3rd SEMESTER

ANATOMY & PHYSIOLOGY RELEVANT TO ANAESTHESIA

Subject Code:**BANTS1-301** **60 Hours**

L	T	P	C
3	1	0	4

COURSE OBJECTIVES:

The objective of this course is to develop a basic understanding about the structure and functions of the human body and body organs that is mainly relevant to anesthesia

COURSE OUTCOME:

1. Knowledge about basic understanding about the structure and functions of the human body.
2. Knowledge about body organs that is mainly relevant to anesthesia.

COURSE SYLLABUS:

UNIT I **15 Hour**

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 –

UNIT II **15 Hour**

Layers Surfactants (i) Respiratory Physiology • Control of 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 anaesthesia. • Tracheal tug - signs, hiccup

UNIT III **15 Hour**

Pulmonary Gas Exchange And Acid Base Status • Pulmonary circulation - Pulmonary oedema, pulmonary hypertension • Pulmonary function tests. • Transfer of gasses - oxygen & Carbon dioxide Oxygen: properties, storage, supply, hypoxia Respiratory failure, type, clinical features, causes.

UNIT IV **15 Hour**

CARDIOVASCULAR SYSTEM Anatomy - Chambers of the heart, major vasculature. Coronary supply . Conduction system, Cardiac output - determinants, heart rate, preload, after load. Coronary blood flow & myocardial oxygen supply ECG – Arrhythmias , Tachycardia and Bradycardia. Hypotension & Hypertension- causes, management. Cardiopulmonary resuscitation. Myocardial infarction.

References Books

1. Ross & Wilson Anatomy and Physiology Anne Waugh, Allison Grant Churchill Livingstone
2. Short Textbook of Anaesthesia Ajay Yadav Jaypee Brothers
3. Essentials of Anesthesia & Critical Care Anshul Jain Jaypee Brothers.

OBSTETRICS & GYNAECOLOGY

Subject Code:**BANTS1-302** **60 Hours**

L	T	P	C
3	1	0	4

COURSE OBJECTIVES:

The objective of this course is to develop a basic understanding about the structure and functions of the human reproductive organs and obstetrics & gynecological examination, abnormalities, and surgical Procedure.

COURSE OUTCOME:

1. To understand basic structure and functions of the human reproductive organs.
2. To develop knowledge about obstetrics & gynecological examination, abnormalities, and surgical Procedure.

COURSE SYLLABUS:

UNIT I **15 Hours**

OBSTETRICS Physiology of Pregnancy, Normal delivery, forceps delivery, Twin pregnancy. Birth control methods. Medical termination of pregnancy.

UNIT II **15 Hours**

GYNAECOLOGY Anatomy & Physiology of female Reproductive organs, Gynaecological examination.

UNIT III **15 Hours**

Disorders of menstruation and reproductive organs. Instruments of major & minor gynaecological procedures, Various operative positions

UNIT IV **15 Hours**

Instruments used in common obstetrics procedures or surgery e.g. Episiotomy, forceps delivery, MTP, Embryotomy, IUCDs, LSCS; Laparoscopy Instruments & Procedure, Cesarean Section

References

1. Anne Waugh and Kathleen JW Wilson; Churchill LivingStone; London Anatomy and Physiology Ross and Wilson
2. Holland & brews Manual of obstetrics Miscellaneous Publishers
3. Dc Dutta's Textbook Of obstetricsGynaecology Jaypee Brothers Medical Publishers
4. Cs Dawn Textbook of Gynaecology, contraception & demography Dawns Books

OBSTETRICS & GYNAECOLOGY LABORATORY

Subject Code:**BANTS1-306** | **L T P C** | **4 Hours /week**
0 0 4 2

COURSE OBJECTIVES:

The objective of this course is to develop a basic understanding about the structure and functions of the human reproductive organs and obstetrics & gynecological examination, abnormalities, and surgical procedure.

COURSE OUTCOME:

1. To understand basic structure and functions of the human reproductive organs.
2. To develop knowledge about obstetrics & gynecological examination, abnormalities, and surgical Procedure.

LIST OF PRACTICALS

1. Identification of Instruments used in obstetric procedure.
2. Identification of Instruments used in gynaecological procedure.
3. Demonstration of Various Techniques in obstetrics &gynaecology
4. Dilatation & Evacuation
5. Dilatation & Curettage
6. Normal Labor
7. Cesarean section
8. Implantation Of IUCDs
9. Tubectomy, Hysterectomy, Vasectomy

References

1.Anne Waugh and Kathleen JW Wilson; Churchill LivingStone; London Anatomy and Physiology Ross and Wilson
2. Holland & brews Manual of obstetrics Miscellaneous Publishers
3. Dc Dutta's Textbook Of obstetricsGynaecology Jaypee Brothers Medical Publishers
4. Cs Dawn Textbook of Gynaecology, contraception & demography Dawns Books

GENERAL PHARMACOLOGY

Subject Code: **BANTS1-303** **60 Hours**

L	T	P	C
3	1	0	4

COURSE OBJECTIVES:

To know about safety in relevance to various disorders diseases, emphasizing mainly on adverse effects, dosage regimen, pharmacotherapy and non-pharmacotherapy treatment and Contraindications.

COURSE OUTCOME:

1. Acquire knowledge about drug safety in relevance to various disorders diseases, emphasizing mainly on adverse effects, dosage regimen.
2. Knowledge about parmacotherapy and non-pharmacotherapy treatment and Contraindications.

COURSE SYLLABUS

UNIT I **15 Hours**

General Principles- Pharmacological classification of Drugs, Route of drug administration, and Precautions Drug toxicity, prevention & treatment of poisoning adverse drug reaction. Cardiovascular drugsEnumerate the mode of action, side effects and therapeutic uses of the following drugs. -Antihypertensive Drugs -Alpha Beta Adrenergic antagonists -Vasodilators - Calcium channel blockers -Antiarrhythmic drugs -Cardiac glycosides -Drugs used in Haemostasis - anticoagulants Thrombolytic and antithrombolytics. -Drugs used in the treatment of shock.

UNIT II **15 Hours**

Anaesthetic agents. -Classification of general anaesthetics. -Pharmacokinetics and Pharmacodynamics of inhaled anaesthetic agents. -Intravenous general anaesthetic agents. - Inhalational gases -Emergency drugs. -Local anaesthetics - classification mechanism of action, duration of action and methods to prolong the duration of action. Preparation, dose and routes of administration. Analgesics-Definition and classification, Routes of administration, dose, frequency of administration, Side effects and management of non opioid and opioid analgesics. Antihistamines and antiemetics Classification, Mechanism of action, adverse effects, Preparations, dose and routes and administration

UNIT III **15 Hours**

CNS stimulants and depressants Alcohol Sedatives, hypnotics and narcotics CNS stimulants Neuromuscular blocking agents and muscle relaxants. Autonomic nervous system. List of drugs acting on ANS including dose,route of administration, indications, contraindications and adverse effects. Pharmacotherapy of respiratory disorders Pharmacotherapy of bronchial asthma Pharmacotherapy of cough Mucokinetic and mucolytic agents Use of bland aerosols in respiratory care.

UNIT IV **15 Hours**

Corticosteroids Classification, mechanism of action, adverse effects and complications. Preparation, dose and routes of administration. Diuretics Classification of Diuretics Action of diuretics Adverse effects Preparations, dose and routes of administration Chemotherapeutic drugs. Definition . Classification and mechanism of action of antimicrobial agents Combination of antimicrobial agents Chemoprophylaxis. Classification, spectrum of activity, dose, routes of administration and adverse effects of penicillin, cephalosporins, aminoglycosides, tetracycline, chloramphenicol, antitubercular drugs.

References:

1 KD Tripathi Textbook of pharmacology Jaypee Brothers
2 Tara Shanbhag, Smita Shenoy Text book of pharmacology Elsevier
3 Goodman & Gillman's The Pharmacological Basis of Therapeutics McGraw Hill Education
4 R.D. Budhiraja Elementary Pharmacology and Toxicology Popular Prakashan

GENERAL PHARMACOLOGY LABORATORY

Subject Code: **BANTS1-307** | **L T P C** | **4 Hours /week**
0 0 4 2

COURSE OBJECTIVES:

About drug safety in relevance to various disorders and diseases, emphasizing by using behavioral apparatus. Highlights therapeutic monitoring.

COURSE OUTCOME:

1. Acquire knowledge about using behavioral apparatus.
2. Know to evaluate about analgesics by chemical method

LIST OF PRACTICALS

1. To study the muscle relaxant property of diazepam in mice using rota rod apparatus.
2. To study the analgesic effect of diclofenac sodium in mice using the hot plate method.
3. To study the local anesthesia property of procaine hydrochloride using the foot withdrawal reflex of frogs and mice.
4. Study of absorption and excretion of drugs in man
5. Therapeutic drug monitoring
6. Critical appraisal of drug advertisements
7. Evaluation of analgesics by chemical method
8. Effect of saline purgative on frog intestine and the use of Oral Rehydration Solution
9. Calculation of drug dosage and percentage solutions

References

1. KD Tripathi Textbook of pharmacology Jaypee Brothers
2 Tara Shanbhag, Smita Shenoy Text book of pharmacology Elsevier
3 Goodman & Gillman's The Pharmacological Basis of Therapeutics McGraw Hill Education
4 R.D. Budhiraja Elementary Pharmacology and Toxicology Popular Prakashan

GENERAL ANAESTHESIA

Subject Code:**BANTS1-304** **L T P C** **60 Hours**
3 1 0 4

COURSE OBJECTIVES:
To know about general anaesthesia, indication, complications and management of patients throughout General Anaesthesia**.**

COURSE OUTCOME:
1. To knowledge about general anaesthesia, indication and complications during use.
2. To know about management of patients throughout General Anaesthesia**.**

COURSE SYLLABUS:

UNIT I **15 Hours**
Introduction. General Anaesthesia- Components, Triad of Anaesthesia, Balanced Anaesthesia, Stages of General Anaesthesia (Guedel's Classification)

UNIT II **15 Hours**
Indications & Contraindications Indications of General Anaesthesia, Contraindications of General Anaesthesia. Preparations for General Anaesthesia.

UNIT III **15 Hours**
Pre anaesthetic medication- Changes, Uses and Preoperative Fasting. Patient Preparation and transport of patients to the OT. UNIT IV Gasses used in Anaesthesia Intravenous / inhalation of volatile Anaesthetics Muscle relaxants, analgesics

UNIT IV **15 Hours**
Difficult Airway, LMA Complications of General Anaesthesia- intraoperative, immediate, post-operative & delayed. Post-operative care after anesthesia.

Referances
1 G. Smith & A.R. Aitkenhead's Textbook of Anaesthesia ELSEVIER
2 Ajay Yadav Short Textbook of Anaesthesia Jaypee Brothers
3 Anshul Jain Essentials of Anaesthesia& Critical Care Jaypee Brother

GENERAL ANAESTHESIA LABORATORY

Subject Code:**BANTS1-308** | **L T P C** | **4 Hours /week**
0 0 4 2

COURSE OBJECTIVES:

To know about general anaesthesia, indication, complications and management of patients throughout General Anaesthesia.

COURSE OUTCOME:

1. To knowledge about general anaesthesia, indication and complications during use.
2. To know about management of patients throughout General Anaesthesia**.**

LIST OF PRACTICALS

Demonstration of: Equipment Procedure & Before anaesthesia, during anaesthesia& post anaesthetic management & precautions. To see how General Anaesthesia is delivered to the patient and what is the sequence of different stages of anaesthesia.

References :

1. G. Smith & A.R. Aitkenhead's Textbook of Anaesthesia ELSEVIER
2 Ajay Yadav Short Textbook of Anaesthesia Jaypee Brothers
3 Anshul Jain Essentials of Anaesthesia& Critical Care Jaypee Brother

MEDICAL TERMINOLOGY & MEDICAL RECORDS

Subject Code: **BANTS1-305** **L T P C** **30 Hours**
2 0 0 2

COURSE OBJECTIVES:

This subject introduces the elements of medical terminology
COURSE OUTCOME: Knowledge about subject introduces the elements of medical terminology.

COURSE SYLLABUS:

UNIT I
A) Introduction to medical terminology
B) Word formation & syntax • Greek alphabet • Greek & Latin prepositional & adverbial prefixes • Singular & plural endings
C) Commonly used prefixes, suffixes and root words in medical terminology D) Common Latin term used in prescription writing
E) Study of standard abbreviations
F) Commonly used medical terms to define different parts of the body

UNIT II **5 Hours**
Medical terminology used by: Cardiologist, Neurologist, Nephrologist, Gastrointestinologist, ENT surgeon, Dentist, Orthopedic surgeon, Gynecologist, Oncologist, Dermatologist and Endocrinologist.

UNIT III **10 Hours**
Medical record: Definition and Types of medical record, Importance of medical record, Flow chart of function, Statutory requirements of maintenance, coding, indexing and filing, Computerization of record, Report and returns by the record department, Statistical information and ICD.

UNIT IV **10 Hours**
Utility & functions of Medical Records in Health care delivery System. Organizations & management of the Medical Records Department. Role of Hospital managers & MRD personnel in Medical record keeping. Reports & returns in the Medical Record System.

UNIT V **5 Hours**
Basic knowledge of legal aspects of Medical Records including Factories Act, Workmen Compensation Act & Consumer Protection Act. Procedures of Medical Auditing & its importance. Government Regulations & requirements.

References:
1. F.J. Baker & R.E. Silverto An introduction to Med. Lab. Technology Pb. London Butterworth and Co.Ltd.
2 Paramedics-Six in One Jaypee Brothers
3 B. M. Sakharkar Principles of Hospital Administration & Planning Jaypee Brothers
4 C. M.Francis Hospital Administration Jaypee Brothers
5 G.D. Mogli Medical Records Jaypee Brothers.

4th SEMESTER

GENERAL MEDICINE

Subject Code:**BANTS1-401** **L T P C** **60 Hours**
3 1 0 4

COURSE OBJECTIVES:
The objectives of this course are to prolong life and to reduce disability. Improvements in the standard of living and in medical treatment and specific measures to reduce the incidence of disease. In this course the students also gain knowledge about causes, signs & symptoms, investigations, and treatment.

COURSE OUTCOME:
1. To gain knowledge about course to prolong life and to reduce disability.
2. To understand about improvements of standard of living and in medical treatment and specific measures to reduce the incidence of disease.
3. Students also gain knowledge about causes, signs & symptoms, investigations, and treatment

COURSE SYLLABUS:

UNIT I **15 Hours**
History taking and symptomatology of various diseases, fever, polyuria, heart burns, vomiting, diarrhea, jaundice, epistaxis. Abdomen- hepatomegaly, splenomegaly, cirrhosis, hepatitis, malaria, typhoid, dengue.

UNIT II **15 Hours**
Disorders of circulatory - , cardiac failure, congenital heart diseases, hypertension, cardiac monitors, defibrillators. Disorders of respiratory system- pleural effusion, pulmonary tuberculosis, pneumonia, dyspnea hypoxia

UNIT III **15 Hours**
Disorders of Excretory System- Pyelonephritis, Polyuria, Acute & Chronic Renal Diseases, Renal Failure etc. Disorders of endocrine system diabetes, hypoglycemia, Addison's disease, hyperthyroidism Disorders of nervous system Hemiplegia, paraplegia, paralysis, coma, Parkinson's disease.

UNIT IV **15 Hours**
Medical emergencies- cardiac arrest, bronchial asthma, respiratory failure, meningitis, acute poisoning, Basic life support (BLS). Blood Disorders: Anemia's, leukemia, AIDS. Acid base disorder. Preventive aspects of medicine- Epidemiology of infectious diseases methods of prevention.

References:
1 K.G. Mathew, Parveen aggarwal Textbook of Medicine ELSEVIER
2 Lawrence M.Tierney Current Medical diagnosis and treatment M.C Graw Hill.
3 David Sons Principle and Practice of Medicine ELSEVIER
4 Harrison's Principal of Internal Medicine M.C Graw Hill.

REGIONAL ANAESTHESIA

Subject Code:**BANTS1-402** **L T P C** **60 Hours**
3 1 0 4

COURSE OBJECTIVES:
To know about the concept of Regional Anaesthesia. Various methods of regional Anaesthesia and its comparison with General Anaesthesia.

COURSE OUTCOME:
1. Knowledge about concept of Regional Anaesthesia.
2. To know about various methods of regional anaesthesia and its comparison with General Anaesthesia.

COURSE SYLLABUS:

UNIT I **15 Hours**
Regional Anaesthesia- Introduction and classification- Local Block, Peripheral Nerve Block & Central Neuraxial Block-Drugs used in Regional Anaesthesia. Needles used in Regional Anaesthesia.

UNIT II **15 Hours**
Considerations, Systemic effect & toxicity. Individual Agents used, Methods of Local Anaesthesia, Causes of Failure of Local Anaesthesia.

UNIT III **15 Hours**
Peripheral Nerve Block- Technique Blocks in Upper Limb, Lower Limb, Head & Neck, Thorax & Abdomen area. Contraindications of Peripheral Nerve Block.

UNIT IV **15 Hours**
Central Neuraxial Blocks: Applied Anatomy, Advantages of CNB over General Anaesthesia, Systemic effects, Spinal Anaesthesia/Block, Intrathecal Block, Saddle Block. Epidural Anaesthesia (Peridural Block) Combined Spinal Epidural Block Caudal Block Level of Block Required for common Surgeries.

References:
1: Ajay Yadav Short Textbook of Anaesthesia Jaypee publications.

REGIONAL ANAESTHESIA LABORATORY

Subject Code:BANTS1-407	L	T	P	C	4 Hours /week
	0	0	4	2	

COURSE OBJECTIVES:

To learn about the concept of Regional Anaesthesia and understand various methods and techniques of regional Anaesthesia.

COURSE OUTCOME:

1. Knowledge about concept of Regional Anaesthesia.
2. To know about various methods of regional anaesthesia and its comparison with General Anaesthesia.

COURSE SYLLABUS:

LIST OF PRACTICALS

Learn about various needles used in regional anesthesia. Positions given during administration of local anaesthesia. To check the effect of Local Anaesthesia after block and to learn about various drugs used in regional anaesthesia. To understand the technique of Spinal Anaesthesia and Epidural Anaesthesia. To see the various complications of Regional Anaesthesia and their management.

References

1. Ajay Yadav Short Textbook of Anaesthesia Jaypee

ANAESTHESIA TECHNOLOGY

Subject Code:**BANTS1-403** **L T P C** **60 Hours**
3 1 0 4

COURSE OBJECTIVES:
A primary purpose of the course is to know about uses of basic anesthetic instruments and basic anesthetic procedure.
COURSE OUTCOME:
To know about uses of basic anesthetic instruments and basic anesthetic procedure.

COURSE SYLLABUS:

UNIT I **15 Hours**
Anaesthesia Equipment Boyle's Machine & its functioning. Boyle's vaporizers Magill's breathing circuit, Bain's breathing circuit, pediatrics anaesthesia circuit Gas cylinders & flow meters Carbon dioxide absorption canisters.
2
UNIT II **15 Hours**
Suction apparatus foot operated, electrically operated AMBU bag & laryngoscope, endotracheal tubes Catheters, face masks, ventimasksAnaesthesia Ventilators & Monitoring.

UNIT III **15 Hours**
Pharmacology related to Anaesthesia General Principles- Pharmacological classification of Drugs, Route of drug administration, precautions in administration, principles of drug toxicity, prevention & treatment of poisoning adverse drug reaction. Sedatives & hypnotics, barbiturates, morphine & others.

UNIT IV **15 Hours**
Important groups of drugs- Antimicrobial agents & anti-allergy drugs, Diuretics & NSAIDS. Pre-anesthetic medication Local Anesthesia - technique & agents Spinal Anesthesia- technique agents General Anaesthesia - technique & agents Antiarrhythmic drugs Treatment of shock.

References
1. Ajay Yadav Short Textbook of Anaesthesia Jaypee
2 Anshul Jain Essentials of Anaesthesia& Critical Care Jaypee

ANAESTHESIA TECHNOLOGY LABORATORY

Subject Code:**BANTS1-408** **L T P C** **4 Hours /week**
0 0 4 2

COURSE OBJECTIVES:

About basic and advanced of Anaesthesia Technology and about various methods and techniques of Anaesthesia in detail.

COURSE OUTCOME:

1. To understand the Basic and advanced of Anaesthesia Technology.
2. To understand about various methods and techniques of Anaesthesia in detail.

COURSE SYLLABUS:

LIST OF PRACTICALS

To learn about the duties of an Anaesthesia Technician. To Learn how to assist the Anaesthetist. To Learn about Checking an Anaesthesia machine. To Learn how to monitor the patient during Anaesthesia. To Learn about CPR, BLS and ACLS

References:

1. Ajay Yadav Short Textbook of Anaesthesia Jaypee
2 Anshul Jain Essentials of Anaesthesia& Critical Care

HAEMATOLOGY & BLOOD BANK

Subject Code:**BANTS1-404** **L T P C** **60 Hours**
3 1 0 4

COURSE OBJECTIVES:
Components, characteristics and function of human blood and to identify the principle of routine hematological tests including sources of error and clinical significance of results.
COURSE OUTCOME:
1. To study the components, characteristics and function of human blood.
2. To identify the principle of routine hematological tests including sources of error and clinical significance of results.

COURSE SYLLABUS:

UNIT I **15 Hours**
Blood cells, Hemoglobin, Coagulation Factors, Immunoglobulin, Red Cell Antigen, Natural Antibodies, Rh System, Rh Antigens & Rh Antibodies, Antigenantibody reaction, Agglutination, Hemagglutination. Blood grouping techniques, Methods for ABO grouping, Slide & Tube Method, Difficulties in ABO grouping, Antiserum used in ABO test procedures, Anti –A, Anti-B, Anti- AB, Inheritance of the Blood groups.

UNIT II **15 Hours**
Methods of blood collection, Anticoagulant- Definition, types of anticoagulant- (EDTA, Citrate, Oxalate, Heparin, sodium fluoride), mechanism of coagulation, Hemolysis of blood. Separation of serum & plasma, Criteria for blood specimen rejection, Changes in blood, Maintenance of specimen identification, Transportation of the blood, Storage of blood in blood bank, Universal precautions.

UNIT III **15 Hours**
Bone Marrow, Cell composition of normal adult Bone marrow, Aspiration, Indication, Preparation & Staining, Basic Hematological Techniques. Characteristics of a good technician, Preparation of specimen collection material, Lab request form, Collection methods of bone marrow specimen, Indication and complications.

UNIT IV **15 Hours**
Blood Transfusion: Indications of blood transfusion, reactions of blood transfusion and precaution of blood transfusion. Blood Donation: Introduction, Blood donor requirements, Criteria for selection & rejection, Medical history & personal details, Self-exclusion, Health checks before donating blood, Blood collection packs, Anticoagulants, Instructions given to the donor after blood donation, Adverse donor reaction. Testing Donor Blood, Blood Donor Records, Storage of blood, Changes in blood after storage.

References

1 Ramniksood Hematology for students practices Jaypee
2 Emmanuel C.Besa Hematology Harwal
3 Christopher A. Ludlam Clinical Hematology Churchill living stone
4 G.A McDonald, jamespaul& Bruce Cruickshanls Atlas of hematology Churchill livingston

BASIC CONCEPTS OF ANAESTHESIA

Subject Code:**BANTS1-405** **L T P C** **30 Hours**
2 0 0 2

COURSE OBJECTIVES:
About the basic concepts and techniques in Anaesthesia.
COURSE OUTCOME:
To Study about the basic concepts and techniques in Anaesthesia.
COURSE SYLLABUS:

UNIT I **10 Hours**
Intravenous Cannula: Setting up an IV Line, Color coding of different IV cannula, Flow through IV cannula, places where IV cannula can be inserted, Technique of inserting IV cannula in adults and children. Intra-arterial Line: Uses and techniques, position, places where IA cannula can be put. Central Venous Cannulation: Uses and technique, Measurement of CVP, precautions during insertion, indications and contraindications. Brief idea about Cardiac catheterization and Pulmonary Catheterization.

UNIT II **7 Hours**
Ryle's Tube: Technique of insertion, Sizes available, Precautions and complications, Suction catheters: Uses and color coding, Sizes available. Folley's catheter: Insertion Technique, Precautions, Care and complications. Supra-pubic catherization: Indications and placement.

UNIT III **7 Hours**
Endotracheal Tubes, Combitubes, Double Lumen Tubes: Uses and advantages. Nasal and oral tubes: indications and advantages. Oral Airways: Classification, Sizes and color coding-indications. Supraglottic devices: LMA, I-gel and Proseal. Uses and indications.

UNIT IV **6 Hours**
Transport of patient: Intra-hospital transport, Inter-hospital transport. Transportation of critically ill patients, Indications, preparation and Precautions of transportation.

References
1. Ajay Yadav Short Textbook of Anaesthesia Jaypee Brothers
2 S Ahanantha Pillai Manual of Anesthesia for Operation Theatre Technicians Jaypee Brothers
3. Maxine Goldman Pocket Guide to Operating Room F A Davis Company

HEALTH EDUCATION AND COMMUNITY PHARMACY

Subject Code:**BANTS1-406** **L T P C** **15 Hours**
1 0 0 1

COURSE OBJECTIVES:
The course provides the basic knowledge to students about health, nutrition, family planning and the diseases.

COURSE OUTCOME:
The course provides the basic knowledge to students about health, nutrition, family planning and the diseases

COURSE SYLLABUS:

UNIT I **4 Hours**
Concept of health: Definition of physical health, mental health, social health, spiritual health, determinants of health, indicators of health, concept of disease, natural history of diseases, the disease agents, concept of prevention of diseases. Nutrition and health: Classification of foods requirements, disease induced due to deficiency of proteins, Vitamins and minerals-treatment and prevention. Demography and family planning: Demography cycle, fertility, family planning, contraceptive methods, behavioral methods, natural family planning method, chemical method, mechanical methods, hormonal contraceptives, population problem of India.

UNIT-II **4 Hours**
First aid: Emergency treatment in shock, snake-bite, burns poisoning, heart disease, fractures and resuscitation methods. Elements of minor surgery and dressings 5. Environment and health-Sources of water supply, water pollution, purification of water, health and air, noise light-solid waste disposal and control-medical entomology, arthropod borne diseases and their control, rodents, animals and diseases. 6. Fundamental principles of microbiology classification of microbes, isolation, staining techniques of organisms of common diseases.

UNIT-III **3 Hours**
Communicable diseases: Causative agents, modes of transmission and prevention. (a) Respiratory infections: Chicken pox, measles. Influenza, diphtheria, whooping cough and tuberculosis. (b) Intestinal infections: Poliomyelitis. Hepatitis. Cholera. Typhoid, Food poisoning, Hookworm infection. (c) Arthropod borne infections-plague, Malaria, Filariasis. (d) Surface infections-Rabies, Trachoma, Tetanus, and Leprosy. (e) Sexually transmitted diseases --- Syphilis. Gonorrhea. AIDS.

UNIT-IV **4 Hours**
Non-communicable diseases-Causative agents, prevention, care and control; Cancer, Diabetes, Blindness, Cardiovascular diseases. 9. Epidemiology: Its scope, methods, uses and dynamics of disease transmission, immunity and immunization: Immunological products and their dose schedule. Principles of disease control and prevention, hospital acquired infection, prevention and control. . Disinfection, types of disinfection, disinfection procedures, for faeces, urine, sputum, room linen, dead-bodies, instruments.

References

1. Anderson C. Health promotion in community pharmacy: the UK situation. Patient education and counseling. 2000 Feb 1;39(2-3):285-91.
2. Smith F. Community pharmacy in Ghana: enhancing the contribution to primary health care. Health Policy and Planning. 2004 Jul 1;19(4):234-41.
3. Leach C, Layson-Wolf C. Survey of community pharmacy residents' perceptions of transgender health management. Journal of the American Pharmacists Association. 2016 Jul 1;56(4):441-5.

5th Semester

INTENSIVE CARE UNIT

Subject Code: **BANTS1-501** **L T P C** **60 Hours**
3 1 0 4

COURSE OBJECTIVES:

Knowledge about proper assessment and management of patients with intracranial hypertension, including evaluation of data from ICP monitors and extraventricular drains. Identify, evaluate and prioritize current Neuro ICU patient care needs by participating in daily

COURSE OUTCOME:

1. The students gain knowledge about proper assessment and management of patients with intracranial hypertension, including evaluation of data from ICP monitors and extra ventricular drains.
2. To Identify, evaluate and prioritize current Neuro ICU patient care needs by participating in daily.

COURSE SYLLABUS:

UNIT I **15 Hours**

Monitoring in ICU, Ventilators, Respiratory therapy, ABG Machine, Hemodialysis.
Defibrillator, Types of Defibrillator, Principles and mechanism of the defibrillator. Uses and Safety Precautions during use.
Perfusion machine, ECG (electrocardiography), Types of ECG electrodes and leads.
Principle and mechanism of ECG machine.

UNIT II **15 Hours**

Care and maintenance of ventilators, suction machine, monitoring device. Sterilization and disinfection of ventilators, beds, lights, and other apparatus. Control of pollution in ICU, Care of unconscious patients,
Physiotherapy techniques, feeding, insertion of ryles tube, suctioning, posturing of semiconscious and unconscious patients.

UNIT III **15 Hours**

Cardiopulmonary resuscitation (CPR) Basic life support, Advanced life support. Acute Respiratory arrest and Hypoxia Ventilator support, oxygen therapy, maintenance & clear airway.
E.T. tube, Ambu bag, Airway. Management of Asepsis, Acute Poisoning, critically patients, Management of Tetanus patient

UNIT IV **15 Hours**

Intubation, Tracheostomy, CVP (central Venous pressure) Urine Catheterization Insertion of Ryles tube Sterilization and disinfestations of the equipment in ICU, Instruments used in ICU.

References:

1. Draugalis JR, Coons SJ, Plaza CM. Best practices for survey research reports: a synopsis pharmaceutical education. 2008 Sep 1;72

2.Clark V, Van de Velde M, Fernando R, editors. Oxford textbook of obstetric anaesthesia. Oxford University Press; 2016 Aug 18.

3. Karin A. Handbook for Anesthesia and Co-Existing Disease.

4. Equipment-Drugs-Waveforms-Anesthesia- Practical by

INTENSIVE CARE UNIT LABORATORY

Subject Code:**BANTS1-506** | **L T P C** | **4 Hours /week**
0 0 4 2

COURSE OBJECTIVES:

The students gain knowledge about proper assessment and management of patients with intracranial hypertension, including evaluation of data from ICP monitors and extra- ventricular drains. Identify, evaluate and prioritize current Neuro ICU patient care needs by participating in daily rounds on critically ill patients

COURSE OUTCOME:

1. The students gain knowledge about proper assessment and management of patients with intracranial hypertension, including evaluation of data from ICP monitors and extraventricular drains.
2. To Identify, evaluate and prioritize current Neuro ICU patient care needs by participating in daily.

COURSE SYLLABUS

LIST OF PRACTICALS

1. Monitoring in ICU
2. Principles and mechanism of the defibrillator
3. ECG (electrocardiography)
4. Sterilization and disinfectant of ventilators, beds, lights, and other
5. apparatus. Cardiopulmonary resuscitation (CPR)
6. Intubation
7. Tracheotomy
8. CVP (central Venus pressure)
9. Urine Catheterization,
10. Insertion of ryles tube
11. Sterilization and disinfestations of the equipment's in ICU.

References

1 Draugalis JR, Coons SJ, Plaza CM. Best practices for survey research reports: a synopsis for authors and reviewers. American journal of pharmaceutical education. 2008 Sep 1;72
2 Clark V, Van de Velde M, Fernando R, editors. Oxford textbook of obstetric anaesthesia. Oxford University Press; 2016 Aug 18.
3 Karin A. Handbook for Anesthesia and Co-Existing Disease.
4 Equipment-Drugs-Waveforms-Anesthesia- Practical by JP Brothers.

CENTRAL STERILE SUPPLY DEPARTMENT

Subject Code:**BANTS1-502** **L T P C** **60 Hours**
3 1 0 4

COURSE OBJECTIVES:

The purpose of sterilization and disinfection procedures is to prevent transmission of microbes to patients. These standard precautions should be used in interaction with all patients because it is unknown whether any particular patient may be the reservoir of transmissible bacteria, viruses, or other microbes.

COURSE OUTCOME:

1. Knowledge about the purpose of sterilization and disinfection procedures is to prevent transmission of microbes to patients.
2. Knowledge about the standard precautions should be used in interaction with all patients because it is unknown whether any particular patient may be the reservoir of transmissible bacteria, viruses, or other microbes.

COURSE SYLLABUS

UNIT I **12 Hours**

Waste disposal

Introduction to bio medical waste, Types of bio medical waste, Bio Medical Waste Management, Collection of bio medical waste, Hazards of Biomedical waste.

UNIT II **12 Hours**

Disinfectants, Types of disinfectants

Use of disinfectants for cleaning equipment's, sharps, blunt and etc. Contaminated high risk baby care - delicate instruments or hot care instruments.

UNIT III **12 Hours**

Cleaning process - use of detergents. Mechanical cleaning apparatus, cleaning instruments, cleaning jars, receivers bowls, trays, basins and similar hand ware utensils.

Cleaning of catheters and tubing's, cleaning glass ware, cleaning syringes and needles.

UNIT IV **12 Hours**

Materials used for wrapping and packing assembling pack contents. Types of packs prepared. Inclusion of trays and all parts 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.

UNIT V **12 Hours**

Sterilization and Disinfection.

Moist heat sterilization.

Dry heat sterilization

EO gas sterilization

References

1. Kumar S. Textbook of microbiology. JP Medical Ltd; 2012 Sep 30.
2. Draugalis JR, Coons SJ, Plaza CM. Best practices for survey research reports: a synopsis for authors and reviewers. American journal of pharmaceutical education. 2008 Sep 1;72(1).

CENTRAL STERILE SUPPLY DEPARTMENT LABORATORY

Subject Code:**BANTS1-507** | **L T P C** | **4 Hours /week**
0 0 4 2

COURSE OBJECTIVES: The purpose of sterilization and disinfection procedures is to prevent transmission of microbes to patients. These
standard precautions should be used in interaction with all patients because it is unknown whether any particular patient may be the reservoir of transmissible bacteria, viruses, or other microbes.

COURSE OUTCOME:

1. Knowledge about the purpose of sterilization and disinfection procedures is to prevent transmission of microbes to patients.
2. Knowledge about the standard precautions should be used in interaction with all patients because it is unknown whether any particular patient may be the reservoir of transmissible bacteria, viruses, or other microbes.

COURSE SYLLABUS

LIST OF PRACTICALS

1. Procedure of Autoclave.
2.Procedure of Hot air oven
3.Procedure of EO
4.Procedure of instruments packing.
5.Procedure of Fumigation of Operation theater.
6.Techniques of Disinfectants.
7.Procedure of scrubbing
8.Procedure of washing.
9. Sterilization of the anesthetic instruments.
10.Procedure of sterilization in chamber.

REFERNCE

1. Kumar S. Textbook of microbiology. JP Medical Ltd; 2012 Sep 30.
2. Draugalis JR, Coons SJ, Plaza CM. Best practices for survey research reports: a synopsis for authors and reviewers. American journal of pharmaceutical education. 2008 Sep 1;72(1).

HEALTH CARE

Subject Code:BANTS1-503 **L T P C** **60 Hours**
3 1 0 4

COURSE OBJECTIVES:

Bringing experience, care, and extensive knowledge to help improve the lives of patients. Seeking a growing or new medical practice to help build effective healthcare for all patients. Energetic professional seeking a nursing position in a medical clinic devoted to the public's access to healthcare

COURSE OUTCOME:

1. Knowledge to improve the lives of patients. Seeking a growing or new medical practice to help build effective healthcare for all patients.
2. Knowledge to develop energetic professional seeking a nursing position in a medical clinic devoted to the public's access to healthcare

COURSE SYLLABUS

UNIT I **15 Hours**

Introduction to Health

Definition of Health, Determinants of Health, Health Indicators of India, Health Team Concept. National Health Policy

National Health programs (Briefly Objectives and scope) Population of India and Family welfare program in India

UNIT II **15 Hours**

What is nursing? Nursing principles. Inter-Personnel relationships.

Bandaging: Basic turns; Bandaging extremities; Triangular Bandages and their application.

Nursing Position: Bed making, prone, lateral, dorsal, dorsal re-cumbent, Fowler's positions, Comfort measures, Aids and rest and sleep.

UNIT III **15 Hours**

Lifting and Transporting Patients: Lifting patients up in the bed. Transferring from bed to wheel chair. transferring from bed to stretcher.

Bed Side Management:

Giving and taking Bed pan, Urinal: Observation of stools, urine. Observation of sputum, Understand use and care of catheters, enema giving.

UNIT IV **15 Hours**

Methods of Giving Nourishment:

Feeding, Tube feeding, drips, transfusion

Care of Rubber Goods, Recording of body temperature, respiration and pulse, Simple aseptic technique, sterilization and disinfection.

Surgical Dressing: Observation of dressing procedures

First Aids in various medical abnormalities

References

1. Williams LS, Hopper PD. Understanding medical surgical nursing. FA Davis; 2015 Jan 9
2. Lundy KS, Janes S. Essentials of community-based nursing. Jones & Bartlett Learning; 2003.
3. Synopsis of medical instruments & procedure by JP Brothers.

FIRST AID

Subject Code:BANTS1-504	L	T	P	C	30 Hours
	2	0	0	2	

COURSE OBJECTIVES:

This course emphasizes to know about first aid techniques

COURSE OUTCOME:

This course emphasizes the students deal with first aid techniques

COURSE SYLLABUS

First aid: Aims and objectives of first aid

UNIT- **7 Hours**

Basic first aid techniques on, Respiratory system & breathing, Cardiac condition, blood circulation & Shock

UNIT-II **8 Hours**

Wounds & injuries, Dressing and bandages and Fractures & dislocation of the bone & joints. Neurological conditions & unconsciousness

UNIT-III **7 Hours**

Abnormality of the gastrointestinal tract & food poisoning, Electric shock; burns, haemorrhage.

UNIT-IV **8 Hours**

Drug toxicity & poisoning. Bites & stings and Foreign body in ENT & Skin.

Reference

1. Emerich K, Gazda E. Review of recommendations for the management of dental trauma presented in first-aid textbooks and manuals. Dental traumatology. 2010 Jun;26(3):212-6.
2. Altintas KH, Aslan D, Yildiz AN, Subasi N, Elçin M, Odabasi O, Bilir N, Sayek I. The evaluation of first aid and basic life support training for the first year university students. The Tohoku journal of experimental medicine. 2005;205(2):157-69.
3. Le T, Bhushan V, Sheika-Ali M, Cecilia Lee K. First Aid for the USMLE Step 2 CS. McGraw Hill Education.; 2014.

MEDICAL LAW AND ETHICS

Subject Code:**BANTS1-505** **L T P C** **30 Hours**
2 0 0 2

COURSE OBJECTIVES:

To know about personal, economic, ethical, and legal issues that influence the patient and the physician in primary care. Important areas: personal: balance in physician's personal life, independent learning and self-evaluation

COURSE OUTCOME:

1. The students gain knowledge for the personal, economic, ethical, and legal issues that influence the patient and the physician in primary care.
2. To know about important areas: personal: balance in physician's personal life, independent learning and self-evaluation

COURSE SYLLABUS

Rationale: Legal and ethical considerations are firmly believed to be an integral part of medical practice in planning patient care. Advances in medical science, growing sophistication of the modern society‘s legal framework, increasing awareness of human rights and changing moral. Principles of the community at large, now result in frequent occurrences of healthcare professionals being caught in dilemmas over aspects arising from daily practice.

Medical ethics has developed into a well-based discipline which acts as a "bridge" between theoretical bioethics and the bedside. The goal is "to improve the quality of patient care by identifying, analyzing, and attempting to resolve the ethical problems that arise in practice". Physicians are bound by, not just moral obligations, but also by laws and official regulations that form the legal framework to regulate medical practice. Hence, it is now a universal consensus that legal and ethical considerations are inherent and inseparable parts of good medical practice across the whole spectrum. Few of the important and relevant topics that need to be focused on are as follows:

UNIT-I **8 Hours**

Medical ethics - Definition - Goal – Scope, Introduction to Code of conduct

UNIT-II **8 Hours**

Basic principles of medical ethics – Confidentiality & Malpractice and negligence - Rational and irrational drug therapy

UNIT- III **7 Hours**

Autonomy and informed consent - Right of patients & Care of the terminally ill- Euthanasia 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.

UNIT- IV **7 Hours**

Professional Indemnity insurance policy

Development of standardized protocol to avoid near miss or sentinel events

Obtaining an informed consent.

Ethics in the profession of Medical Laboratory Science

Reference

1. Medical Law and Ethics by Bonnie F Fremgen
2. Medical Law and Ethics by Jonathan Herring

HEALTH DELIVERY SYSTEM

Subject Code: **BANTS1-508** **L T P C** **15 Hours**
1 0 0 1

COURSE OBJECTIVES:

The course provides the students a basic insight into the main features of the Indian health care delivery system and how it compares with the other systems of the world.

COURSE OUTCOME:

Provide knowledge to students about basic insight into the main features of the Indian health care delivery system and how it compares with the other systems of the world.

COURSE SYLLABUS

UNIT I **4 Hours**

Introduction to healthcare delivery system

Healthcare delivery system in India at primary, secondary and tertiary care, Community participation in healthcare delivery system, Health system in developed countries.

- Private Sector
- National Health Mission
- National Health Policy
- Issues in Health Care Delivery System in India

UNIT II **4 Hours**

National Health Programmes – Background objectives, action plan, targets, operations, achievements and constraints in various National Heath Programmes.

- Introduction to AYUSH system of medicine
- Introduction to Ayurveda
- Yoga and Naturopathy
- Unani
- Siddha
- Homeopathy
- Need for integration of various systems of medicine

UNIT III **4 Hours**

Health scenario of India – past, present and future. Public health in India, Demography & Vital Statistics

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

UNIT IV **4 Hours**

Epidemiology

- Principles of epidemiology
- Natural history of disease
- Methods of epidemiological studies
- Epidemiology of communicable & non-communicable diseases, disease transmission, host defense immunizing agents, cold chain, immunization, disease monitoring and surveillance.

6TH Semester

ANAESTHESIA FOR SPECIALITY SURGERIES

Subject Code:**BANTS1 -601** **L T P C** **60 Hours**
3 1 0 4

COURSE OBJECTIVES:
A primary purpose of the course is to know about uses of anesthetic instruments, anesthetic procedure and anesthetic drugs in different medical conditions.

COURSE OUTCOME:
1. To know about uses of anesthetic instruments, anesthetic procedure
2. To know about anesthetic drugs in different medical conditions.

COURSE SYLLABUS

UNIT I **15 Hours**
Anesthesia for Obese patients
Neurosurgical anesthesia
Anesthesia in Laparoscopic surgery.

UNIT II **15 Hours**
Anesthesia for Obstetric procedure
Anesthesia in pediatric patient's surgery.
Anesthesia in Orthopedic surgery

UNIT III **15 Hours**
Anesthesia in geriatric surgery
Anesthesia for Ophthalmic surgery
Anesthesia in day care surgery.

UNIT IV **15 Hours**
Anesthesia for ENT surgery
Anesthesia for management of burn patients.
Anesthesia in Pain management.

Reference
1. Synopsis of medical instruments & procedure by JP Brothers.
2. Short text book of anesthesia by JP Brothers.
3. Textbook-Anesthesiav by Pramod Kumar
4. Equipment-Drugs-Waveforms- by JP Brothers

ANAESTHESIA FOR SPECIALITY SURGERIES LABORATORY

Subject Code:**BANTS1 -606** **L T P C** **4 Hours /week**
0 0 4 2

COURSE OBJECTIVES: A primary purpose of the course is to know about uses of anesthetic instruments, anesthetic procedure and anesthetic drugs in different medical conditions.

COURSE OUTCOME:

1. To know about uses of anesthetic instruments, anesthetic procedure
2. To know about anesthetic drugs in different medical conditions.

COURSE SYLLABUS

1. Neurosurgical anesthesia
2. Anesthesia in Laparoscopic surgery
3. Anesthesia for Obstetric procedure
4. Anesthesia in pediatric patient's surgery.
5. Anesthesia in Orthopedic surgery
6. Anesthesia for Ophthalmic surgery
7. Anesthesia in day care surgery
8. Anesthesia for ENT surgery
9. Anesthesia in Pain management

Reference

1. Synopsis of medical instruments & procedure by JP Brothers.
2. Short text book of anesthesia by JP Brothers.
3. Textbook-Anesthesiav by Pramod Kumar
4. Equipment-Drugs-Waveforms- by JP Brothers

GENERAL PATHOLOGY

Subject Code:**BANTS1 -602**

L	T	P	C	60 Hours
3	1	0	4	

COURSE OBJECTIVES:

About diseases of the human organ system as well as causes, sign symptoms, pathophysiology, investigation and transmission route of the diseases.

COURSE OUTCOME:

1. In this course the students gain knowledge about diseases of the human organ system.
2. And knowedgle causes, sign symptoms, pathophysiology, investigation and transmission route of the diseases.

COURSE SYLLABUS

UNIT I **15 Hours**

Introduction & History of pathology, Basic definitions and familiarization with the common terms used in pathology, Causes and mechanisms of cell injury, reversible and irreversible injury, Introduction of hyperplasia, hypoplasia, hypertrophy, atrophy, metaplasia, necrosis and apoptosis

UNIT II **15 Hours**

General features of acute and chronic inflammation: Vascular changes, cellular events, Cells and mediators of inflammation, Phagocytosis and its mechanism
Cancer: Definitions, nomenclature, characteristics of benign and malignant neoplasm, metastasis, Carcinogens and cancer, concept of oncogenes, tumour suppressor genes, DNA repair genes and cancers stem cells.

UNIT III **15 Hours**

Tissue Renewal and Repair, healing and fibrosis, cirrhosis, introduction of oedema, hyperaemia, congestion, haemorrhage, haemostasis, thrombosis, embolism, infarction, shock and hypertension.

UNIT IV **15 Hours**

Protein energy malnutrition, deficiency diseases of vitamins and minerals, nutritional excess and imbalances. Role and effect of metals (Zinc, Iron and Calcium) and their deficiency diseases, Aetiology and pathophysiology of diabetes, arteriosclerosis, myocardial infarction, respiratory diseases (COPD), Parkinson disease Infectious Diseases: pathogenesis & overview of modes of infections, prevention and control with suitable examples like Typhoid, Dengue

Reference

1. Levison D, Reid R, Burt AD, Harrison DJ, Fleming S. Muir's textbook of pathology. CRC Press; 2012 Dec 11.
2. Rajendran R. Shafer's textbook of oral pathology. Elsevier India; 2009.

MEDICINE RELEVANT TO ANAESTHESIA TECHNOLOGY

Subject Code:**BANTS1 -603**	**L**	**T**	**P**	**C**	**60 Hours**
	3	**1**	**0**	**4**	

COURSE OBJECTIVES:

A primary purpose of the course is to study various medical conditions that are associated with Anaesthesia & effect the Anaesthesia.

COURSE OUTCOME:

To study about various medical conditions that are associated with Anaesthesia & effect the Anaesthesia.

COURSE SYLLABUS

UNIT-I **15 Hour**

Diabetes Mellitus, Hypertension, Ischemic heart disease, Obesity
Elderly Patient, Pregnancy, Shock , COPD

UNIT- II **15 Hour**

Chronic and acute renal failure and Chronic liver disease/failure,

UNIT – III **15 Hour**

Anemia and Pediatric patient Infant/Neonate

UNIIT- IV **15 Hour**

Epilepsy, CVA

Reference

Stoelting RK, Dierdorf SF. Anesthesia and co-existing disease. 2002.

RESEARCH METHODOLOGY & BIOSTATISTICS

Subject Code:**BANTS1 -604** **L T P C** **60 Hours**
3 1 0 4

COURSE OBJECTIVES:

To understand the basic principles of research and methods applied to draw inferences from the research findings.

Aware of using biostatistics and understanding of data, sampling methods, in addition to being given information about the relation between data and variables.

COURSE OUTCOME:

1. The objective of this module is to help the students to understand the basic principles of research and methods applied to draw inferences from the research findings.
2. The students will also be made aware of the need of biostatistics and understanding of data, sampling methods, in addition to being given information about the relation between data and variables.

COURSE SYLLABUS

UNIT- I **12 hours**

Research Methodology:

Introduction to research methods, Identifying research problem, Ethical issues in research and Research design

UNIT-II 12 **hours**

Basic Concepts of Biostatistics, Types of Data, Research tools and Data collection methods, Sampling methods and Developing a research proposal

UNIT-III **12 hours**

Biostatistics: Need of biostatistics, What is biostatistics: beyond definition, Understanding of data in biostatistics and How & where to get relevant data

UNIT-IV **12 hours**

Relation between data & variables, Type of variables: defining data set, Collection of relevant data: sampling methods

UNIT- V **12 hours**

Construction of study: population, sample, normality and its beyond (not design of study, perhaps), Summarizing data on the pretext of underlined study and Understanding of statistical analysis (not methods)

Reference

1. . Statistical Methods by S.P. Gupta
2. . Methods in biostatistics for medical students by B.K. Mahajan
3. RPG Biostatistics by Himanshu Tyagi

INNOVATION & ENTREPRENEURSHIP

Subject Code:**BANTS1 -605** **L T P C** **30 Hours**
2 0 0 2

COURSE OBJECTIVES:

In the first place, to achieve this goal, students will be introduced to the basic terminology, typology of innovations and historical context for better comprehension. Also issues of innovation management will be introduced. Students will become familiar with the impact of innovation on competitiveness in individual companies with innovative processes and aspects that affect it, including applicable methods and innovation management techniques.

COURSE OUTCOME:

1. The aim of the course is to motivate students to innovate in business. In the first place, to achieve this goal, students will be introduced to the basic terminology, typology of innovations and historical context for better comprehension.
2. Also students should know issues of innovation management will be introduced. Students will become familiar with the impact of innovation on competitiveness in individual companies with innovative processes and aspects that affect it, including applicable methods and innovation management techniques.

COURSE SYLLABUS

UNIT I **8 Hours**

Innovation: Innovation, the basic definition and classification. The relationship of innovation and entrepreneurship, creation of competitive advantage based on innovation.
Innovative models. Product, process, organizational and marketing innovation and their role in business development.
Sources of innovation (push, pull, analogies), transfer of technology.

UNIT II **8 Hours**

Creative methods and approaches in innovation management: Approaches used in management of the innovation process (agile management, Six Thinking Hats).
Project approach to innovation management, strategies for innovation management.
Role of co-creation in the innovation process. The strategy of innovation process, types and selection of appropriate strategies.
Barriers to innovation in business: innovation failure and its causes, post-audits of innovative project

UNIT III **7 Hours**

Entrepreneurship: Definition, Concept, Growth and role.
The Entrepreneur: types, Characteristics, theories of Entrepreneurial class, Urges and importance of Entrepreneurship Stimulants; Seed-Beds of Entrepreneurship, Influencing Factors;

Problems (Operational and Non-Operational) and Obstacles. Entrepreneurial Management. Role of socio-economic environment.

UNIT IV **7 Hours**

Skills for a New Class of Entrepreneurs; The Ideal Entrepreneurs; The Entrepreneurship Audit; Identification of opportunities by an Entrepreneur; The steps to identify the project /ventures; Process of converting business opportunities into reality. Feasibility Report and analysis; Process of setting up a small scale industry / unit

Reference

1. Stoelting RK, Dierdorf SF. Anesthesia and co-existing disease. 2002.
2. Marks M. BPS Mahila Vishwavidyalaya, Khanpur Kalan Department of Commerce Scheme and Syllabus of Examinations for Master of Commerce (wef July 2015) First Semester.
3. Kurpayanidi KI. ACTUAL PROBLEMS OF IMPLEMENTATION OF INVESTMENT INDUSTRIAL ENTREPRENEURIAL POTENTIAL. Theoretical & Applied Science. 2020(1):301-7.
4. Chandra P. Projects: Preparation, Appraisal, Implementation. Tata McGraw-Hill; 1984.
5. Bowonder B, Mani S. Venture capital and innovation: the Indian experience. Financial Systems, Corporate Investment in Innovation, and Venture Capital. 2004;197.
6. Audretsch D. Entrepreneurship research. Management decision. 2012 May 25.

BIOMEDICAL WASTE MANAGEMENT

Subject Code:**BANTS1 -607** **L T P C** **15 Hours**
1 0 0 1

COURSE OBJECTIVES:

The aim of this section will be to help prevent harm to workers, property, the environment and the general public.

COURSE OUTCOME:

To prevent harm to workers, property, the environment and the general public.

COURSE SYLLABUS

Unit I **3 Hours**

Definition of Biomedical Waste, Types of waste generated from Health Care Facility
Waste minimization

Unit II **4 Hours**

BMW – Segregation, collection, transportation, treatment and disposal (including color coding)
BMW Classification: Liquid BMW, Radioactive waste, Metals / Chemicals / Drug waste

Unit III **4 Hours**

BMW Management & methods of disinfection
Modern Technology for handling BMW

Unit IV **4 Hours**

Use of Personal protective equipment (PPE)
Monitoring & controlling of cross infection (Protective devices)

Reference

1. Rajan R, Robin DT, Vandanarani M. Biomedical waste management in Ayurveda hospitals–current practices and future prospective. Journal of Ayurveda and integrative medicine. 2019 Jul 1;10(3):214-21.

2. Rao SK, Ranyal RK, Bhatia SS, Sharma VR. Biomedical waste management: an infrastructural survey of hospitals. Medical Journal Armed Forces India. 2004 Oct 1;60(4):379-82.

3. Soliman SM, Ahmed AI. Overview of biomedical waste management in selected Governorates in Egypt: A pilot study. Waste management. 2007 Jan 1;27(12):1920-3.