- Creating tables and database, Internet, Use of Internet (Mailing, Browsing, Surfing).

## Semester II

### **BVOTT -201 HUMAN ANATOMY AND PHYSIOLOGY-2**

#### **UNIT-1**

Glands of human body – mucous glands, thyroid gland, parathyroid gland, hypothalamus, pituitary, adrenal, pineal, the ovaries, the testes glands, general consideration of lymphatic system, gross anatomy of thoracic duct, histology of lymph node, spleen, tonsils and thymus, gross anatomy of respiratory system, parts of respiratory system, histology of trachea and lungs, parts of reproductive system- Male and female.

#### **UNIT-2**

Brief introduction and definition of integumentary system and Gastro- intestinal system, layers of skin, appendages of skin-hair, sebaceous gland, sweat gland, nails, receptors, function of skin, parts of GIT, oral cavity, salivary glands, structure and function of esophagus, stomach, small and large intestine, liver, gall bladder and pancreas, Histology of tongue, esophagus, stomach, small and large intestine, liver, gall bladder and pancreas.

#### **UNIT-3**

Lymphatic system and immunity- Lymphoid tissue formation, composition and functions of lymph, phagocytosis, cytokine therapy, AIDS, autoimmune disease, medical uses of hemopoietic growth factors, organs of lymphatic system, functions of respiratory system, mechanism of respiration, lungs volume and capacities- definition, normal value, their measurement and clinical importance, pulmonary ventilation, diffusion of gasses, pulmonary circulation- oxygen and carbon dioxide transport in blood, disease related to respiratory system.

#### **UNIT-4**

Gastrointestinal system- characteristics of G.I, functions of G.I, hormones, saliva, composition, function, control of secretion, gastric juice- composition, mechanism of secretion, functions, regulation of secretion, mucosal barrier, pancreatic juice- composition, function, regulation, liver and gall bladder- composition, function of bile, control of secretion, functions of gall bladder and gallstone, functions of reproductive system – male and female, functions of urinary system-ureters, urinary bladder, urethra.

### **BVOTT -202 OT EQUIPMENT MANAGEMENT**

#### **UNIT-1**

- Pulse oximeter
- Nebulizer
- Glucometer
- ECG machine

## **UNIT-2**

- Cardiac monitor
- Defibrillator
- Total patient bed side monitor
- SWD
- Oxygen concentrator

## **BVOTT -203 ELEMENTARY NURSING**

### **UNIT-1**

Bed making: Materials used for hospital beds and bedding, Bed making, Special types of beds, Positions in bed, Moving and lifting of patients, Additional appliances used for beds.

### **UNIT-2**

Caring of sick: Daily toilet of the patient, bathing in the bed and the bathroom, care of hair and the mouth tray, bed sores and tropic ulcers and their prevention, giving of bedpans and urinals, spittoons, feeding of the bed-ridden cases.

### **UNIT-3**

Aspiration and continuous drainage of stomach and duodenum, Artificial feeding, Administration of oxygen, Inhalations, Preparation of patient for examination, Dressings and instruments commonly used in the wards, Prepare nursing trays and trolleys.

## **BVOTT -204 CLINICAL PATHOLOGY**

### **UNIT-1**

Histopathology : Introduction to Histo-Pathology, receiving of Specimen in the laboratory, Grossing Techniques, mounting Techniques - various Mountants, maintenance of records and filing of the slides, use & care of Microscope, various fixatives, Mode of action, Preparation and Indication, Section Cutting, tissue processing for routine paraffin sections, decalcification of tissues, staining of tissues H& E Staining.

### **UNIT-2**

Clinical Pathology : Introduction to Clinical Pathology, Collection, Transport, Preservation, and Processing of various clinical specimens, Urine Examination - Collection and Preservation of urine, Physical, chemical, Microscopic Examination of body fluids cerebrospinal fluid (CSF), Sputum Examination, feces.

### **UNIT-3**

Hematology : Introduction to Hematology, Normal constituents of Blood, their structure and function, Collection of Blood samples, Various Anticoagulants used in Hematology, various instruments and glassware used in Hematology, Preparation and use of glassware, laboratory safety guidelines.

## **BVOTT 205 CLINICAL MICROBIOLOGY**

### **UNIT-1**

☐sterilization & decontamination- I

Dry Heat

Moist Heat

Sterilization - II

Chemical methods

Gaseous methods

Filtration

- Wound Infection & Urinary Tract Infections
- Blood stream Infections
- Respiratory tract Infection
- S.Typhi, Salmonella Paratyphi 'A', Salmonella Typhimurium
- Catheter, IV associated Infections
- Hospital acquired infections & prevention of hospital acquired infections
- Hepatitis C.

### **UNIT-2**

Characteristics: characteristics of bacteria, virus and fungus, Sources of infection, mode of spread, Destruction of bacteria, Control of infection, Inflammation, healing and repair, Infection, wounds, ulcers, blisters, boils, fractures, burns, scalds, gangrene and hemorrhage.

### **UNIT-3**

Characteristics: Characteristics of normal urine, variations in diseases, collection of samples and routine tests, Characteristics of normal feces, variation in diseases, collection of samples and routine tests, Sputum and vomit - Characteristics in different diseases, collection of samples.

## **BVOTT-206-BASIC OF HEALTH MARKET AND ECONOMY**

### **Unit I**

Health Care Market An Introduction : Main Problems in the Market for Health Care, Health Care and

Economic Basics, Analyzing Health Care Markets. Demand-Side Considerations: Demand for Health

and Health Care, Market for Health Insurance

### **Unit II**

Supply-Side Considerations: Managed Care, Health Care Professionals, Hospital Services,

Confounding Factors Public Policy in Medical Care: Policies to Enhance Access, Policies to Contain

Costs, Medical Care Systems Worldwide,

## **UNIT-III**

Health Sector in India: An Overview Health Outcomes; Health Systems; Health Financing

Evaluation of Health Programs Costing, Cost Effectiveness and Cost-Benefit Analysis; Burden of

Diseases ,Role of WHO , Health Care Budget: purpose, types & practices in Indian context.

## **UNIT-IV**

Health Economics: Fundamentals of Economics: Scope & coverage of Health Economics, demand for

Health Sciences; Health as an investment, population, Health & Economic Development.

Tools of Economics-Concepts of need, demand, supply & price in Health Services.

Methods & Techniques of Economic Evaluation of Health Programmes: Cost benefit & cost effective methods-output & input analysis.

Market, monopoly, perfect & imperfect competition. Health Financing from various sources – Public ,

Private, TPA.

Economics of Health Programmes for Nutrition, diet & population control, economics of abuse of

tobacco & alcohol, environmental influences on health and feeding.

Economics of Communicable (STDs & Malaria) & non-communicable (IHD & Cancers) diseases.

## **PRACTICALS:**

### **BVOTTP -201 Practical Human Anatomy & Physiology-II**

Human Anatomy-II (Practical)

Demonstration of:

- Nervous system from models.
- Structure of eye and ear

- Structural differences between skeletal, smooth and cardiac muscles.
- Various bones
- Various joints
- Various parts of male & female reproductive system from models

## Human Physiology- II (Practical)

- To perform total platelet count.
- To perform bleeding time.
- To perform clotting time.
- To study about CSF examination.
- To study about intrauterine contraceptive devices.
- To demonstrate microscopic structure of bones with permanent slides.
- To demonstrate microscopic structure of muscles with permanent slides.

## **BVOTTP -202 PRACTICAL OT EQUIPMENT MANAGEMENT**

### USE OF:

- Pulse oximeter
- Nebulizer
- Glucometer
- ECG machine, Cardiac monitor ,Defibrillator

## **BVOTTP -203 PRACTICAL ELEMENTARY NURSING**

- Bed making
- how to do Administration of oxygen,
- Inhalations
- Preparation of patient for examination,
- Dressings and instruments commonly used in the wards,
- Prepare nursing trays and trolleys.

## **BVOTTP -204 PRACTICAL CLINICAL PATHOLOGY**

- use & care of Microscope,
- staining of tissues H& E Staining.
- Collection,
- Transport,
- Preservation,
- Processing of various clinical specimens,

## **BVOTTP 205 PRACTICAL CLINICAL MICROBIOLOGY**

- sterilization & decontamination-
- Chemical methods
- Gaseous methods
- Filtration

## **Year 2 (Advance Diploma)**

### **Semester III**

## **BVOTT -301 APPLIED ANATOMY AND PHYSIOLOGY**

### **UNIT-1**

Respiratory system: a)Structure and function of the respiratory tract in relation to respiratory system: Nose - Role in humidification, Pharynx - Obstruction in airways, Larynx - Movement or Vocal cords, cord palsies, trachea & Bronchial tree - vessels, nerve supply, respiratory tract, reflexes, bronchospasm, alveoli - Layers, Surfactants b)Respiratory Physiology- control or breathing, respiratory muscles- diaphragm, intercostals, lung volumes - dead space, vital capacity, FRC etc, pleural cavity - intrapleural pressure, pneumothorax, work of breathing - airway resistance, compliance, respiratory movements under anesthesia, tracheal tug - signs, hiccup. c) Pulmonary Gas Exchange And Acid Base Status, pulmonary circulation, pulmonary



edema, pulmonary hypertension, pulmonary function test transfer of gases - oxygen & Carbon dioxide, acid base status, definitions, acidosis types, Alkalosis types, buffers in the body. d)Oxygen: properties, storage, supply, hypoxia, e) Respiratory failure, type, clinical features, causes.

## **UNIT-2**

Cardiovascular system: Anatomy- Chambers of the heart, major vasculature, Coronary supply, innervation, conduction system, cardiac output - determinants, heart rate, preload, after load, coronary blood flow& myocardial oxygen supply, ECG- Arrhythmias cardiovascular response to anaesthetic & surgical procedures, hypotension - causes, effects, management cardio pulmonary resuscitation, myocardial infarction, hypertension.

## **UNIT-3**

Fluid and electrolytes: body fluids- composition, water, sodium and potassium balance, IV fluids- composition and administration, IV cannulation, blood transfusion- blood grouping, storage, administration.

## **BVOTT -302 PRINCIPLES OF ANESTHESIA**

### **UNIT-1**

Medical gas supply: Compressed gas cylinders, Colour coding, Cylinder valves; pin index. gas piping system, recommendations for piping system, alarms & safety devices, anaesthesia machine, hanger and yoke system, cylinder pressure gauge, Pressure regulator, flow meter assembly, vapourizers - types, hazards, maintenance, filling and draining, etc.

### **UNIT-2**

Breathing system: general considerations: humidity & heat, common components - connectors, adaptors, reservoir bags, capnography, Pulse oximetry, methods of humidification, classification of breathing system, mapleson system - a b c d e f , , jackson rees system, bain circuit, non rebreathing valves - ambu valves, the circle system, components, Soda lime, indicators, face mask and airway laryngoscopes- types, sizes, endotracheal tubes - types, sizes, cuff system, fixing, removing and inflating cuff, checking tube position complications.

### **UNIT-3**

Anesthesia, ventilator and working principles: monitoring, ECG , SpO<sub>2</sub>, temperature, IBP, CVP, PA Pressure, LA Pressure.

## **BVOTT -303 BASICS OF OT EQUIPMENT AND OT TRAY SET UP**

## **UNIT-1**

Equipment preparation for anesthesia – Anesthesia Machines, Circuits, Monitors, transducers, Airway devices and Pre-anesthesia Checks ('Cockpit Drill'), Conduct of General Anesthesia including observation and assessment of patient, Preparation and arrangement for Neuraxial and regional anesthesia, Conduct of Neuraxial Blocks – Spinal Epidural and CSE, Conduct of Regional Anesthesia and plexus Blocks .

## **BVOTT -304CLINICAL PHARMACOLOGY**

### **UNIT-1**

Antisialagogues- Atropine, Glycopyrrolate, sedatives I anxiolytics- diazepam, midazolam, phenergan, lorazepam, chlorpromazine, trichlopho, narcotics-morphine, pethidine, fentanyl, pentazocine, antimetics, metaoclopramide, ondansetron, dexamethasone, antacids, Na citrate, gelusil, mucaine gel

### **UNIT-2**

H2 blockers- Cimetidine, ranitidine, famotidine , induction agent-thiopentone, tiazepam, midazolam, ketamine, propofol, etomidate, muscle relaxants- depolarising - suxamethonium, non depolarising -pancuronium, vecuronium, atracurium, rocuranium, inhalation gases: O2, N2O, Air, agents - Ether-, halothane, isoflurane, saevoflurane, desflurane, reversal agents- neostigmine, glycopyrrolate, atropine, nalorphine, naloxone, flumazenil (diazepam), local anaesthetics xylocaine, preparation, local – bupivacaine - topical, prilocaine-jelly, emla - ointment, etidocaine. Ropivacaine.

### **UNIT-3**

Emergency drugs: adrenaline- Mode or administration, dilution, dosage, effects, isoprenaline, atropine, bicarbonate, calcium, ephedrine, xylocard, onotropes: dopamine, dobutamine, amidaron, aminophylline, hydrocortisone, antihistamines, potassium, cardiovascular drugs antihypertensives, antiarrhythmics, beta-blockers, Ca - Channel blockers, vasodilators- nitroglycerin & sodium nitroprusside, respiratory system-bronchodilators, respiratory stimulants, Bronchiolytic agents, renal system- diuretics, furosemide, mannitol, obstetrics -oxytocin, methergin, miscellaneous - antibiotics, paracetamol, diclofenac- IV fluids, various preparations NaCl, Ringer lactate, haemaceal, hetastarch heparin, protamine, insulin , analgesics, nsaid, ibuprofen, ketorolac.

## **BVOTT-305-ADVANCE COMPUTING SKILL**

### Unit-1

Advance Word Processing Tools

Setting the layout of Table and documents, Mail merge techniques. Letter envelopes etc,

Using spell check and Thesaurus, Foot note and Endnotes, Using Charts , shapes and pictures in

word .

## Unit-2

Basics of Spreadsheet

Functions of Spreadsheet , Applications , Elements of Electronic Spread sheet ,creating document saving and printing the worksheet, manipulation of cells ,Functions and charts, using

formulas , Functions and charts

## UNIT-3

Advance Spreadsheet Tools

Manipulations with charts and its types, Sorting, Filtering of data ,Pivot table, data validation

techniques. Grouping and subtotaling of data. Text to column option . Printing of customized

worksheet.

## UNIT-4

Presentation Software

Using Powerpoint, Opening an powerpoint presentation, Saving a presentation , Entering and

editing text, inserting and deleting slides in a presentations , preparation of slides , adding clip

arts, charts etc., Providing Aesthetics , Enhancing text presentation ,working with color lines styles and movie and sound ,adding header and footer, presentation.

## **BVOTT-306-HUMAN VALUE AND PROFESSIONAL ETHICS**

### **UNIT-1**

Need, Basic Guidelines, Content and Process for

Value Education

Understanding the need, basic guidelines, content and process for Value Education

Self-Exploration its content and process, Natural Acceptance' and Experiential Validation- as the

mechanism for self-exploration

Continuous Happiness and Prosperity- A look at basic Human Aspirations

Right understanding, Relationship and Physical Facilities- the basic requirements for fulfilment of

aspirations of every human being with their correct priority

Understanding Happiness and Prosperity correctly- A critical appraisal of the current scenario

Method to fulfil the above human aspirations: understanding and living in harmony at various

levels

## **UNIT 2:**

Understanding Harmony in the Human Being Understanding human being

Understanding the Body as an instrument

Understanding the harmony of Body, correct appraisal of Physical needs, meaning of Prosperity in detail

## **UNIT 3:**

Understanding Harmony in the Family and Society-

Harmony in Human Relationship

Understanding Harmony in the family – the basic unit of human interaction

Understanding values in human-human relationship

Trust and Respect as the foundational values of relationship

Understanding the meaning of trust

Difference between intention and competence. Understanding the meaning of respect

Understanding the harmony in the society (society being an extension of family)

## **UNIT-4**

Natural acceptance of human values

Definitiveness of Ethical Human Conduct

Basis for Humanistic Education, Humanistic Constitution and Humanistic Universal Order

Competence in professional ethics:

- a) Ability to utilize the professional competence for augmenting universal human order
- b) Ability to identify the scope and characteristics of people-friendly and eco-friendly production systems,
- c) Ability to identify and develop appropriate technologies and management patterns for above production systems.

Case studies of typical holistic technologies, management models and production systems

Strategy for transition from the present state to Universal Human Order:

- a) At the level of individual: as socially and ecologically responsible engineers, technologists and managers
- b) At the level of society: as mutually enriching institutions and organizations

## **PRACTICALS:**

### **BVOTTP -301 PRACTICAL APPLIED ANATOMY AND PHYSIOLOGY**

DEMONSTRATION OF:

- acid base status, definitions, acidosis types, Alkalosis types, buffers in the body.
- IV fluids- composition and administration, IV cannulation, blood transfusion- blood grouping, storage, administration.

### **BVOTTP -302 PRACTICAL PRINCIPLES OF ANESTHESIA**

- Medical gas supply
- use of ambu valves
- cuff system, fixing, removing and inflating cuff, checking tube position complications.
- ventilator and working principles
- monitoring, ECG , SpO<sub>2</sub>, temperature, IBP, CVP, PA Pressure, LA Pressure.

### **BVOTTP -303 PRACTICAL BASICS OF OT EQUIPMENT AND OT TRAY SET UP**

DEMONSTRATION OF:

- Equipment preparation for anesthesia

## **BVOTTP -304 PRACTICAL CLINICAL PHARMACOLOGY**

- management of drug reaction

## **BVOTTP- 305-Practical Advance Computing skills**

Word Processing

Mail merge techniques

Using Charts , shapes and pictures in word .

Basics of Spreadsheet

document saving and printing the worksheet

formulas , Functions and charts

Advance Spreadsheet Tools

worksheet.

Presentation Software

Using Powerpoint working with color lines

styles and movie and sound ,presentations.

## **Semester IV**

### **BVOTT 401 BASIC ANESTHETICAL TECHNIQUES**

#### **UNIT-1**

History of anaesthesia: first successful clinical demonstration, pre - historic ( ether) era, inhalational anaesthetic era, regional anaesthetic era, intravenous anaesthetic era, modern anaesthetic era, minimum standard of anaesthesia , pre-operation: pre anaesthetic assessment- history – , past history - disease / Surgery / and personal history - Smoking / alcohol, general physical assessment, systemic examination – CVS, RS, CNS, investigation, routine - haematological - their significance, urine, E.C.G, chest X – ray, special -endocrine, hormonal assays: echocardiography, angiography, liver function test, renal function test, others, case acceptance: ASA grading - I, II, III, IV, V.

#### **UNIT-2**

Pre- anaesthetic orders: patient - Informed consent, Npo, Premedication - advantages, drugs used, Special instructions - if any, machine- checking the machine, O2, N2O, suction apparatus, laryngoscopes, et tubes, airways, things for IV accessibility, other monitoring systems, drugs - emergency drugs, anaesthetic drugs.

## **UNIT-3**

Intraoperative management: confirm the identification of the patient, monitoring- non invasive & Invasive monitoring, induction - drugs used , endotracheal intubation, maintenance of anaesthesia, positioning of the patient, blood / fluid & electrolyte balance, reversal from anaesthesia - drugs used, transferring the patient, Recovery room – set up and things needed, post operative complications and management.

## **BVOTT -402 COMMUNITY HEALTH NURSING AND COMMUNICABLE DISEASE**

### **UNIT-1**

Community health nursing :Health Determinants, Indicators of Health, Levels of Health Care, Primary Health Care, National Health Policy, National Population Policy, National Health Programmes- NAMP, RCH, RNTCP, NACP, Pulse Polio, Immunization schedule.

### **UNIT-2**

Preventable diseases: Classification and mode of spread, Common disease and their prevention - diarrheas and dysenteries, malaria, rabies, round worm, small pox, tuberculosis, typhoid, typhus, venereal diseases, life history and prevention against housefly and mosquito, Infection, Isolation, Disinfection methods.

### **UNIT-3**

Communicable diseases: Nursing care -general management, Specific diseases : Diphtheria, measles, whooping cough, chicken pox, mumps, influenza, typhoid and paratyphoid, typhus, dysentery, food poisoning, cholera, plague, tetanus, malaria, dengue, HIV/AIDS.

## **BVOTT 403 -ESSENTIAL CRITICAL CARE AND NURSING SKILLS**

### **UNIT-1**

Critical care & ICU training : BLS, ACLS, ATLS – CPR, emergency recognition and response, Combat Med Care – Role in war, anaphylaxis, dressing, OT procedure and patient flow in OT Eqpt, Stretcher, Patient Triage & Casualty Evacuation, OT design and medico legal aspects in OT.

### **UNIT-2**

Emergency Recognition and Response must be conversant with:

- (a) Causation, sign and symptoms of hemorrhage and shock.
- (b) Cardiac and Respiratory Emergencies
- (c) Major Trauma Management

- (d) Broad principles of intravenous therapy and transfusions.
- (e) Transfusion fluids in common use, methods of transfusion, reconstitution of plasma for intravenous use.

## **UNIT-3**

Basic and Advanced Life Support:

- (a) BLS, ACLS and ATLS
- (b) Neonatal and Pediatric Advanced Life Support
- (c) Life Support Equipment – Defibrillators/AED, Ambu Bag, Respiratory Circuits, Transport and ICU Ventilators, advanced monitoring systems.

## **UNIT-4**

Operating Theatre work must be conversant with: -

- (a) Assembly and dismantling of various common surgical appliances, cleaning and sterilization.
- (b) Must be conversant with the operative techniques, anesthesia, intensive care and resuscitation and be able to assist in all common and advanced operations carried out in military hospital surgical units including eye, ENT, and all sub-specialties in surgery and anesthesiology. Exposure and extended work in specialties of interest namely, Cardiothoracic surgery, Neurosurgery, Urosurgery, Oncosurgery, Ophthalmology, Otorhinolaryngology, Reproductive and infertility surgery, Gastrointestinal Surgery, Transplantation surgery, laparoscopic surgery and pediatric surgery.
- (c) Application of Plaster of Paris casts, Plaster of Paris Jackets and Spices.

## **BVOTT 404 OT TECHNIQUES IN EYE AND E.N.T**

### **UNIT-1**

Instruments used for examination of eye, Desmasel's Eye Lid: retractor, ophthalmic loop, ophthalmoscope and anatomy of eye. various eye diseases, scleritis, diseases of lens, cataract glaucoma. , diseases of cornea, ulcerative keratitis.

### **UNIT-2**

Ear: Anatomy of the ear, diseases of middle ear, Nose: Anatomy of nose, nasal septum & its diseases Throat: Anatomy of throat, diseases of larynx.

### **UNIT-3**

History taking and symptomatology of various diseases, fever, Polyuria, Heart, Burns, Vomiting, Diarrhoea, Jaundice, Epistaxis. Typhoid, AIDS.

### **UNIT-4**

Medical Emergencies: Cardiac arrest, bronchial asthma, respiratory failure, renal colic, hypo-glycaemia, Preventive aspects of Medicine: Concept of health, preventive medicine, social medicine, public health, epidemiology of infectious diseases, methods of prevention and control of infestations diseases.



## **BVOTT 405-Advance communication and soft skill**

### **UNIT-1**

Functional Grammar-II

- a) Application writing
- b) Paragraph writing, essay writing and précis writing
- c) Pre-testing of oral and writing skills

### **UNIT-2**

Professional Skills

- a) Biodata, CV and resume writing
- b) Joining letter, cover letter and resignation letter
- c) Inter- office memo, formal Business letter, informal notes
- d) Minutes of the meeting, reporting events, summary writing

### **UNIT-3**

Presentation skills

- a) Power-point presentations and presenting techniques
- b) Body language
- c) Describing people, places and events
- d) Extempore, speech and just- a minute sessions

### **UNIT-4**

Interview skills

- a) Developing skills to- debate, discussion, basics of GD and styles of GD
- b) Discussion in groups and group discussion on current issues
- c) Steps to prepare for an interview and mock interviews

Public speaking

- a) Art of public speaking

b) Welcome speech

c) Farewell speech

d) Votes of thanks

Oral practice

a) Debate

b) Just-a-minute

c) Group discussion

d) Mock interviews

## **BVOTT-406-Medical Ethics and Patients Care**

### **UNIT 1**

Medical ethics - Definition - Goal - Scope

Introduction to Code of conduct

### **UNIT 2**

Basic principles of medical ethics –Confidentiality

Malpractice and negligence - Rational and irrational drug therapy

### **UNIT 3**

Autonomy and informed consent - Right of patients

Care of the terminally ill- Euthanasia

### **UNIT 4**

Organ transplantation, Medico legal aspects of medical records –Medico legal case and type- Records and document related to MLC - ownership of medical records - Confidentiality Privilege communication - Release of medical information - Unauthorized disclosure - retention of medical records - other various aspects, Professional Indemnity insurance policy ,Development of standardized protocol to avoid near miss or sentinel events , Obtaining an informed consent.

## **PRACTICALS:**

### **BVOTT 401 PRACTICAL BASIC ANESTHETICAL TECHNIQUES**

- minimum standard of anaesthesia ,
- pre anaesthetic assessment-history
- drugs - emergency drugs, anaesthetic drugs.
- Intraoperative management
- set up and things needed, post operative complications and management.

## **BVOTTP -402 PRACTICAL COMMUNITY HEALTH NURSING AND COMMUNICABLE DISEASE**

- Visit to different NGOS
- Community health nursing
- National Health Policy,
- National Population Policy,
- National Health Programmes
- Preventable diseases.

## **BVOTTP 403 - PRACTICAL ESSENTIAL CRITICAL CARE AND NURSING SKILLS**

- Critical care & ICU training
- Basic and Advanced Life Support:

## **BVOTTP 404 PRACTICAL OT TECHNIQUES IN EYE AND E.N.T**

- Clinical practice in eye and ent department
- safety in icu
- mangment in ot

## **BVOTTP 406 Practical Medical Ethics**

- law and liability and duties of staff
- Workplace issues
- Bioethical issue
- Care and handling of patient

- Medico legal cases
- emergency care and life support skills
- CPR
- Vital signs and primary assessment
- bag-valve-masks

## **Year 3 (DEGREE)**

### **Semester V**

#### **BVOTT -501 BASICS OF SURGERY**

##### **UNIT-1**

History of surgeon: role of the surgeon, importance of team work and anticipating the needs of surgeons, stresses that may arise during operative procedure, surgical terminology, types of incision and indications for the use of particular incision.

##### **UNIT-2**

Hemorrhage: signs and symptoms of internal and external; classification and management, identification of types of tourniquets, reasons for use and duration of application, dangers of use.

##### **UNIT-3**

Wounds: types of wounds, process of healing, treatment and complications; inflammation; wound infections-causes and treatment; incision and drainage of abscesses; importance of personal cleanliness and aseptic techniques.

##### **UNIT-4**

Pre-operative and post-operative care of the surgical patient, Emergency procedures, Knowledge of surgical asepsis, skin preparation for invasive procedures.

## **BVOTT -502 CSSD PROCEDURES**

1. Waste disposal collection of used items from user area, reception protective clothing and disinfections sage gaurds,
2. use of disinfections sorting and classification of equipment for cleaning purposes, sharps, blunt lighted etc. contaminated high risk baby care - delicate instruments or hot care instruments,
3. cleaning process - use of detergents. Mechanical cleaning apparatus, cleaning instruments, cleaning jars, receivers bowls etc. trays, basins and similar hand ware utensils. Cleaning of catheters and tubings, cleaning glass ware, cleaning syringes and needles.
4. Materials used for wrapping and packing assembling pack contents. Types of packs prepared. Inclusion of trays ahd galliparts in packs. Method of wrapping and making use of indications to show that a pack of container has been through a sterilization process date stamping.
5. General observations principles of sterlization. Moist heat sterlization. Dry heat sterlization. EO gas sterlization. H2O2 gas plasma vapo sterlization.

## **BVOTT -503 REGIONAL ANESTHETIC TECHNIQUE**

- a. Local anesthetic technique
- b. Nerve blocks
- c. Spinal Anesthesia
- d. Epidural anesthesia

## **BVOTT -504 BASIC INTENSIVE CARE**

### 1. MONITORING AND DIAGNOSTIC PROCEDURES IN I.C.U.

- Central Venous access.
- ECG monitoring.
- Invasive hemodynamic monitoring

### 2. GENERAL CARE OF PATIENT IN I.C.U.

- o Eye

- o Bladder Skin
- o Care of mechanically ventilated patient
- o Tracheostomy, humidification
- o Vascular lines - arterial, venous line
- o Radiography
- o Physiotherapy - chest physiotherapy

### 3.FLUID BALANCE AND PARENTERAL NUTRITION

### 4. INFECTIOUS DISEASES IN I.C.U.

- o Antibiotics in I.C.D.
- o Oxygen therapy
- o Mechanical ventilation

### 5. ACID - BASE DISORDERS

### 6. CARDIOVASCULAR FAILURE

- o Inotropic support
- o Vaso dilator drugs.

### 7. RENAL FAILURE & LIVER FAILURE

### 8. HEAD INJURY

### 9. PRINCIPLES OF TRANSFUSION THERAPY

- o Whole blood, erythrocyte products
- o Plasma components
- o Platelets concentrate)Massive transfusion, acute transfusion reactions.

## **BVOTT-505-Digital literacy & ACCOUNT LITRACY**

### **Unit 1:**

Review of MS office

Advance options in MS excel

Excel

Power point

Introduction to internet learning platform

Using internet-based learning platform

Using google and you tube for learning

Using smart phone to become smart

## **UNIT-2**

Benefits of digital learning

Using internet for personal requirement

Online payments method

Use of social media for advisement

Digital security and privacy

Various cybercrime and their safety guideline

Best practice for securing online and network transaction

Managing privacy and security and social media accounts

## **UNIT-3**

Introduction and basic of financial planning

Concept of time and value of money

Risk and return

Myths about easy money

Financial planning with examples

Introduction to financial market and institution investment option in post office

Sources of finance

Capital market basics

Basic of money market

Mutual funds

## **UNIT-4**

Life insurance

General insurance

Types of banks

KYC

Function of commercial banks and RBI and its function

Deposite accounts-understanding of operation

Retail finance

Personal loan

Corporate banking

Cheque collecting services

Payments modes in banking system

## **BVOTT-506-introduction to national healthcare system**

### **UNIT-1**

#### **1. Introduction to healthcare delivery system**

- a. Healthcare delivery system in India at primary, secondary and tertiary care
- b. Community participation in healthcare delivery system
- c. Health system in developed countries.
- d. Private Sector
- e. National Health Mission
- f. National Health Policy
- g. Issues in Health Care Delivery System in India

### **UNIT-2**

2. National Health Programme- Background objectives, action plan, targets, operations, achievements and constraints in various National Health Programme.

### **UNIT-3**

#### **3. Introduction to AYUSH system of medicine**

- a. Introduction to Ayurveda.
- b. Yoga and Naturopathy
- c. Unani
- d. Siddha
- e. Homeopathy
- f. Need for integration of various system of medicine

### **UNIT-4**



## 4. Health scenario of India- past, present and future

### Demography & Vital Statistics-

- a. Demography – its concept
- b. Vital events of life & its impact on demography
- c. Significance and recording of vital statistics
- d. Census & its impact on health policy

## 6. Epidemiology

- a. Principles of Epidemiology
- b. Natural History of disease
- c. Methods of Epidemiological studies
- d. Epidemiology of communicable & non-communicable diseases, disease transmission, host defense immunizing agents, cold chain, immunization, disease monitoring and surveillance.

### **PRACTICALS:**

#### **BVOTTP -501 PRACTICAL BASICS OF SURGERY**

- Management of Wounds in hospital
- Pre-operative and post-operative care of the surgical patient,
- Emergency procedures

#### **BVOTTP -502 PRACTICAL CSSD PROCEDURES**

- use of disinfectants ,
- cleaning process
- Materials used for wrapping and packing
- General observations principles of sterilization

#### **BVOTTP -503 PRACTICAL REGIONAL ANESTHETIC TECHNIQUE**

- expose to anesthetic technique

## **BVOTTP-504 PRACTICAL BASIC INTENSIVE CARE**

- MONITORING AND DIAGNOSTIC PROCEDURES IN I.C.U.
- GENERAL CARE OF PATIENT IN I.C.U.
- PRINCIPLES OF TRANSFUSION THERAPY

## **505-BVOTT-Practical digital literacy and financial literacy**

- Uses Advance options in MS excel
- Excel
- Power point
- Using internet-based learning platform
- Using google and you tube for learning
- Using smart phone to become smart
- Using internet for personal requirement
- Online payments method
- Use of social media for advisement

## **Semester VI**

## **BVOTT -601 ANESTHESIA FOR SPECIAL SURGERIES**

### NEURO ANAESTHESIA

- Glassgow coma scale
- Premedication
- Special investigation - CT, Angiography and MRI
- Checklist

- Induction of a patient
- Reinforced Endotracheal tubes
- Positioning in neuro surgery
- I.C.P.
- Air embolism
- Reversal of the patient
- Transferring to I.C.U. / Ward

## OBSTETRIC ANAESTHESIA

- Differences between a pregnant and a normal lady
- Risks for anaesthesia.
- Precautions to be taken
- Check list
- Regional v/s general anaesthesia
- Induction / maintenance and recovery .
- Resuscitation of the new born,
- Reversal and extubation
- Emergencies - manual removal of placenta
  - A.P .H.
  - P.P.H.
  - Ruptures uterus
  - Ectopic Pregnancy

## PAEDIATRIC ANAESTHESIA

- Theatre setting
- Check list
- Premedication - modes
- Induction

Incubation - Securing the EIT

Reversal & extubation – Problems

Transferring / ICU management

Pain management

## ENT Anaesthesia

- Anaesthesia for adenotonsillectomy
- Anaesthesia for mastoidectomy
- Bronchoscopy and oesophagoscopy

## CARDIAC ANAESTHESIA :

- NYHA classification
- Arrhythmias
- Angina
- Dyspnoea
- Special investigations
  - o echo cardiography

## o angiography

- Premedication
- Setting up of monitoring system
- Monitoring - invasive and non - invasive
- Getting ready for the case
- Induction of cardiac patient, precautions to be taken
- Cardiopulmonary bypass
- Weaning of CPB
- Transferring the patient to ICU.
- Care to be taken
- I.C.U management.
- Chest tube management

## ANAESTHESIA OUTSIDE THE O.R.

- Situations
- Cath Lab
- Radiology
- E.C.T.
- Short comings.

## DAY CARE ANESTHESIA

- Special features
- Set up
- Advantages
- Disadvantages
- Complications
- Future

## GENERIC ANASTHESIA

- Physiological changes
- Diseases of aging
- Nervous system
- Geriatric pharmacodynamics / pharmacokinetics
- Postoperative nervous system dysfunction.

## ANESTHESIA FOR TRAUMA AND SHOCK

- Resuscitation
- Preop investigation I assessment
- Criculatory management
- Management of anaesthesia

- Rapid sequence induction
- Other problems

## THORACIC ANESTHESIA

- Pulmonary function tests
  - o bed side
  - o Vitallograph
- Preoperative preparation
- Premedication
- Check list
- Induction. Intubation
- Double lumen tubes
- monitoring
- Pain management
- Extubation
- ICU management

## **Postoperative problems**

Nausea & Vomiting

Sore throat

Laryngeal granuloma

Neurological complications.

Awareness

Vascular complications.

Trauma to teeth

Headache

Backache

Ocular complications

Auditory complications

## MAJOR CATASTROPHES

o Mortality

o Causes of death

o Cerebral damage

o Prevention

## **BVOTT -602 HYGIENE, SANITATION, NUTRITION, DIETICS**

### **UNIT-1**

Hygiene: Definition and historical background of hygiene, Personal hygiene- Sleep, washing, eating and drinking, exercises, skin disease and their prevention, various hygiene chemical, their dosage and usage.

## **UNIT-2**

Sanitation: definition and historical background of sanitation, Water Sources - Rain, surface, underground, Purification - Reasons, principles and methods, sterilization - Physical and chemical methods, individual water sterilizing outfit and its use, Storage - Water bottle, chagul, pakhal, canvas and iron cisterns, water truck, Water borne disease, water supply, spray techniques.

## **UNIT-3**

Nutrition and dietetics1: Food and nutrition - Composition of food, common articles of diet, Principles of Nutrition and dietetics, food requirements, cookery- reasons for cooking and dietetics, effects of different methods on cooking, storage of food in ward, preparation of tray and serving of food, Preparation of - Tea, coffee, cocoa, imperial drink, barley water, lemon squash, fruit juices, lachha, junket curds, buttermilk, jelly ice cream. eggs flip, albumin water. calories, BMR and caloric requirements, common articles of diet, special diets, sick room recipes, nutritional disease.

## **PRACTICALS:**

### **BVOTTP -601 PRACTICAL ANESTHESIA FOR SPECIAL SURGERIES**

demonstration of:

- knowledgeSpecial investigation - CT, Angiography and MRI
- Positioning in neuro surgery
- I.C.P.
- Theatre setting
- Check list
- Premedication - modes
- Induction
- ENT Anesthesia
- I.C.U management.
- Chest tube management
  
- Physiological changes
- Diseases of aging
- Nervous system
- Geriatric pharmacodynamics / pharmacokinetics
- Postoperative nervous system dysfunction.
- Pain management
- ICU management

### **BVOTTP-602 PRACTICAL HYGIENE, SANITATION, NUTRITION, DIETICS**

***Demonstration of:***

- Hygiene
- Sanitation
- Nutrition and dietetics