

CENTRE FOR RURAL HEALTH

PGDSI SYLLABI
(With effect from July 2018)

GANDHIGRAM RURAL INSTITUTE
(Deemed to be University)
GANDHIGRAM - 624 302

Post Graduate Diploma in Sanitary Inspectors' Course
Revised Syllabus Presented to the Board of Studies held on 23.05.2018
For Academic Year 2018-2019
Level: Post Graduate Diploma-FIRST SEMESTER

Category	Course Code	Course Title	No of Credits	Marks		
				CFA	ESE	Total
Core Courses Core Courses	18PSIP0101	Biological Science I Anatomy and Physiology	3	40	60	100
	18PSIP0102	Biological Science II Medical Entomology and Parasitology and Microbiology	4	40	60	100
	18PSIP0103	Epidemiology of Communicable and Non Communicable Diseases Control	4	40	60	100
	18PSIP0104	Environmental Sanitation	4	40	60	100
	18PSIP0105	Behavioural Sciences and Health Promotion	4	40	60	100
	18PSIP0106	Biological Science I Anatomy and Physiology-Practical	1	60	40	100
	18PSIP0107	Biological Science II Medical Entomology and Parasitology and Microbiology-Practical	1	60	40	100
	18PSIP0108	Epidemiology, Communicable and Non Communicable Diseases Control - Practical	1	60	40	100
C	18EXNP00V1	Village Placement Programme	2	50		50
C	18GTPP0001	Gandhi in Everyday Life	2	50		50
C						
		Total	26	480	420	900

CNCC: Compulsory Non Credit Course

SECOND SEMESTER

Category	Course Code	Course Title	No of Credit	Marks		
				CFA	ESE	Total
Core Courses	18PSIP0209	Special Sanitation Problems	4	40	60	100
	18PSIP0210	Public Health Administration	4	40	60	100
	18 PSIP0211	Food& Nutrition &MCH	4	40	60	100
	18PSIP0212	Environmental Sciences	3	40	60	100
	18PSIP0213	Environmental Sanitation - Practical	*2	60	40	100
E M	18PSIP02EX & EY	Electives	4	40	60	100
	18PSIP 0214	Concurrent Field Training (CFT)	#2	100		100
	18PSIP 0215	Supervised Field Training (SFT)	#2	100		100
		Total	25	460	340	800

Electives for 18PSIP02EX & 18PSIP02EY

Category	Course Code	Course Title	No of Credit	Marks		
				CFA	ESE	Total
Elective Major	18PSIP02EX	Solid Waste Management	4	40	60	100
	18PSIP02EY	Emergency Care in Disasters and First Aid theory	3+1	24+24	36+16	100

***Practical**

#CFT= Concurrent Field Training

Supervised Field Training

FIRST SEMESTER

Course Code	Course Title	Credit
18PSIP0101	Biological Science – I Anatomy and Physiology	3
18PSIP0102	Biological Science – II Medical Entomology and Parasitology and Microbiology	4
18PSIP0103	Epidemiology of Communicable and Non Communicable Diseases Control	4
18PSIP0104	Environmental Sanitation	4
18PSIP0105	Behavioural Sciences and Health Promotion	4
18PSIP0106	Biological Science – I Anatomy and Physiology - Practical	1
18PSIP0107	Biological Science - II Medical Entomology and Parasitology and Microbiology-Practical	1
18PSIP0108	Epidemiology, Communicable and Non Communicable Diseases Control - Practical	1
18EXNP00V1	Village Placement Programme	2
18GTPP0001	Gandhi in Everyday Life	2

PGDSI- FIRST Semester

Paper I - Biological Science - I Anatomy and Physiology

Credit: Theory 3 & Practical: 1

Objective: The students will be able to explain the structure and Functions of various systems of human body.

Specific objectives of learning: At the end of the course the students will be able to

1. Describe structure and function of cells.
2. Describe structure and function of Digestive ,Skeletal , Muscular, Nervous, Respiratory, Cardiac, Endocrine, Excretory and Reproductive systems

Unit 1 - Introduction to Anatomy and Physiology

Cells and Tissues - Functions of cell – Mitosis – Meiosis – Determination of Sex - **The Tissues** – Epithelial tissue – Connective tissue – Muscular tissue – Nervous tissue – Membranes and Glands
Blood – Functions and compositions – RBC – WBC – Platelets – Clotting of Blood – Blood groups – Disorders of blood

Lymphatic System – Compositions and functions – Lymph nodes – Spleen – Tonsils

The Skeletal system – Classification and Structure of bone – Bones of the Skull – Cranial fossae – The Fontanelles – Sinuses of the skull – Bones of the face – Bones of the upper limb – Bones of wrist and hand - Bones of thorax – Vertebral column – Bones of the pelvic girdle – Bones of lower limb - Bones of foot.

Joints of the skeleton – classification and movements – Joints of upper limb and lower limb – joint disorders

The Muscular system – Muscles of Head, Face and Neck - Muscles of shoulder girdle - Muscles of upper limb - Muscles of thorax - Muscles of abdomen - Muscles of back - Muscles of perineum - Muscles of pelvis - Muscles of lower limb, buttock, thigh, foot – Diseases of muscles

Physiology of Muscles - Properties of skeletal Muscles - Physiology of muscle contraction - Oxygen debt – Heat production

Unit II

The Digestive System – The Structure and functions of mouth – Tongue – Teeth – Salivary glands – Pharynx – Oesophagus - Stomach.

Small intestine – Large intestine – Rectum, Anus and defecation – Digestion and absorption of food – Peritoneum

Accessory Organs of Digestion – The structure and functions of liver – Gall bladder – Pancreas, Metabolism - Diet and vitamins

The Cardio Vascular System – Structure and functions of Heart – Arterial and Venous system – Branches of arteries and veins – Blood circulation – Cardiac cycle – Conduction system – Properties of cardiac muscles – Heart sounds - Pulse – ECG – Cardiac output – Blood Pressure – Factors affecting BP – Disorders of Heart and Blood vessels – Disorders of BP

The Respiratory- System – Structure and function – Upper respiratory tract - Lungs – Mechanism of respiration – Regulation of respiration – Respiratory volumes – Exchange of gases – Disorders of respiration and artificial respiration

Unit III

The Nervous System – Structure and function – Cerebrum – Basal ganglia – Thalamus - Hypothalamus – Cerebellum – Midbrain – Pons – Medulla oblongata. Spinal cord – Meninges – Ventricles of brain - Cerebrospinal fluid – Cranial nerves – Spinal nerves – Sensation – Sensory organs – Sensory path – Motor path – Reflex action.

Autonomic Nervous System – Sympathetic and parasympathetic nervous system.

Organs of Special Senses - The Eye and sense of sight – Accessory structures of eye – The eye ball – Mechanism of sight – Accommodation – Diseases of the eye – **The Ear, Sensation of Hearing and Equilibrium** - External ear – Middle ear – Internal ear – Mechanism of hearing and equilibrium – **Sensation of Taste (Gestation)** – the taste buds - **Sensation of Smell (Olfaction)**
Skin – Structure and functions of skin – Regulation of body temperature & Physiology of pain

UNIT IV

The Excretory System – Structure and function - Kidney – Formation of urine – Ureter – Urinary bladder – Urethra – Micturition – Composition of urine – Diseases of the urinary system – Classification of oedema

Endocrine system – Structure and function – Pituitary gland –Thyroid gland – Parathyroid gland – Adrenal gland – Pancreas – Sex glands – Thymus – Pineal gland.

The Reproductive System – Structure and functions – Male reproductive system – Female genital organs – Puberty in female – Ovulation – Menstruation – Menopause – Process of reproduction - Fertilization – Placenta – Umbilical cord.

Unit V

First Aid: First Aid- Definition- scope- Management of diseases, Golden rules of First Aid, Safety Consciousness. Wounds and Bleeding, Shock and unconsciousness, Asphyxia, Injuries to bones, muscles-joints-dislocation, Splint, Bandages, Slings, Burns and Scalds, Poison, Transport of injured persons and stretcher bearing. Snakebite, Dog bite, Bee sting and other allergies, First Aid box, recent update and other advances. Ambulance Services, Prevention of Accidents and injuries, Emerging challenges and issues in First Aid care

Emergency care in Disaster: Introduction, Definition, Classification of Disaster, Scopes, Objectives and Principles of Disaster Management, Strategies and Skill during Disaster Management, Current updates about Disaster, Organizations to handle the Disaster. Emerging challenges and issues in Disaster Management

Practical Demonstrations: The students will be able

- To locate anatomical position of the human body and important organs.
- To identify the bones and Joints in the human body
- To identify the types of blood cells – Total Count, Differential Count.
- To measure the HB level
- To collect blood samples for investigation and transmission for blood screening.
- To measure the visual acuity using Snellen's chart.
- To detect sugar and albumin in the urine.

Reference Books:

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|--|-----------------------|
| 1, Anatomy and Physiology for Nurses | - Evelyn & Bearce |
| 2. Hand book of Human Physiology | - Vidyardan |
| 3. Anatomy and Physiology | - Ross and Wilson |
| 4. First Aid | - L.G.Gupta & A.Gupta |
| 5. Anatomy and Physiology and Health Education | - N.Murugesan |

Learning objectives

At the end of UNIT I the students will be able

- To list the functions of the cells and tissues
- To describe the functions and compositions of blood
- To list the blood groups
- To explain the disorders of blood
- To explain lymphatic system
- To describe the skeletal system and classification and structure of bone
- To describe classification and movements joints of the skeleton
- To list joint disorders
- To describe the muscular system, Physiology of muscles, properties of skeletal muscles.
- To describe the physiology of muscle contraction, oxygen debt and heat production
- To explain the diseases of muscles

At the end of UNIT II the students will be able

- To describe the accessory organs of digestion
- To explain the structure and functions of liver, gall bladder and pancreas.
- To explain the metabolism
- To explain the cardio vascular system
- To describe the structure and functions of heart
- To explain the blood circulation
- To identify the factors affecting blood pressure
- To list the disorders of heart, blood vessels and blood pressure
- To explain structure and function of the respiratory and system
- To describe the mechanism of respiration
- To list the disorders of respiration and artificial respiration

At the end of UNIT III the students will be able

- To describe the structure and function of the nervous system.
- To identify the parts of the brain.
- To explain the reflex action.
- To describe the autonomic nervous system.
- To list the sensory organs and sensation.
- To describe the structure of organs of special senses-Eye, Ear and Nose.
- To explain the structure and functions of skin.
- To describe the mechanism of regulation of body temperature.
- To identify the physiology of pain.

At the end of UNIT IV the students will be able

- To describe the structure and function excretory system.
- To list the problems of the urinary system.
- To explain the structure and function of endocrine system.
- To describe the structure and functions of the reproductive system.
- To identify the different parts of the male and female reproductive system.
- To explain the process of fertilization.

At the end of UNIT V the students will be able

- To define the first aid.
 - To explain the importance of management of injured.
 - To describe the golden rules of first aid.
 - To list the emerging challenges and issues in first aid care.
 - To explain the important care to be given for the injured person.
 - To define the emergency care in disaster management.
 - To explain the objectives, principles and strategies of disaster management.
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LECTURE SCHEDULE

Paper I – Biological Science I Anatomy and Physiology

UNIT	Content
1	Cells and Tissues – Functions of cell – Mitosis – Meiosis – Determination of Sex
2	The Tissues – Epithelial tissue – Connective tissue – Muscular tissue – Nervous tissue – Membranes and glands
3	Blood – Functions and compositions – RBC – WBC – Platelets.
4	Clotting of blood – Blood groups – Disorders of blood
5	Lymphatic System – Compositions and functions – Lymph nodes – Spleen – Tonsils.
6	The Skeletal system – Classification and structure of bone – Bones of the skull – Cranial fossae – The fontanelles – Sinuses of the skull – Bones of the face
	Bones of the upper limb – Bones of wrist and hand – Bones of thorax
	Vertebral column – Bones of the pelvic girdle – Bones of lower limb – Bones of foot
	Joints of the skeleton – Classification and movements – Joints of upper limb and lower limb – Joint disorders.
7	The Muscular system – Muscles of head, face and neck – Muscles of shoulder girdle – Muscles of upper limb – Muscles of thorax – Muscles of abdomen – Muscles of back – Muscles of Perineum – Muscles of Pelvis – Muscles of lower limb, buttock, thigh, foot – Diseases of muscles.
	Physiology of Muscles - Properties of skeletal muscles – Physiology of Muscle contraction - Oxygen debt – Heat production.
II-1	The Digestive System – The Structure and functions of mouth – Tongue – Teeth – Salivary glands – Pharynx – Oesophagus - Stomach. Small intestine – Large intestine – Rectum, Anus and defecation – Digestion and absorption of food – Peritoneum.
	Accessory organs of Digestion – The structure and functions of liver – Gall bladder – Pancreas. Metabolism – Diet and vitamins.
2	The Cardio vascular system – Structure and functions of Heart.
	Arterial and Venous system – Branches of arteries and veins – Blood circulation - cardiac cycle – conduction system – properties of cardiac muscles – Heart sounds - Pulse – ECG – Cardiac output
	Blood pressure – Factors affecting BP – Disorders of Heart and blood vessels – Disorders of Blood pressure.
3	The Respiratory- System – Structure and function – Upper respiratory tract – Lungs – Mechanism of respiration
	Regulation of Respiration -Respiratory volumes – Exchange of gases – Disorders of respiration and artificial respiration.
III	The Nervous system – Structure and function – Cerebrum
1	Basal ganglia – Thalamus - Hypothalamus – Cerebellum – Mid brain – Pons – Medulla oblongata
	Spinal cord – Meninges – Ventricles of brain – Cerebrospinal fluid Cranial nerves – Spinal nerves – Sensation – sensory organs Sensory path – Motor path – Reflex action. Autonomic Nervous System – Sympathetic nervous system – Parasympathetic nervous system.
2	Organs of Special Senses – The Eye and Sense of sight – Accessory structures of eye – The eye ball – Mechanism of sight – Accommodation – Diseases of the eye.
	The Ear, Sensation of Hearing and Equilibrium - External ear – Middle ear –

	Internal ear – Mechanism of hearing and equilibrium –
	Sensation of Taste (Gustation) – the taste buds – Sensation of Smell (Olfaction) .
	Skin – Structure and functions of skin – Regulation of body temperature. Physiology of pain.
IV-1	The Excretory System – Structure and function - Kidney – Formation of urine
	Ureter – Urinary bladder – Urethra – Micturition – Composition of urine
	Diseases of the Urinary system – Classification of oedema.
2	Endocrine system – structure and function – pituitary gland
	thyroid gland – Parathyroid gland
	Adrenal gland - Pancreas – Sex glands – Thymus – Pineal gland
3	The Reproductive System – Structure and functions – Male reproductive system
	Female genital organs – Puberty in female.
	Ovulation – Menstruation – Menopause-Process of reproduction – Fertilization – Placenta – Umbilical cord.
V	First Aid: First aid- Definition- Scope- Management of diseases, Golden rules of first aid
	Safety consciousness. Wounds and bleeding, Shock and unconsciousness, Asphyxia.
	Injuries to bones, Muscles-joints-dislocation, Splint, Bandages, Slings, Burns and Scalds, Poison, Transport of injured persons and stretcher bearing. Snakebite, Dog bite, Bee sting and other allergies, First aid box, Recent update and other advances. Ambulance services, Prevention of accidents and injuries, Emerging challenges and issues in First aid care.
	Emergency care in Disaster: Introduction, Definition, Classification of disaster and health hazards, Scopes, Objectives and principles of Disaster management, Strategies and skill during the disaster management, Current updates about disaster, Organizations to handle the disaster. Emerging challenges and issues in disaster Management.

Biological Science II-Medical Entomology and Parasitology and Microbiology
Credit: Theory 4 & Practical 1

OBJECTIVES: At the end of the course the students will be able:

- To explain the role of vectors in transmitting the diseases and their control measures
- To explain the role of parasites in relation to human health and their control measures
- To recognize microbes and their role in disease and control measures

Unit-I: MEDICAL ENTOMOLOGY

Introduction to entomology, classification of insects; Metamorphosis, Vectors, Main and intermediate hosts etc. - General characteristics of mosquitoes-types - Life cycle of Anopheles, Culex, Aedes and Mansonia mosquitoes, and their public health importance - Insecticides and their classification, spray techniques - Integrated Management of Vector control - Control and preventive measures of vector borne diseases

Unit-II: MEDICAL ENTOMOLOGY

- 1 Sand fly: Morphology, Bionomics, Life cycle, PH importance and control measures
- 2 House fly: Morphology, bionomics, life cycle, PH importance and control measures
- 3 Flea: Different species, Morphology, bionomics, Life cycle, Public Health importance, control measures.
- 4 Louse and Bed bug: Morphology, Bionomics, Lifecycle, Public Health importance and control measures.
- 5 Ticks and Mites: Morphology, Bionomics, Lifecycle, Public Health importance and control measures.
- 6 Cyclops: Morphology, Bionomics, Life cycle, Public Health importance and control measures.
- 7 Rodents- Rats and their control measures

Unit-III: PARASITOLOGY

- 1 Introduction to Parasitology- Protozoan parasites: Entamoeba histolytica- Life cycle, Mode of transmission and control measures.
- 2 Blood parasite: Malarial parasites, Types, Morphology, Life cycle, Mode of transmission, control measures, Retracts endothelial system, leishmonia donovani.
- 3 Platy helminthes worms: Tape worms.-Taenia solium, T. saginata, Echinococcus granulosus -Morphology, Life cycle, Mode of transmission and control measures.
- 4 Helminthes –round worms: Hookworm, Round worm, Pin worm, Guinea worm, whip worm and Filarial worm- Morphology, Life cycle Mode of transmission and Control measures.
- 5 Flukes-Liver- lungs-blood
- 6 Skin parasites: Itch mite Morphology, life cycle, Mode of transmission and control Measures.

Unit-IV: GENERAL MICROBIOLOGY

- 1 Introduction to microbiology-Historical development of the field microbiology- Louis Pasteur, Edward Jenner, Robert Koch, Alexander Fleming, S.A.Waksman, Tswart, Robert Koch and Ronald Ross
- 2 Study of different Microscope: Simple, compound, Electron and Dark-field Classification, structure, Reproduction of organisms of microbes - Bacteria, fungi, virus, bacteriophages, Rickettsia, Mycoplasma, spirochetes, Diseases, control measures, lab diagnosis.
- 3 Study of bacteria, Distribution, Morphological groupings
- 4 Sterilization, Autoclaving, Disinfection, Disinfectants, Antibiotics, Antiseptic, Micro-waving and Incineration
- 5 Milk microbiology: Milk spoilage, Milk borne pathogens, Methylene blue test and other Milk tests – Pasteurization – LTH, HTST, OHT methods, Efficiency UHT
- 6 Methods of blood test – Spot / Rapid tests, Elisa, Western-blot and PCR.

Unit-V: SPECIAL MICROBIOLOGY

- 1 Study of different a) Bacterial, , b) Viral, c) Rickettsial, d) Spirochete disease causing organisms and their a) Etiological causative agent, b) Shape, c) Size d) Staining properties (Spore staining, Gram staining and Acid Fast staining with grading) e) Mode of transmission f)Normal habitat g) Incubation period of diseases and h) Control measures
Immunology-:a) Immunity – Immune System – Mechanism – Innate Immunity – Inflammation fever -active, passive- Immune responses: Antibodies, Primary Secondary immune responses, - Hypersensitivity, Allergy, Herd immunity Vaccine, Adjuvant, Sera, immunoglobins, immunological test – Precipitation – Agglutination – Compliment Fixation tests.
Water Microbiology. Coli form group (Presumptive Confirmed and Completed test) MPN- Sampling of water for bacteriological analysis
Food Microbiology
 - a. Food poisoning-preventive measures ,
 - b. Food borne infections- preventive measuresBacteria Genetics, Structure of DNA, RNA
Transcription, Translation, Mutation.
Gene transfer, Transformation, Transduction, Conjugation. Genetic Engineering.
DNA probe. Application of DNA Probe.

Practical: ENTOMOLOGY AND PARASITOLOGY

- 1 Preparation of thick and thin smear of blood and night blood smear for filarial cases
- 2 Demonstration and identification of different vectors and their immature forms
- 3 Demonstration and identification of
 - a) Protozoan parasites,
 - b) Helminthes worms and their eggs.
 - c) Demonstration of insecticides used in the vector control including larvicides (adult larvicides).
 - d) Collection of larvae, pupae of different species of mosquitoes'

Practical: MICROBIOLOGY

- To identify different types of Microscopes and its component
- To identify Cocci and Bacilli by using gram staining & Acid Fast staining
- To identify pathogenic microbes
- To prepare Hanging drops to show the motility of bacteria
- To demonstrate media for preparation of Fungi
- To prepare the media preparation Coliform test
- To demonstrate Sterilization and disinfection methods
- To demonstrate Methylene blue test to identify the microorganisms
- To prepare media for Bacteriological analysis
- To demonstrate sterilization and disinfection methods

Field visit to

District Entomology Microbiology Lab to observe Vector & Fly control programmes.

References:

1. Text Book of Medical Parasitology, Dr.S.Subhash Chandra Par, All India Publishers & Distributors, N.Delhi,2008
 2. Text book of Microbiology(7th edition), R.Ananthanarayanan & C.J Panicker, University Press, Hyderabad,2008
 3. Immunology, Ashim K.Chakaravarthy, TataMcgraw hills Pub.co. NewDelhi,1996
 4. Text book of Entomology, Md. Sulaiman, Himalaya Publishing House,1992
 5. General and applied Entomology, KK.Nair, TN.Ananda Krishnan and BV David, Tata McGraw hills Pub.co. New Delhi, 2000.
 6. Text Book of Medical Parasitology, E.K.Jayaram Panicker, Jaypee Bros., medical publication,1993.
 7. Textbook of Entomology and Elementary Parasitology, by G.K.Rathnaswamy.
 8. A Text book for Preventive and social Medicine, J.E. Park
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Learning outcomes: Entomology Parasitology and Microbiology:

At the end of unit I the students will be able

To classify Insects, vectors and identify public Health importance of Mosquitoes and fly, Cyclops

To explain control measures including integrated vector control measures

At the end of unit II the students will be able

To explain lifecycle of Housefly, Flea, Louse, Bed bug, Ticks and Mites

To discuss public Health importance of Housefly, Flea, Louse, Bed bug, Ticks and Mites

To describe control measures of Housefly, Flea, Louse, Bed bug, Ticks and Mites

To classify insecticides of spray techniques for anti larval measures.

To explain spray techniques for anti larval measures

To explain the control and preventive measures of vector borne diseases

At the end of unit III the students will be able

To explain life cycle of protozoan parasites worms, Fluke and skin parasites.

To discuss mode of transmission of protozoan parasites worms, Fluke and skin parasites

To recognize control measures of protozoan parasites worms, Fluke and skin parasites

At the end of unit IV the students will be able

To discuss Historical development in the field Microbiology

To explain structure of different Microorganisms- Bacteria, virus and Fungi

To discuss reproduction of Microorganisms- Bacteria, virus and Fungi

To describe modes of transmission of disease through micro organisms

To discuss control measures of organisms by Sterilization (Physical method) and disinfection (chemical method)

At the end of unit V the students will be able

To discuss Bacteriological quality of Milk, Water and Food.

To explain protective role of Immune system and also deleterious effect such as allergy by Immune system.

To write important vaccines and types of sera and Immunoglobulin

To learn about the theory of immunological tests precipitation

To discuss Sampling of water for bacteriological analysis

To explain food poisoning and its preventive measures

To discuss Food borne infections and its preventive measures

Bacterial Genetics- to learn basic principle of Mutation, Genetransfer and DNA probes and triplications.

Learning outcomes Practical: Entomology and Parasitology

To prepare thick and thin smear of blood

To identify different vectors and their immature forms

To identify Protozoan parasites

To identify Helminthes worms and their eggs

To identify insecticides used in the vector control including larvicides (adult larvicides)

To demonstrate spray techniques

LECTURE SCHEDULE
Paper II-Biological Science II-Medical Entomology - Parasitology and Microbiology

UNIT	Content
I	Medical Entomology
	Introduction to entomology, classification of insects; definitions of metamorphosis, vectors, main and intermediate hosts etc.,
	General characters of mosquitoes, different types.
	Life cycle of Anopheles, and public health importance.
	Life cycle of Culex, and public health importance
	Life cycle of Mansonia mosquitoes and public health importance
	Important species and control measures. Integrated vector control.
	Insecticides and their classification, spray technique-Integrated Management of Vector control- control and preventive measures of vector borne diseases
II	Sand fly: Morphology, Bionomics, Life cycle, PH importance and control measures.
	House fly: Morphology, bionomics, life cycle, PH importance and Control measures
	Flea: Different species, Morphology, bionomics, Life cycle and PH importance, Control measures of fleas
	Louse and Bed bug: Morphology, Bionomics, Lifecycle, PH importance and Control measures
	Ticks and Mites: Morphology, Bionomics, Lifecycle, PH importance and Control measures of Ticks and Mites
	Cyclopes: Morphology, Bionomics, Life cycle, PH importance and control measures of Cyclopes
	Rodents- Rat and their control measures
III	Parasitology
	Introduction to Parasitology. Protozoan parasites: Entamoeba Histolytica: Life cycle, mode of transmission and control measures, Retracts endothelial system, leishmonia donovani.
	Blood parasite: Malarial parasites, Types, Morphology, Life cycle, Mode of transmission, Control measures.
	Platy helminthes worms: Tape worms.-Taenia solium, T. saginata, Echinococcus granulosus -Morphology, Life cycle, Mode of transmission and Control measures
	Helminthes –round worms: Hookworm, Round worm, Flukes- Pin worm, Guinea worm whip worm and Filarial worm - Morphology, Life cycle, Mode of transmission and Control measures
	Flukes-Liver- lungs-blood
	Skin parasites: Itch mite Morphology, life cycle, Mode of transmission and control measures
IV	Microbiology
	Introduction to microbiology-Historical development of the field microbiology- Louis Pasteur, Edward Jenner, Robert Koch, Alexander Fleming, S.A.Waksman, Twart, Robert Koch and Ronald Ross
	Study of different microscope: Simple, compound, Electron and Dark-field.

	Classification, structure and reproduction of organisms of microbes, Bacteria, fungi, virus, bacteriophages Rickettsia, spirochetes, Diseases, control measures, lab diagnosis.
	Study of bacteria, Distribution, Morphological groupings.
	Sterilization, Autoclaving, Disinfection, Disinfectants, Antibiotics, Antiseptic, Micro-waving and Incineration
	Milk microbiology: Milk spoilage, Milk borne pathogens, Methylene blue test, Milk test
	Methods of blood test – Spot / Rapid tests, Eliza, Western-blot and PCR.
V	Study of different a) Bacterial, b) Fungal, c) Viral, d) Rickettsial, e) Spirochete disease causing organisms and their A) Etiological causative agent, b) Shape, c) Size d) Staining properties (Spore staining, Gram staining and Acid Fast) e) Mode of transmission f) Normal habitat g) Incubation period of diseases and h) Control measures
	Immunology: -a) Immunity, immune system, mechanism innate immunity, inflammation fever - active, passive- Immune responses: Antibodies, Primary Secondary immune responses, - Hypersensitivity, Allergy, Herd immunity, Vaccine, Sera, immunoglobins, immunological tests, precipitate, Agglutination, Complement fixation test.
	Adjuvant, Water Microbiology. Coli form group (Presumptive Confirmed and Completed test) MPN- Sampling of water for bacteriological analysis
	Food Microbiology: Food poisoning-preventive measures , Food borne infections- preventive measures

EPIDEMIOLOGY OF COMMUNICABLE AND NON COMMUNICABLE DISEASES CONTROL

Credit: Theory 4 & Practical 1

Objective: At the end of the course the students will be able

- To define communicable and non communicable diseases
- To explain epidemiology triad
- To list communicable and non communicable diseases
- To identify the causative organisms, mode of transmission, incubation period, sign and symptoms of various communicable diseases
- To explain the preventive measures of communicable diseases
- To list non communicable diseases
- To identify the risk factors of non communicable diseases
- To explain preventive measure of non communicable diseases
- To describe the relevant National Health Programmes with objective and strategies.

UNIT I General Epidemiology

- 1 Concepts of Health and Diseases- Definition and Philosophy of Health
- 2 Dimensions of Health Concept of Well-being- PQLI & HDI - Spectrum of Health
- 3 Determinants and Indicators of Health
- 4 Concept of Disease- Concept of Causation, Risk factors - Risk groups Disease cycle
- 5 Spectrum of Disease, Iceberg of Disease
- 6 Concept of Control and Concept of Prevention

UNIT II Principles of Epidemiology

- 1 Definition- Aims- Epidemiological approach- Epidemiological triad
- 2 Investigation of cases with standardized format. [Imported/indigenous cases]
- 3 Measurements in Epidemiology, Measurement of Mortality- Measurement of Morbidity
- 4 Incidence and Prevalence
- 5 Terminology used in Infectious disease Epidemiology
- 6 Uses of Epidemiology
- 7 Dynamics of Disease Transmission
- 8 Immunity, immunizing agents- Hazards of Immunization, Cold-chain, Vaccine Vial Monitor, and National Immunization Schedule
- 9 General Measures of Control of Infectious diseases- Disinfection. Investigation of an Epidemic

UNIT III Control of Communicable Diseases

- 1 **Control of Airborne Respiratory Infections:**
Small pox, Chicken pox, Measles, Mumps, Influenza, Diphtheria, Whooping Cough.
Acute Respiratory Infection, Tuberculosis, Asthma
National Tuberculosis Control Programme -RNTCP
- 2 **Control of Waterborne Intestinal Infections:**
Poliomyelitis, Viral Hepatitis, Acute, Diarrhoeal Disease, Cholera, Food Poisoning- Role of HI/ SI, Form 1 & 2 and case sheet, Typhoid Fever, Roundworm- Hookworm National Diarrhoeal Diseases Control programme

UNIT IV Vector borne and other Communicable Disease control

- 1 **Control of Arthropod borne infections** Dengue Syndrome, Malaria, Lymphatic Filariasis, Chikungunya- Kala Azar- Scrub Typhus – Yellow fever-Integrated disease surveillance project
National Anti Malarial Health Programme
National Filaria Control Programme
National Dengue Fever Control Programme

- National Kala Azar Control Programme
- 2 **Control of Zoonosis:**
Rabies, Plague, Japanese Encephalitis, Anthrax, Rickettsial Diseases, KFD- Brucellosis- SARS
National Japanese Encephalitis Control Programme
 - 3 **Control of Scabies, Pediculosis, Trachoma, Tetanus, and Leprosy**
National Leprosy Control Programme
 - 4 Control of Sexually Transmitted Diseases [Syndromic Treatment and management], AIDS [Syndrome], Control of Hospital Acquired Infections -Universal Precautions and Post Exposure Prophylaxis
National STDs Control Programme
National AIDS Control Programme
 - 5 Emerging and Re-emerging Diseases, recent updates and other advancement

UNIT V Control of Non-Communicable diseases

- 1 Coronary Heart Diseases, Obesity, Hypertension Stroke, Emerging Challenges and issues in the NCD
- 2 Control of Cancer
National Cancer Control Programme
- 3 Control of Diabetes Mellitus, Disease and stroke
- 4 Blindness, National Blindness Control Programme
- 5 Control of Accidents and Injuries
- 6 Survey of NCD / Case findings

Practical: Identify and describe the following spotters

Vaccines
Cold chain equipments
Antiseptics and disinfectants
Addicting agents and Habituating
Cancer causing chemicals
Devices to prevent accidents and injuries
Syringes
Pathology specimens
Disease photos and pictures
Photo graphs of patients showing sign and symptoms
ORS
Drugs - Albendazole, FST
Nutritional drugs
Identify the food adulteration
Food sample
Diabetic diets, Food fortification –iodized salt

Field visits

1. To observe cold chain maintenance at CHC , PHC, HSC
2. To visit malaria clinic programme
3. To visit isolation ward in Govt. Hospitals
4. To visit ICTC, VCT Centers in NACP
5. To visit the District TB centers

Reference Books:

- | | |
|---|------------------|
| 1. Essentials of Community Health Nursing | - By K. Park |
| 2. A Short Book of Public Health | - By V. K. Muthu |
| 3. A Text Book for Preventive and Social Medicine | - By J. E. Park |

Learning objectives

At the end of unit I the students will be able to

- To explain the Concepts and Philosophy of Health and disease.
- To describe the Dimensions of Health
- To explain PQLI & HDI - Spectrum of Health.
- To list Determinants of Health Indicators of Health.
- To identify the Risk factors - Risk groups of communicable and non communicable Disease cycle
- To recognize Spectrum of Disease, Iceberg of Disease.
- To explain the Concept of Control and Concept of Prevention of disease

At the end of unit II the students will be able to

- To define the term Epidemiology and Epidemiological triad and Definition- Aims- Epidemiological approach
- To explain Investigation procedure
- To describe Measurements in Epidemiology, Measurement of Mortality- Measurement of Morbidity
- To differentiate Incidence and Prevalence of disease
- To describe Terminology in Infectious disease Epidemiology
- To explain uses of Epidemiology of diseases
- To explain Dynamics of Disease Transmission
- To describe importance of cold chain maintenance Immunity, immunizing agents- Hazards of Immunization, Vaccine Vial Monitor, and National Immunization programme and Schedule.
- To describe general measures of control of infectious diseases and Disinfection.
- To describe the investigation procedure of an epidemic.

At the end of unit III the students will be able to

Control of Communicable Diseases

- To explain the Control and preventive measures Airborne Respiratory Infections (Small pox, Chicken pox, Measles, Mumps, Influenza, Diphtheria, and Whooping Cough. Acute Respiratory Infection, Tuberculosis, Asthma and relevant National Health Programmes)
- To explain Control and preventive measures Waterborne disease and Intestinal Infections (Poliomyelitis, Viral Hepatitis, Acute Diarrhoeal Disease, Cholera, Food Poisoning- Role of HI/ SI, Form 1 & 2 and case sheet, Typhoid Fever, Roundworm- Hookworm and relevant National Health Programmes.
- To explain the Emerging and Reemerging Diseases, recent updates and other advancement.
- National Diarroheal Diseases Control programme

At the end of unit IV the students will be able to

To explain Vector borne and other Communicable Disease control

Control of Arthropod borne infections (Dengue Syndrome, Malaria, Lymphatic Filariasis, Chikungunya- Kala Azar- Scrub Typhus – Yellow fever and relevant National Health Programmes.) National Malaria Eradication Programme, National Filaria Control Programme

To describe control measures of Zoonosis(Rabies, Plague, Japanese Encephalitis, Anthrax, Rickettsial Diseases, KFD- Brucellosis- SARS and relevant National Health Programmes.)

To explain the Control and preventive measures of Scabies, Pediculosis, Trachoma, Tetanus, and Leprosy- Control of Sexually Transmitted Diseases [Syndromic Treatment and management], AIDS [Syndrome], Control of Hospital Acquired Infections and relevant National Health Programmes.

To explain the Emerging and Re-emerging Diseases, recent updates and other advancement

National vector borne disease control Programme

National Leprosy Control Programme

National STDs Control Programme

National AIDS control Programme

At the end of unit V the students will be able to

Control of Non-communicable diseases:

To list Non-communicable diseases (Coronary Heart Diseases, Obesity, Hypertension Stroke, Control of Cancer, Control of Diabetes Mellitus, Blindness, Control of Accidents and Injuries.)

To explain the case finding method NCD

To explain Emerging Challenges and issues in the NCD.

To describe objectives and strategies of

National Cancer Control programme

National Diabetes Control programme

National blindness control programme and prevention of blindness

LECTURE SCHEDULE

UNIT	Content
I	Introduction to Epidemiology Concepts of Health and Diseases- Definition and Philosophy of Health- Dimensions of Health
	Concept of Well-being- PQLI & HDI- Spectrum of Health- Determinants of Health- Indicators of Health
	Concept of Disease- Concept of Causation Risk factors- Risk groups Disease cycle- Spectrum of Disease Iceberg of Disease- Concept of Control- Prevention
II	Principles of Epidemiology:
	Definition- Aims- Epidemiological approach
	Measurements in Epidemiology- Measurement of Mortality- Measurement of Morbidity
	Incidence and Prevalence- Terminology in Infectious disease Epidemiology- Uses of Epidemiology- Dynamics of Disease Transmission
	Immunity- Immunizing agents- Hazards of Immunization
	Cold chain- Vaccine Vial Monitor- National Immunization Schedule-National Immunization programme
	General Measures of Control of Infectious diseases- Disinfection
III	Control of Respiratory Infections: Small pox- Chicken pox- Measles- Mumps
	Influenza
	Diphtheria- Whooping Cough
	Acute Respiratory Infection-Tuberculosis- Asthma National Revised TB Control programme
	Control of Intestinal Infections: Poliomyelitis
	Viral Hepatitis
	Acute Diarrhoeal Disease National Diarroheal Diseases Control programme
	Cholera
	Food Poisoning- Typhoid Fever
	Roundworm- Hookworm
IV	Control of Arthropod borne infections: Dengue Syndrome
	Malaria- National Malaria Eradication programme
	Lymphatic Filariasis National filariasis control programme

	Chikungunya- Kala Azar- Scrub Typhus
	Control of Zoonosis: Rabies- Plague-Japanese Encephalitis- Anthrax
	Rickettsial Diseases- KFD- Brucellosis- SARS
	Control of Scabies- Pediculosis- Trachoma-Tetanus
	Leprosy- Control of Sexually Transmitted Diseases National Leprosy Eradication programme National STIs Control programme
	HIV/AIDS National AIDS control programme
	Control of Hospital Acquired Infections
V	Introduction to Non-Communicable Diseases: Coronary Heart Diseases- Obesity –Hypertension-Stroke
	Control of Cancer- National cancer control programme Control of Diabetes Mellitus National diabetes control programme Blindness National blindness control programme
	Control of Accidents and Injuries

PAPER IV - ENVIRONMENTAL SANITATION

Credit: Theory 4 & Practical 2

Objectives: At the end of the course the students will be able

- To discuss man's physical environmental factors in relation to health and sanitation
- To provide potable water supply, safe water supply
- To motivate the people for safe disposal of excreta
- To ensure Safe disposal of waste water and sewage

UNIT-I SMALL SCALE [RURAL] WATER SUPPLY

Introduction- History –Definition- Scope of environmental sanitation – Relationship of environmental sanitation and health and its importance -Water and Health - Sources of water and characteristics - Diseases transmitted through water and channels of transmission of infection – Protected water supply - estimating the quantity of water supply to the community - Community wells - selection of site for a wells-renovation of an existing wells - Study of various types of wells-Disinfection for Tank and well - Water sample collection for water quality test - National Rural Drinking Water Programme - National Water supply and sanitation programme -Water Quality Monitoring

UNIT-II LARGE SCALE [URBAN] WATER SUPPLY

Urban water supply -Difference between a pumped system and gravity system - components of water treatment plant –different types of filtration: Disinfection methods - Fluoridation and de-fluoridation – desalinization – Reverse Osmosis System – Duties of sanitary inspectors in relation to water supply

UNIT-III HUMAN EXCRETA DISPOSAL

Public health aspects of Human excreta disposal - Requirements of a sanitary latrine-selection of site for latrines- Types of latrines and construction methods – leach pit - Sanitary Toilet Complexes - Definitions - Planning for Sanitary Toilet Complexes - Key Steps Involved in Planning of Sanitary Toilet Complexes - Construction of a Sanitary Toilet Complex - Operation and Maintenance Arrangements for Sanitary Toilet Complexes - Technology Options for Sanitary Toilet Complexes - Toilet Seat with Superstructure - Waste Disposal Systems – Total sanitation Campaign

Septage Management – Current Scenario in TamilNadu – the need for Decentralized Septage management System in TamilNadu – Design and Construction of Septic tank – Pumping and desludging – Septage Transportation – Treatment and final Disposal - Zero waste excreta disposals

UNIT-IV WASTE WATER DISPOSAL

Sullage water or house-hold waste water - Public health importance and methods of disposal of waste water - Zero waste water disposals - Types of liquid waste - Different methods of waste water disposal -soak pits, seepage pit-dispersion trench - kitchen garden.

Municipal Swage Management – Sewage – Objectives – Sewer – Components of Sewer – Sewage Treatment plant – components – parameter for sewage treatment water – Activated Sludge Process – Trickling Filter – Oxidation pond – Sludge Digester – Food establishment waste water disposal system

UNIT –V SAFETY ASPECTS AND MEASURES FOR SANITARY WORKERS

Preventive Measures Hazard-specific Preventive Measures Confined Space Hazards - Chlorine Poisoning – fall – slip – Electric shock – fire - Personal Protection and Protective Devices - Head Protection - Face and Eye Protection - Hands and Lower Arms - Body Protection - Legs and Feet – Mask - Ear Protection - Safety Belt - Portable Lighting Equipment -Portable Blowers / Ventilating Fan - Safety Fences - Safety Signs - Workplace-specific Preventive Measures - On-site - Sewer System - Pumping Station - Sewage Treatment Plant - Sewage Treatment Plant
Health Aspects and Measures- Preventive Measures - Personal Hygiene against Pathogen - Maintaining Cleanliness - Health Check - Welfare Measures - Corrective Measures - SAFETY PERSONNEL (ORGANISATION) - Institutional Arrangement - Human Resources
Corrective Measures - Emergency Contact- Emergency Measures - First Aid Tools – Extinguisher - Emergency Lighting - Searching out Hazards.

Practical:

- 1 Water Supply- Sanitary Well, Shallow Well, Deep well, Horrock's Apparatus, Water Sample Collection For Water Quality Test, Residual Chlorine by using Chloro-scope, To find out the available chlorine in water, Water Quality Test by using Water Test Kit, Sanitary Survey of Well
- 2 Construction of Toilets- Simple pit Latrine, Lid cover Latrine, Direct pit water seal toilet, Single offset pit water seal toilet, two pit water seal toilet, and Eco and VIP latrine.
- 3 Leach Pit and Septic Tank
- 4 Solid Waste Management- Household level Manure pit by underground, Windrow Method, Vermi-compost at community level
- 5 Waste Water Disposal- Soak pit, Soakage pit, Dispersion Trench

Observation visits

1. Drinking water treatment plants
2. Solid waste management at different levels
3. Bio medical waste management
4. Sewerage Treatment Plant

Reference Books:

1. Preventive and Social Medicine by J.E Park and K.Park.
2. Municipal and Rural Sanitation by Ehlers and Steel.
3. Public Health Engineering by GS Bajwa.
4. Waste water engineering, treatment and reuse by Metcalf and Eddy,5th Edition,Tata Mc graw hill
5. Environmental sanitation –Ehlers, V.M., add steel,E.W.,McGraw-Hill Book Co

Learning outcomes

At the end of unit-I: The students will be able

1. To explain- introduction- history- definition and scope of environmental sanitation
2. To explain water and health- sources of water and their characteristics
3. To explain diseases transmitted through water and channels of infection
4. To discuss- protected water supply- estimating the quantity of water supply to community
5. To explain the community wells- selection of site for well-renovation of existing wells
6. To explain the study of various types of wells-infiltration gallery-pond water supply
7. To define the disinfection and the explain various methods of disinfection of water supply
8. To discuss the sample collection for testing the water quality
9. To discuss the National rural drinking water programme

At the end of unit-II: Urban water supply the students will be able

1. To explain the components of urban water supply system-difference between a pumped system and gravity system
2. To explain the Different types of treatment methods
3. To explain the slow sand infiltration- rapid sand infiltration
4. To define the fluoridation and defluoridation-domestic treatment of water-desalination
5. To discuss the duties of sanitary inspector in relation to water supply
6. To discuss the National Drinking Water Mission

At the end of unit-III: Human Excreta Disposal the students will be able

1. To discuss the Public health aspects of Human excreta disposal-requirements of a sanitary latrine
2. To explain the Selection of site for latrines
3. To explain the Public and house hold latrines
4. To explain the Decomposition of excreta-types of latrines and construction features
5. To discuss the travel of pollution from latrine pits and originations of latrine programme in rural and urban areas

At the end of unit-IV WASTE WATER DISPOSAL

1. To explain Sullage water or house-hold waste water
2. To discuss Public health importance and methods of disposal of waste water
3. To define Zero waste water disposals –
4. To list types of liquid waste - Different methods of waste water disposal -soak pits, seepage pit-dispersion trench - kitchen garden.
5. To enumerate Municipal Sewage Management – Sewage – Objectives – Sewer – Components of Sewer
6. To describe Sewage Treatment plant – components – parameter for sewage treatment water
7. To discuss Activated Sludge Process – Trickling Filter – Oxidation pond – Sludge Digester
8. To familiarize Food establishment waste water disposal system

At the end of unit-V: UNIT –V SAFETY ASPECTS AND MEASURES FOR SANITARY WORKERS

1. To explain Preventive Measures Hazard-specific Preventive Measures Confined Space Hazards - Chlorine Poisoning – fall – slip – Electric shock – fire - Personal Protection and Protective Devices - Head Protection - Face and Eye Protection - Hands and Lower Arms - Body Protection - Legs and Feet – Mask - Ear Protection - Safety Belt - Portable Lighting Equipment -Portable Blowers / Ventilating Fan –
2. To discuss Safety Fences - Safety Signs - Workplace-specific Preventive Measures - On-site - Sewer System - Pumping Station - Sewage Treatment Plant - Sewage Treatment Plant
3. To discuss Health Aspects and Measures- Preventive Measures - Personal Hygiene against Pathogen - Maintaining Cleanliness - Health Check - Welfare Measures - Corrective Measures - SAFETY PERSONNEL (ORGANISATION) - Institutional Arrangement - Human Resources
4. To enumerate Corrective Measures - Emergency Contact- Emergency Measures - First Aid Tools – Extinguisher - Emergency Lighting - Searching out Hazards.

LECTURE SCHEDULE

UNIT	Content
I	Rural water supply
	Introduction- History –Definition- Scope of environmental sanitation
	Relationship of environmental sanitation and health and its importance
	Water and Health-Sources of water and characteristics
	Diseases transmitted through water and channels of transmission of infection
	Protected water supply-estimating the quantity of water supply to the community
	Community wells-selection of site for a wells-renovation of an existing wells
	Study of various types of wells-infiltration gallery- pond water supply
	House hold and small scale disinfection of water supply
	Water sample collection for water quality test
	National Rural Drinking Water Programme
	National Water supply and sanitation programme
II	Urban water supply
	Components of urban water supply system
	Difference between a pumped system and gravity system
	Different types of treatment of drinking water methods-slow sand filtration-infiltration gallery - Rapid sand filtration, pressure filtration
	Disinfection of large scale units, different kinds of disinfection methods
	Different types/ methods of chlorination – well, river, ponds, multi-storied buildings, etc
	Fluoridation and de-fluoridation- desalination
	Duties of sanitary inspector in water supply
	National Drinking Water Mission -water quality monitoring
III	Human Excreta Disposal
	Public health aspects of Human excreta disposal
	Requirements of a sanitary latrine-selection of site for latrines

	Public and house hold latrines-decomposition of excreta
	Types of latrines and construction features- Travel of pollution from latrine pits
	Originations of latrine program in rural and urban areas
	Machineries used in cleaning works, Low Cost Sanitation Programs- Prevention of Manual Scavenging
	Zero waste excreta disposals / Eco – friendly Bio Toilet
	The Prohibition of Employment as Manual Scavengers and their Rehabilitation Act 2013 (Central Act 25 of 2013) and the rules made there under
IV	<p>WASTE WATER DISPOSAL</p> <p>Sullage water or house-hold waste water - Public health importance and methods of disposal of waste water - Zero waste water disposals - Types of liquid waste - Different methods of waste water disposal -soak pits, seepage pit-dispersion trench - kitchen garden</p>
	<p>Municipal Swage Management – Sewage – Objectives – Sewer – Components of Sewer – Sewage Treatment plant – components – parameter for sewage treatment water – Activated Sludge Process – Trickling Filter – Oxidation pond – Sludge Digester – Food establishment waste water disposal system</p>
V	<p>Preventive Measures Hazard-specific Preventive Measures Confined Space Hazards - Chlorine Poisoning – fall – slip – Electric shock – fire - Personal Protection and Protective Devices - Head Protection - Face and Eye Protection - Hands and Lower Arms - Body Protection - Legs and Feet – Mask - Ear Protection - Safety Belt - Portable Lighting Equipment -Portable Blowers / Ventilating Fan - Safety Fences - Safety Signs - Workplace-specific Preventive Measures - On-site - Sewer System - Pumping Station - Sewage Treatment Plant - Sewage Treatment Plant</p>
	<p>Health Aspects and Measures- Preventive Measures - Personal Hygiene against Pathogen - Maintaining Cleanliness - Health Check - Welfare Measures - Corrective Measures - SAFETY PERSONNEL (ORGANISATION) - Institutional Arrangement - Human Resources</p>
	<p>Corrective Measures - Emergency Contact- Emergency Measures - First Aid Tools – Extinguisher - Emergency Lighting - Searching out Hazards.</p>

BEHAVIOURAL SCIENCES AND COMMUNITY HEALTH

Credit: 4

OBJECTIVES:

- To identify the role of behavioural sciences and its importance in community health.
- To Plan, organize, conduct and evaluate health education activities in a given area
- To identify health education needs in a given community
- To Prepare health education points for given community health programme
- To Select and use suitable educational methods and prepare educational aids for health education activities
- To Prepare a report of health educational activities for a community

UNIT I: INTRODUCTION TO BEHAVIOURAL SCIENCES AND HEALTH

Behavioral Sciences: Disciplines; Scope and role in community Health; Sociology; Anthropology; Psychology - **Health Education:** Health Promotion; interventions; principles; Difference between Health Education; Health Promotion - **Sociology of health:** factors influencing health; social-cultural; economic and its role in health behaviour - **Role of Social institutions:** Family; Marriage; Kinship; Groups; Religion in health behavior - **Types of community health:** Primary, secondary, tertiary Health care and prevention.

UNIT II: TEACHING, LEARNING AND COMMUNICATION PROCESS

Teaching, Learning: Learning situation; Principles of Adult learning; Learning theory; Kurt Lewin; Kelman - **Educational methods:** Individual Contact/Family visit; Group discussion; Lecture discussion; Demonstration; Work shop; Panel discussion; Role play; Case study; Campaign - **Motivation**-Kurt Lewin; Force Field analysis; Rosen Stock Principles of Motivation - **Communication:** Characteristics; Principles; Overcoming barriers in communication; Types; Interpersonal and Mass communication; Rumour; process; Checking of rumours; Audio-Visual aids: Classification; Importance; Limitation of AV aids; Selection criteria- Steps- in using AV Aids-Preparation of IEC materials - **Behavioural Change:** Communication Model - Information – Education- Communication-(IEC) Organizing and Conducting the IEC program on health care delivery - **Counselling**- steps- qualities of a counselor.

UNIT III: COMMUNITY AND COMMUNITY ORGANIZATION

Community: Characteristics; Differences between Rural and Urban communities - **Leadership:** Source; type; Importance of working through community leader; Methods of identification of informal leader; Sociogram; importance - **Training Camp for community -leaders:** Agenda; Organizing; conducting; evaluating training camp - **Community organization:** Principles of community organization; Importance of community participation; Identifying the stake-holders / leaders / adopters / volunteers / peer educators and social organizations / associations. Inter-sectoral Co ordination in community health programme

Role of a professional Health Worker in community organization - **PRA Tools for community organization:** Venn diagram; Seasonality diagram; Transect; Social Mapping; Time line.

UNIT IV: Programme planning for health educational activities:

Programme planning: Need; Principles; Criteria; Steps in Programme Planning; Community Health and Educational diagnosis - **Method of data collection for Health Education programme:** Interview; Survey; Observation; Discussion; Identification of KAP; (knowledge- Attitude- Practice), Baseline; Family Health / Household; Socio economic; Rapid survey (Advantage and limitation) - **Tools for data collection:** Schedules; Questionnaire; checklists

Assessing barriers to health education- Felt needs; assessment of felt needs and its prioritization - Health programme planning

UNIT V: School Health Education

School Health Education: importance; Elements of school health programme; Suggested steps and routine health education; Health education opportunities available in schools;

Communities Celebration: Observation of National; International important health days

Evaluation: objectives; Types; Steps; Format of evaluation, - **Report:** Characteristics of report; Format of a report; Preparation and writing a report for a health education activity carried out in a community

Field visits

1. Identification of leaders in a community
2. Conduct of Group discussion, Demonstration and Interview on given health and sanitation topic
3. Application of PRA techniques related to community health
4. Visit to community/ICDS centre/ primary school and providing health and hygiene education

Learning outcomes of Field visits

1. Acquiring skills in interview techniques
2. Developing skills in identifying leaders
3. Developing skills in organizing and conducting educational programmes in different settings
4. Preparing educational points for health and sanitation programmes
5. Equip Demonstrate PRA methods

Reference Books:

1. Health Education: A New Approach, L.Ramachandran, T.Dharmalingam.
2. Teaching for better Learning: A Guide for Teachers of Primary Health care Staff, F.R.Abbatt
3. Management Training Modules for Medical Officers, Primary Health Centre, Somanath Roy, et al, NIHFV
4. A Text book for Preventive and social Medicine, J.E. Park.
5. Health Education, Cyril Bibby, William Heinemann Ltd., London, 1951
6. Population, Health, Nutrition & Development, Hector Correa, Lexington Books, London, 1975
7. Elements of Social Psychology, B.Kuppusamy, Vikas Publishing House, New Delhi,1977
8. Data collection and analysis Rodger Sapsford & Victor Jupp, Sage Publications, New Delhi, 1966
9. How to communicate Evaluation Finding, LL.Morris et al, Sage Publications, New Delhi,1987.
10. Effective Teaching Methods, SR.Vashist, Mangal Deep Publications, Jaipur, 1997
11. Rural Health Education, Dr.S.L.Goel, Deep & Deep Publications (P) Ltd. New Delhi, 2008

Learning Outcomes

At the end of the unit I the students will be able

- To differentiate Health education, Health promotion and propaganda
- To discuss principles of health education and health promotion
- To describe the various interventions in health promotion
- To define community, social stratification, social control, customs, Habit, tradition, norms, values, attitude and culture
- To determine the factors that determine the health behaviour of an individual
- To recognize the importance of social control in health behaviour
- To identify the importance of habit, tradition, values, attitudes, and culture in health behaviour
- To explain the role of social institutions in health behaviour of individual

At the end of the Unit II the students will be able

- To define the term learning, learning situation, adoption, motivation and communication process
- To discuss learning theories of Kurt Lewin-Kelman
- To explain principles of Adult leaning
- To list various educational methods available for health education
- To explain various steps, advantages and limitation of each educational method
- To discuss selection criteria of an educational method
- To explain various steps in adoption process
- To classify various categories of adopters
- To recognize the importance and elements in communication process
- To identify the barriers and overcome these barriers in health education activities
- To identify process of rumours and overcome the rumours in health education
- To plan IEC strategy to implement any health programme in a community
- To explain selection criteria, advantage and limitation of A.V aids for health education programme
- To prepare simple IEC materials
- To organize IEC programme

At the end of the unit III the students will be able

- To compare rural and urban communities
- To discuss the importance of working with community leaders
- To identify the leaders of a community and utilize their services in health promotional activities
- To prepare an agenda for orientation training camp of leaders in a community
- To discuss the importance of community organization principles
- To list various roles to be played by a health worker in community organization
- To use suitable of method of PLA menu for identifying health needs of a community
- To enumerate the importance of Intersectoral co ordination in health programme

At the end of the unit IV the students will be able

- To explain various steps in programme planning
- To recognize the importance of educational and community diagnosis for health education
- To prepare KAP schedule for any health educational programme and identify the health educational needs
- To formulate educational objectives for given health education programme with reference to SMART criteria
- To identify responsive community and sustain it for health programme
- To plan health education programme for by using programme planning steps
- To differentiate felt needs from unfelt needs
- To formulate educational objectives for given health education programme with reference to SMART criteria
- To identify responsive community and sustain it for health programme
- To plan health education programme for by using programme planning steps

UNIT V: At the end of this unit School Health Education - Evaluation of Health Education activities - the students will be able

- To list various elements in school health programme
- To identify opportunities available for health education in school, PHC, HSC and community
- To discuss types of evaluation
- To prepare evaluation report for health education activities carried out in a community
- To prepare a report of health education activity carried out in a community

LECTURE SCHEDULE

UNIT	Content
I	Introduction to Behavioural Sciences and Health Promotion
	Behavioural Sciences- Definition- Scope- Importance –Disciplines-Sociology- Anthropology- Social Psychology Role of behavioral Sciences in Health Promotion
	Health Education – definition- scope- objectives- Principles
	Health Promotion-concept-definition- interventions Difference between Health Education- Health Promotion -propaganda
	Sociology of Health –Factors influencing health- determinants of health
	Social stratification -Class- conditions favourable for development of a class-Social control-Social mobility- Social deviation -Status-Achieved- Ascribed- Customs-Habit- Tradition – difference Norms- Folkways-Mores
	Value systems - Attitudes – Culture–Material- nonmaterial- and its importance in health behaviour
	Social institutions-Family-classification-patriarchal-matriarchal-Nuclear- Joint- Extended-Marriage- types- Groups- classification-Formal- informal-primary –secondary groups- Religion- Education- Economic system- Government
II	Teaching and Learning -Communication process
	Teaching-Learning-Definition-factors affecting learning- Learning-situation–Elements-Learner-Facilitator-SubjectMatter-Teaching equipments- Physical Facilities-
	Principles of Adult learning - Kurt Lewin-Kelman theories of learning
	Educational methods- Steps-Advantages- Limitation -Individual Contact-Family Visit- Group discussion-Lecture discussion-Demonstration-Panel discussions-Role play-Case study-Campaign-Criteria for selection of educational method
	Adoption- diffusion- Definition-difference Stages of adoption process-Roger’s Model- Awareness- Interest- Evaluation- trial- Adoption Classification of adopters- Innovators- Early-Early Majority- Late adopters- Laggards - Importance of adoption process and classification of adopters in health education
	Motivation--principles of motivation process- Kurt Lewin-Force Field analysis-restraining forces- driving forces- Rosen Stock Principles of Motivation- Perceived susceptibility- Perceived severity-Seek treatment or solution direction
	Communication-Purpose-Importance-Process- elements –Characteristics-Principles of communication- Barriers in communication process-overcoming the barriers-Types-One way – Two way - Interpersonal and Mass communication, serial Communication- Rumour- process-counteracting rumour
	Audio-Visual aids-Definition-Classification-Importance - Selection criteria- Steps- Limitation in using AV Aids
	Behavioural Change Communication Model – Steps -IEC- -preparation of IEC materials
III	Community –Community Organization
	Community-Dimension–Characteristics- importance of studying of community for health promotion
	Differences between Rural and Urban communities
	Power structure-source of leader-type of leader-formal- informal- Importance of working through community leader-Methods of identification of informal leader- Observation - Systematic sampling- Selective Group technique- Discussion-Sociogram- importance

	Orientation Training Camp for community leaders - Objectives-Planning –Agenda-Organizing- conducting-evaluating training camp
	Community organization-Principles of community organization. Importance of community -community participation- Need for Intersectoral co ordination in promotion of health
	Role of a professional Worker–as Guide- Enabler- Expert- Social Therapist
	Participating Learning For Action (PLA)- Methods- steps in each method- Venn diagram-Seasonality diagram-Relative ranking-Fish Bowel technique-Transect-Participatory Mapping
IV	Programme planning for health educational activities
	Programme planning-Need- Principles-Criteria-Steps in Programme Planning
	Community diagnosis- educational diagnosis- uses in health education Educational-Objectives-characteristics-SMRT-criteria establishment of objectives for health education
	Method of data collection- interview- survey- observation-discussion - definition-advantage- Limitation -KAP Survey- (knowledge- Attitude- Practice) - Baseline survey-Family Health survey /Household survey -Socio economic survey-Rapid survey-steps-
	Tools for data collection – Survey/interview schedule-Questionnaire- -open ended – closed ended questionnaire- Check list preparation
	Assessing barriers to health education Identifying resources-organization -personnel-material –fund and equipment for health education-Felt needs- steps in determining needs- setting priorities
	Selection -criteria for responsive communities Planning the health education programme with Government –Panchayat Raj Institutions-NGOs- Voluntary agencies and people-Sustenance of a programme at village level
V	School Health Education -Evaluation of Health Education activities
	School Health Education Need- Objectives- importance of school health education-Aspects of school health programme
	Suggested steps -Suggested routine health education activities in school
	Opportunities available for Health education in schools, in the primary health centre , Health sub centre-and in fairs and festivals Celebration-Observation of important health days
	Evaluation- Purposes -objectives Types – Pre- Concurrent- Post evaluation-Steps in evaluation- Format of evaluation for health education programme
	Report-purpose of report-types- Characteristics of a report. Format of a report-Preparation and writing a report for a health education activity carried out in a community

GANDHI IN EVERYDAY LIFE (CNCC)

Credit 2

Objectives:

1. To explain the principles and practices of Gandhi and their relevance in the contemporary times.
2. To acquire character and attitude and cope up with the challenges of daily life.

Specific Objectives: To enable students to:

- To discuss the life and message of Gandhi.
- To describe the Gandhian way of Management.
- To practice the Gandhian model of conflict reduction.
- To lead a humane life on Gandhian lines.
- To become a Gandhian constructive worker.

- Unit.I. **Understanding Gandhi:** Child hood days, Student days, influence of Books and Individuals, Religion, Family, and Social factors. Gandhi as rebel, acquaintance with vegetarianism, as lawyer, encountering and transforming humiliation: in India, in south Africa- train incident, Coach incident, on path way, at court, attack by protesters. Gandhi as political leader and reformer
- Unit.II. **Management:** Gandhi's experiments in managing family- Eleven vows, non-possession and sacrifice begin at home – Managing Ashram - community living, service and financial ethics – Managing Social movements- Transvaal March and Salt Satyagraha and nonattachment to position (Nishkama Seva).
- Unit.III. **Conflict Reduction:** Pursuance of truth and nonviolence ends and means, openness, transparency, love and kindness in handling relationship, nonviolent communication, practicing nonviolence in social and political issues (Satyagraha), conflict resolution practices, art of forgiveness and reconciliation and Shanti sena.
- Unit.IV. **Humanism:** Trust in goodness of human nature, respect for individual and pluralistic nature of society, dignity of differences, equal regard for all religions (Sarvadharm Samabhava), castes, races, colours, languages etc., simple and ethical life, swadeshi and unity of humankind.
- Unit.V. **Constructive programmes** and contemporary issues: Concept of Sarvodaya, poverty, terrorism, environmental degradation, problems in sharing common resources, health systems and education, science and technology and centralization of power and governance.
- Films. Richard Attenborough, **Gandhi**-Syam Benegal, **the Making of Mahatma**. Anupam P. Kher, **Mine Gandhi Ko Nahin Mara**.-Peter Ackerman and Jack Duvall, **A Force More Powerful**

References:

- M.K. Gandhi, (2012) An Autobiography or The Story of My Experiments with Truth, Navajivan Publishing House, Ahmedabad.
- . (2003) Satyagraha in South Africa, Navajivan Publishing House, Ahmedabad.
- . (1945) Constructive Programme: Its Meaning and Place, Navajivan Publishing House, Ahmedabad.
- . (2003) Key to Health, Navajivan Publishing House, Ahmedabad
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- . (2004) Trusteeship, Navajivan Publishing House, Ahmedabad.
- . (2001) *India of my Dreams*, Navajivan Publishing House, Ahmedabad.

- K.S.Bharathi (1995) *Thought of Gandhi and Vinoba*, Shanti Sena, Sarva Seva Sangh Prakashan, Varanasi.
- V.P.Varma, (1999) *Political Philosophy of Mahatma Gandhi and Sarvodaya*, Lakshmi Narain Agarwal, Agra.
- Louis Fisher (2010) *Gandhi: His Life and Message*.
- B.R. Nanda. (2011) *Mahatma Gandhi: A Biography*, Allied Publishers Private Ltd., New Delhi.
- N.K. Bose. (2008) *Studies in Gandhism*, Navajivan Publishing House, Ahmedabad.
- Gopinath Dhawan, (2006) *The Political Philosophy of Mahatma Gandhi*, Navajivan Publishing House, Ahmedabad.
- N. Radhakrishnan, (2006) *Gandhi's Constructive Programmes: An Antidote to Globalized Economic Planning*, Gandhigram Rural Institute, 2006.
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Lecture Schedule

Unit	Content
1	<p>Child hood days, Student days, influence of Books and Individuals. Religion, Family, and Social factors.</p> <p>Gandhi as rebel, acquaintance with vegetarianism, As lawyer. Encountering and transforming humiliation: in India in south Africa- Train incident, Coach incident, on path way, at court, attack by protesters- Gandhi as political leader and reformer.</p>
2	<p>Gandhi's experiments in managing family</p> <p>Eleven vows, non-possession and sacrifice begin at home.</p> <p>Managing Ashram - community living, service and financial ethics.</p> <p>Managing Social movements: Transvaal March and Salt Satyagraha</p> <p>Nonattachment to position (Nishkama Seva).</p>
3	<p>Pursuance of truth and nonviolence, ends and means,</p> <p>Openness, transparency, love and kindness in handling relationship.</p> <p>Nonviolent communication, practising nonviolence in social and political issues (Satyagraha).</p> <p>Conflict resolution practices, art of forgiveness and reconciliation and Shanti sena.</p>
4	<p>Trust in goodness of human nature,</p> <p>Respect for individual and pluralistic nature of society, dignity of differences.</p> <p>Equal regard for all religions (Sarvadharm Samabhava), castes, races colours, languages etc.</p> <p>Simple and ethical life, swadeshi and unity of humankind.</p>
5	<p>Concept of Sarvodaya,</p> <p>Poverty, Terrorism, Environmental degradation, problems in sharing common resources. Health systems and education.</p> <p>Science and technology and centralization of power and governance</p> <p>Group Discussion - Quiz -Screening film on Gandhi</p>

SECOND SEMESTER

Course Code	Course Title	Credit
18PSIP0209	Special Sanitation Problems	4
18PSIP0210	Public Health Administration	4
18PSIP0211	Food & Nutrition & MCH	4
18PSIP0212	Environmental Sciences	3
18PSIP0213	Environmental Sanitation - Practical	2
18PSIP02E1	Solid Waste Management	4
18PSIP02E2	Emergency Care in Disasters and First Aid theory	4
18PSIP02E3	Emergency Care in Disasters and First Aid Practical	1
18PSIP0214	Concurrent Field Training (CFT)	2
18PSIP0215	Supervised Field Training (SFT)	2

Second Semester

Paper I - SPECIAL SANITATION PROBLEMS

Credit: Theory 4

Objectives: At the end of the course the students will be able

- To describe the Standards of Housing, Lodging House, lighting, and ventilation
- To explain the importance of city ,town planning and master plan
- To discuss the importance of food sanitation, inspection of food establishment and market
- To explain characteristics of a slaughter house
- To explain characteristics of food establishment sanitation
- To identify the man's physical environmental factors in relation to health and sanitation
- To explain the importance of school sanitation
- To discuss the importance of occupational health and safety measures of workers
- To recognize the sanitary importance of places of public resorts

Unit - I

Housing- Village and Town planning

Housing: Characteristics of house - Relationship of Housing and Health-and its Problems Housing Requirement for Healthful Housing - Types of Houses - Basic Principles of Healthful Housing- Rural housing - Smokeless Chula –Indoor House Pollution- housing standard -Survey of Houses - Importance of Planning for Villages and Towns - Existing and New - Master Plan- Lodging House- Ventilation- Lighting –Detail House Survey

Unit - II

Food Establishment and Milk Hygiene

Diseases Transmitted Through Food - Essentials of Food Establishments sanitation - Utensils Used Washing and Sanitizing Vessels - Food Handlers training-Sample Collection - Slaughter House- Markets (Vegetable, Mutton, Fish) - Bakery, Aerated Water factory - Milk Born Diseases- Dairy Inspection -Pasteurization

Unit - III

Occupational Health

Introduction to Occupational Health and Diseases-Occupational Hazards-Physical, chemical, Biological, Mechanical and psychosocial hazards - Occupational Diseases- due to physical, chemical, biological agents - Health problems due to industrialization – Diseases – Accidents - Confined Space Hazards - Risk of Oxygen Deficiency - Risk of Hydrogen Sulphide Poisoning in Confined Space - Risk of Combustible Gas in Confined Space - Risk of Chlorine – Fall – Slip - Electrical Shock – Fire - Risks in a Sewage Testing Laboratory - Toxic Substances - Alkali / Acid - Glass Appliances – Preventive measures of Occupational Diseases.

Unit - IV

School Sanitation

Introduction to school sanitation – Objectives – need and importance of school sanitation – role of HI/SI in school sanitation - Essentials components of sanitation in schools-class room structure- physical facilities in a class room –furniture- lighting- ventilation- flooring- roofing -water supply-toilet facilities- Safe Disposal of waste water and solid waste in school premises - Camps-Fairs and Festivals - Classification of fairs and festivals - objectives of public health arrangements - preventive measure to be made, in relation to lay out of accommodation, lighting, water supply, conservancy-food control, medical relief and isolation, Immunization, staff finance, reporting of

festivals, enroute arrangements, Refugees, evacuee camps-provision of food investigation of outbreaks – Hospital Sanitation.

Unit - V

I) Importance of Sanitary arrangements of Cinema house, Barber shops/ Beauty parlour - dhobi-khana, - Laundry, - Swimming pool, - Community hall - marriage/Meeting hall

II) National Urban Sanitation Policy – Key Sanitation policy issues – Components of national Urban Sanitation policy - Steps for Achieving 100% Sanitation – Awareness generation and Launch of 100% Sanitation – Technical Options – Reaching the unserved population and the urban poor – Evaluation 100% sanitation Status – Monitoring of 100% sanitation Status – city reward scheme – Concept of total Sanitized Cities – Rating and Categorization of cities.

Field visits

To Lodging House to observe sanitation facilities - Ventilation- Lighting –
To conduct Detail House Survey
To Food Establishments to observe sanitation facilities
To Slaughter House to observe sanitation facilities -Markets (Vegetable, Mutton, Fish) -
Bakery, Aerated Water factory
To Dairy plants to observe Pasteurization
To Cattle Shed
To industrial establishments to observe sanitation facilities and control and prevention of occupational hazards
To schools and Noon meal centres to observe sanitation facilities
To observe sanitation facilities and arrangements made during fairs and festivals
To Cinema house, Barber shops/ Beauty parlour ,dhobi-khana, Laundry, Swimming pool, Community hall, Marriage/Meeting hall and shopping complex to observe sanitation facilities

Reference Books:

1. Preventive and Social Medicine by Park and Park.
2. Municipal and Rural Sanitation by Ehlers and Steel.
3. Public Health Engineering by GS Bajwa.

Learning outcomes

At the end of unit I the students will be able

- To define Housing
- To list characteristics of good housing
- To discuss healthful housing
- To identify different types of housing
- To explain the relationship between housing and health
- To explain sanitation facilities to be made in housing and lodging
- To discuss the importance of village and town planning

At the end of unit II the students will be able

- To classify food and food borne diseases
- To explain essentials of food establishments
- To discuss dangerous chemicals involved- utensils used washing and sanitizing vessels
- To discuss sanitation facilities to be made available in food establishing-slaughter house-markets (vegetable, meat/mutton, fish) - bakery, aerated water - dairy inspection pasteurization plant and cattle shed

At the end of unit III the students will be able

- To discuss the importance of occupational health
- To explain the industrial hygiene in relation to health-engineering safety measures
- To list occupational hazards
- To explain sanitation-building toilet facilities to be made available in industrial establishment
- To describe control and preventive measures of occupational hazards
- To explain PH Act related to industrial establishment

At the end of unit IV the students will be able

- To explain the objectives of school sanitation
- To classify the fairs and festivals
- To discuss the sanitation facilities to be made available during fairs and festivals
- To explain Institutional sanitation arrangements to be made

At the end of unit V the students will be able

- To explain importance of the maintenance of sanitation in places of public resorts
- To discuss the sanitation facilities in Cinema house,
Barber shops/ Beauty parlour
dhobi-khana,
Laundry,
Swimming pool,
Community hall
Marriage/Meeting hall and shopping complex
- To discuss the role of HI/SI in maintenance of sanitation in places of public resorts

LECTURE SCHEDULE

UNIT	Content
I	Housing- village and Town planning
	Housing: Characteristics of a house Relationship of Housing to Health-Problems Housing Requirement for Healthful Housing Types of Houses- Basic Principles of Healthful Housing- Survey of Houses-Smokeless Chula –Indoor House Pollution
	Importance of Planning for Villages and Towns- Existing and New Master Plan- Lodging House- Ventilation- Lighting –Detail House Survey
	The Tamil Nadu Public Building (licensing) Act 1965 [Tamilnadu Act 13 of 1965]
	The Tamil Nadu Public Building Rules 1966
	Respective Corporation Acts (Chennai and other 11 Corporations) i.e., CCM Act, 1919
II	Food and Milk Hygiene
	Diseases Transmitted Through Food - Classification of Food Borne Diseases
	Infections and food poisonings
	Essentials of Food Establishments-Protection of Food from Insects, Rodents- Dangerous Chemicals Involved- Utensils Used Washing and Sanitizing Vessels
	Food Handlers training-Sample Collection-
	Slaughter House-Markets (Vegetable, Mutton, Fish) - Bakery, Aerated Water
	Milk Borne Diseases-Pasteurization, Daily Inspection of Cattle Shed
	Prevention of Food Adulteration Act 1954 & Food Safety and Standard Act 2006
III	Occupational Health
	Introduction to Occupational Health and Diseases-Occupational Hazards-Physical, chemical, Biological, Mechanical and psychosocial hazards
	Occupational Diseases- due to physical, chemical, biological agents
	Health problems due to industrialization
	Measures of health protection of workers
	Preventive measures of Occupational Diseases -Medical Measures-Engineering Measures
	Legislation –The Factories Act,1948, The Employees’ State Insurance Act, 1948 ,The Factories Act 1948 (Central Act 63 of 1948)
III	School Sanitation
	Introduction to school sanitation – Objectives – need and importance of school sanitation
	Rashtriya Bal Swasthya Karyakram (RBSK) comprehensive school health programme –role of HI/SDI in school sanitation
	Essentials components of sanitation in schools-class room structure- physical facilities in a class room –furniture- lighting- ventilation- flooring- roofing -water supply- toilet facilities- Noon meal centres
	Safe Disposal of waste water and solid waste in school premises
	The Tamil Nadu Factories Rules 1950
	Camps-Fairs and Festivals
	Classification of fairs and festivals-

	objectives of public health arrangements preventive measure to be made, in relation to lay out of accommodation, lighting, water supply, conservancy-food control, medical relief and isolation, Immunization, staff finance, reporting of festivals, enroute arrangements, Refugees, evacuee camps- provision of food investigation of out breaks
	Institutional sanitation: Sanitation of a training centre-evaluation-hospital sanitation
V	Places of Public resorts
	Importance of Sanitary arrangements of Places of Public resorts – Cinema house, Barber shops/ Beauty parlour dhobi-khana, Laundry, Swimming pool, Community hall Marriage/Meeting hall and shopping complex
	The T.N. Places of Public Resorts Act, 1888 [Tamilnadu Act II of 1888]
	The Tamil Nadu Place of Public Resorts Rules
	The Tamil Nadu Cinema x (Regulations) Rules, 1957.

Public Health Administration

Credit: 4 Objective: At the end of the course the students will be able

- To explain Public Health administrative set up in Centre- State-District-Block- PHC-village levels
- To discuss the importance of management at different levels
- To play a role of supervisor and birth & death registrar
- To discuss the role and responsibilities of HI/SI working at different levels
- To describe Public Health Laws to be executed at various levels
- To maintain records and reports related to their job function

UNIT I Introduction to Public Health Administration

- 1 Historical development of public health-Modern medicine in India- Changing concepts of public health
- 2 Various committees on health development in India
- 3 Health care delivery system- Public-private-voluntary-indigenous
- 4 Levels of Health care –primary-secondary-tertiary levels-PRI amendments
- 5 Five year Plans –related to Health –Family welfare-and water and sanitation programmes- Planning Commission-NITI Aayog- National Health Policy
- 6 Millennium Development of Goals (MDG) related to health and sanitation

UNIT II Public health organization

- 1 Public Health set up at National -State level-organization-functions
- 2 Public Health set up at District-Block-Sector -Village level-organization-function- Job responsibilities of HI/SI in ULBs and PHCs
- 3 Primary Health Care-Definition-components-principles
- 4 Recent trends in Health care delivery systems - National Health Mission -National Rural Health –Urban Health Mission- ASHA and USHA
- 5 Urban health system -Urban health facilities-organization set up- functions
- 6 Health insurance schemes

UNIT III Introduction to Management

- 1 Introduction to Management-POSDCORB-Administration
- 2 Programme planning- steps- evaluation of health programmes
- 3 Supervision-qualities of a supervisor
- 4 Team work- importance
- 5 Records – reports- Need and importance-report submission
- 6 PPP-Public Private Partnership in Health care--importance

UNIT IV Public Health Laws

- 1 Waste Management Rules - Plastic Waste Management Rules 2016
e-waste (Management) Rules, 2016 - Bio-Medical Waste Management Rules,2016 -
Construction and Demolition Waste Management Rules, 2016
Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 -
Solid Waste Management Rules, 2016
- 2 Public Health Laws -Definition – importance – Statutory laws (Epidemics & PH practices-
by law)- various PH Acts
- 3 The Tamil Nadu Public Health Act, 1939- The TN District Municipalities (MDM) Act
1920- The Tamil Nadu Panchayat Act 1994-
- 4 The Tamil Nadu Births and Deaths Rules 2000- The Registration of Birth and Death

- registration Act, 1969 [Central Act 18 of 1969]
- 5 The Tamil Nadu Educational Rules
- 6 The Tamil Nadu Town Nuisance Act 1889
- 7 COTPOA Act,2003
- 8 International Health Regulations, 2005
- 9 Port Health Regulations, 1955
- 10 **Legal Procedures:**
Power of Entry / Inspection / Investigation [examination] Procedures.
- 11 Nature of Inspection and frequency of Inspection
- 12 Preparation of notices / service of notices- Power of arrest- Compounding of offences- Appeal Procedures- Cognizance of offence – Criminal Proceeding procedures
Filing of Charge Sheets in the court and attending Proceedings- Waste water disposal.

UNIT V Health Management Information System (HMIS) - Voluntary Agencies related to Health Care Delivery Systems.

- 1 HMIS- Components-Uses- Importance – Application of computer programmes
- 2 Sources of health information -Census-Registration of Vital events- SRS-MRS- Health surveys-
- 3 National Family Health Survey (NFHS) - District Level Health Survey (DLHS)
- 4 Health Statistics – Rates, Ratio and Proportion- statistics Mean, Median, Mode
- 5 Presentation of data – diagrammatic- graphic
- 6 Voluntary Agencies- International- Ford Foundation-The Rockefeller Foundation-Red Cross Society
- 7 National – Indian Red Cross Society- Family Planning Association of India- Bharat Sevak Samaj-Tuberculosis Association of India
- 8 International Organizations-related to Health- WHO- UNICEF- FAO- USAID- UNFPA-World Bank- Colombo Plan

Field visits

- 1. Visit to CHC, PHC, HSC to identify the organization structure and functions
- 2. Visit to Urban Health facilities to identify the organization structure and functions
- 3. Visit to CHC/PHC/HSC to discuss the Job responsibilities of HI/SI in a public health set up in PHC/ Municipalities/ Town Panchayats and records to be maintained by HI/SI

References:

- | | | |
|---|---|---|
| 1 | An Introduction to Public Health | Harry S. Mustard, The Macmillan Co., New York, 1960 |
| 2 | Preventive & Social Medicine | Park & Park, Bhanarsidas Bharot Publish, Jabalpur 21 Edn |
| 3 | Teaching Health Statistics | S.K.Lwanga & CHO Yook tye, WHO, Geneva, 1986 |
| 4 | Organizational Behavior (9th edition), | Hellnegel, Slocum & Woodman, South Western College Publications, US |
| 5 | Health System Support for Primary Health Care | Bogdon M.Kleczkow Ski et al, WHO, Geneva, 1984 |
| 6 | A Short Book of Public Health, | V.K.Muthu, JAPEE Brother Medical Pub.(P)Ltd New Delhi,2005 |

Learning Outcomes:

At the end of the UNIT I the students will be able

- To discuss Historical development of public health and modern medicine in India
- To discuss the changing concepts of health
- To explain various committees on health development in India
- To recognize the importance of Five year Plans –related to Health –Family welfare-and water and sanitation programmes
- To compare Planning commission and NITI Aayog
- To discuss National Health Policy of India

At the end of the UNIT II the students will be able

- To explain Public Health set up at National -State level-organization-functioning
- To discuss Public Health set up at District-Block-village level-organization-function
- To list Job responsibilities of HI/SI working in Corporation/Municipalities/Town Panchayat/PHC
- To recognize the importance of Primary Health Care principles
- To enumerate recent trends in Health care delivery systems in India
- To describe NRHM/UNHM/NHM
- To list role of a ASHA in health care delivery
- To explain the importance various Health Insurance Schemes in India
- To familiarize with Millennium Development of Goals (MDG) related to health and sanitation

At the end of th UNIT III the students will be able

- To differentiate management from Administration
- To list various steps in Programme planning
- To list qualities of supervisor
- To recognize the importance Team work in health care delivery
- To identify various sectors for Inter sectoral co ordination
- To list various Records to be maintained by a Health/ Sanitary inspector
- To enumerate the importance of record keeping and submission
- To understand the importance of Public Private Partnership in Health care

At the end of the UNIT IV the students will be able

- To discuss various PH Acts and Laws executed at various levels
- To identify various statutory bodies for implementing PH ACT
- To explain Tamil Nadu Public Health Act, 1939 -The TN District Municipalities (MDM) Act 1920- The Tamil Nadu Panchayat Act 1994
- To describe The Tamil Nadu Births and Deaths Rules 2000- The Registration of Birth and Death registration Act, 1969 [Central Act 18 of 1969]
- To discuss the Tamil Nadu Educational Rules
- To explain the Tamil Nadu Town Nuisance Act 1889
- To discuss COTPOA Act,2003
- To describe International Health Regulations, 2005 and Port Health Regulations, 1955

Legal Procedures:

To describe the steps in legal procedures for implementation of PH Acts

At the end of the UNIT V the students will be able

To discuss the importance Health Management Information System

To explain various sources of data collection

To explain various rates and ratios related to health

To define Mean, Median and Mode

To prepare various diagrammatic presentations of reports related to health

To identify various National and International voluntary organization related to health

LECTURE SCHEDULE

UNIT	Content
I	Introduction to Public Health
1	Introduction to Public Health -Historical development of Modern Medicine-Germ theory-Public Health -Definition- Changing concepts of health
2	Reports of various health committees constituted in India over the years-its recommendations
3	Five year Plans –related to Health –Family welfare-and water and sanitation programmes
4	Planning Commission and NITI Aayog
5	National Health Policy
6	Millennium Development of Goals (MDG) related to health and sanitation
II	Public health organization
1	Public Health set up National –State levels-organization-functions
2	Public Health at District-Block-Sector-Village level-organization-function- Job responsibilities of HI/SI
3	Primary Health Care-Definition-components-principles
4	Recent trends in Health care delivery systems –rural--public-private -National Rural Health Mission/Urban Health Mission- National Health Mission -Accredited Social Health Activist ASHA - Village Health volunteer Scheme- Health Insurance Schemes
5	Urban health system -Urban health facilities- Corporation-Municipalities- Town Panchayat- organization set up- functions- Duties of Health personnel-USHA
III	Introduction to Management
1	Management-Introduction- concept –POSDCORB-planning-organizing-directing-co ordination –reporting-budgeting-Administration
2	Programme planning- steps- evaluation of health programmes
3	Supervision- -old and new concept- qualities of a supervisor
4	Team work- importance –Inter sectoral co ordination
5	Records – reports- Need and importance- types-report submission
6	PPP-Public Private Partnership in Health care- in different health set up – importance-
IV	Public Health Laws
1	Public Health Laws -Definition – importance – Statutory laws (Epidemics & PH practices- by law)- various PH Acts
2	The Tamil Nadu Public Health Act, 1939- The TN District Municipalities (MDM) Act 1920- The Tamil Nadu Panchayat Act 1994-
3	The Tamil Nadu Births and Deaths Rules 2000- The Registration of Birth and Death registration Act, 1969 [Central Act 18 of 1969]
4	The Tamil Nadu Educational Rules
5	The Tamil Nadu Town Nuisance Act 1889
6	COTPOA Act,2003
7	International Health Regulations, 2005
8	Port Health Regulations, 1955
9	Legal Procedures: Power of Entry / Inspection / Investigation [examination] Procedures.
10	Nature of Inspection and frequency of Inspection
11	Preparation of notices / service of notices- Power of arrest- Compounding of

	offences- Appeal Procedures- Cognizance of offence – Criminal Proceeding procedures
12	Filing of Charge Sheets in the court and attending Proceedings- Waste water disposal.
V	Health Management Information System(HMIS) -Voluntary Agencies
1	HMIS-Definition-Components-Uses- Importance
2	Sources-Census-Registration Vital events- SRS-MRS- Health surveys- National Family Health Survey (NFHS)- District Level Health Survey (DLHS)
3	Health Statistics – Rates, Ratio and Proportion-Simple statistics Mean, Median, Mode-
4	Presentation of Reports - Bar, Pie diagram, graphs ,charts ,etc
5	Voluntary Agencies,-International- Organizations-related to Health- WHO- UNICEF- FAO- USAID- UNFPA-World Bank Colombo Plan-Ford Foundation-The Rockefeller Foundation-Red Cross Society-FPAI, BSS

FOOD & NUTRITION, MATERNAL & CHILD HEALTH

Credit: 4

Objectives: At the end of the course the students will be able

- To define proximate principles of food
- To explain the importance of nutritional assessment survey in a community and identify the nutritional status of the community
- To discuss methods of Prevention of Food Adulterations
- To explain components of MCH care
- To explain importance of school health programme in India
- To describe contraceptive methods
- To explain the contra indications and limitation of various contraceptive methods
- To explain MTP Act and PCPNDT Act

Unit I – Introduction to Nutrition

- 1 Definitions of common terms in Nutrition, Changing concepts, Relation of Nutrition to Health, Functions of food, Constituents of Food, Classification of foods, Nutrients. Proximate principles
- 2 Proteins - Functions, Sources, Requirements, Effects of deficiency
- 3 Fats - Sources, Vanaspathi, visible and invisible fats, refined oils, requirements, Fats and disease, Carbohydrates - Sources and Functions
- 4 Vitamins, Classification, Functions, Sources Daily Requirements Recommended allowances, Effects of Deficiency and Storage of vitamin. Fat soluble vitamins, vitamin A, D, E, K. Water soluble vitamins Vitamin B1, B2, B3, B5, B6, B12, Folic acid, Ascarbic acid
- 5 Minerals – Major minerals Calcium, Phosphorus, Sodium, Potassium, Iron, Magnesium etc. Trace-elements Iodine, Fluorine, Zinc, Cobalt. Functions, Sources, Deficiency, Requirements of Minerals and Trace elements and fiber content foods. Testing of iodine in salt
- 6 Water – Requirement, Functions, Sources and distributions. Nutritive value of Foodstuffs: Cereals and millets, Pulses and nuts, Vegetables, Fruits, Milk and milk products, Meat, fish and eggs, Fats and oils, Sugar and jiggery, condiments and spices, Beverages
- 7 Nutritional Requirements – Recommended daily allowance (RDA), Energy measurement, Reference man and woman, Energy requirements, Vulnerable groups, Nutritional individuality, Protein, Amino acid score, Net protein utilization (NPU), Protein Energy ratio, Dietary intakes, Amino acid requirements

Unit II

- 1 Balanced Diet. Food Guide Pyramid. Dietary Goals, Nutritional Requirements of special groups, infants/ Pre-school children [Survey of 0 – 5 Years Children with Growth monitoring Chart], School children, Pregnancy and Lactation, Food Hygiene.
- 2 Milk Hygiene – Sources of infection, milk borne diseases, Clean and safe milk, Boiling of milk, Pasteurization and its methods. Tests of pasteurized milk.
- 3 Meat Hygiene – Meat-borne diseases, Meat inspection, Signs of good meat.
- 4 Fish Hygiene – Fish borne diseases, Signs of fresh fish and Tinned fish
- 5 Eggs – Testing its freshness
- 6 Fruits and vegetables, vegetable-borne diseases
- 7 Sanitation of eating places – food handlers, Food-borne diseases, intoxication and infections, Malnutrition, Definition classification, Preventive and Social measures, Nutrition problems in public health, Preventive measures
- 8 Cooking – methods, effects, effects on different type of foods, Preservation and

storage of food – House hold method, commercial method.

- 9 Assessment of the nutritional status – Anthropometric measurements - Nutritional Assessment survey. National Nutrition Policy

Unit III Food Safety & Food Chemistry and School Health Programme

- 1 Introduction to Food Safety & Food Chemistry, Food standard, FSSAI, Act, AGMARK - ISI.-Consumer Protection ACT 1986
- 2 Adulteration of Food – Prevention of Food Adulteration Act, Food additives, Pigments, Aerated waters, Food quality, Fortification of foods
- 3 Planning the meals, Community Nutrition Programmes, Kitchen gardens, Role of HI/SI in educating about good nutrition and Balanced Diet.
- 4 Historical development School Health services in India- Importance - Functions of School Health Services - objectives-components- Elements -- -School health Team- Organizing school health Programmes- Modified School Health programme- Recent School Health Schemes - Role of HI/SI in School Health programme
- 5 Personal Hygiene – Maintenance and Promotion of Health. Physical Health – care of skin, hair, teeth, eyes, ears, hands, feet.
- 6 Menstrual hygiene, Rest and sleep, exercise, Recreation, Posture, Nutrition, Elimination, Mental Health and Personality development

Unit IV: Mother & Child Health, Reproductive & Child Health

- 1 MCH : Definition – Historical Review, Maternity cycle, Signs and symptoms of Pregnancy, Maternal Health services, Antenatal Care, Antenatal Clinic, High risk Pregnancy, Antenatal visits, Prenatal advice, Mother craft, Home visits, Maintenance of records
- 2 Intra-natal Care. Normal labour, Domiciliary midwifery, Postnatal care, Postnatal visits, Care of the children, Neonatal Examinations, Measuring the baby, Breast feeding, Artificial Feeding, Supplementary feeding, Immunization, Causes of IMR , MMR
- 3 CSSM Programme, Essential obstetric care, Empowered Action Group,
- 4 RCH Phase I & II. Emergency obstetric care, New Initiatives, ASHA package, Safe abortion service, Village Health and Nutrition day, Pregnancy tracking. Child health components
- 5 Nutrition Rehabilitation Centre. Integrated management of neonatal and childhood illness (IMNCI), Facility based IMNCI (F-IMNCI), Sick new born care units (SNCU), quality indicators of RCH programme. BMONC, CMONC.

Unit V: Demography & Family Welfare:

- 1 Demography cycle, population trends in India, Age composition, Sex ratio, Dependency ratio, Density of population, Family size, Literacy and Education, Life Expectancy
- 2 National Population policy
- 3 Contraceptive methods-Fertility, Birth control, Family planning, Family welfare, Operational goals of the Family planning programme, Small Family size, Spacing of children, Eligible couples. Unmet needs of Family Planning, Birth Control Vaccine and Sociology of Family Planning
- 4 Abortion Services -MTP Act 1972 , PCPNDT Act 1994
- 5 Family planning services. Community needs assessment approach. National Family Welfare Programme (NFWP), All India Post Partum Programme (AIPPP), and Evaluation of Family Planning Programme.

Field Visit

1. To CHC.PHC.HSC to observe various programmes related to RCH and FWP
2. Visit to PPC
3. To Anganwadi centre to observe the growth monitoring charts
4. To Noon meal centres to observe nutritional status and feeding of children

References:

1. Essentials of Community Health Nursing, K.Park, 6th Edition, M.s Banarsidas Bhanot Publications.
 2. Preventive & Social Medicine, Park & Park, Bhanarsidas Bharot Publish, Jabalpur.
 3. Food & Nutrition Vol.1, M.Swaminathan,1984.
 4. Principles of Nutrition & Diets, M.Swaminathan, BAPPCO, Bangalore, 1995
 5. Health & Nutritional Status in India,G.Kamamma, APH Publishing Corporation, Delhi,1996.
-

Learning Outcomes

At the end of the unit I Introduction to Nutrition the students will be able

- To define common terms in Nutrition, Changing concepts, Relation of Nutrition to Health, Functions of food, Constituents of Food, Classification of foods, Nutrients. Proximate principles
- To list Functions, Sources, Requirements of Proteins and its effects of deficiency
- To identify sources and functions of fats and carbohydrates
- To recognize the role of fats in disease
- To classify Vitamins
- To discuss Daily Requirements Recommended allowances
- To differentiate Fat soluble vitamins
- To explain the importance of major minerals, Folic acid and Ascorbic acid
- To identify the daily requirement of Minerals and Trace elements and fiber content foods

- To explain the importance and requirement of water for an individual
- To list nutritive value of Foodstuffs: Cereals and millets, Pulses and nuts, Vegetables, Fruits, Milk and milk products, Meat, fish and eggs, Fats and oils, Sugar and jiggery, condiments and spices, Beverages
- To explain Nutritional Requirements – Recommended daily allowance (RDA), Energy measurement, Energy requirements of reference man and woman
- To recognize Nutritional Requirements for Vulnerable groups

At the end of the unit II the students will be able

- To define balanced diet
- To explain Food Guide Pyramid. Dietary Goals, Nutritional Requirements of special groups, infants/ Pre-school children [Survey of 0 – 5 Years Children with Growth monitoring Chart], School children, Pregnancy and Lactation
- To recognize the importance of Food Hygiene
- To explain the need and importance of Sanitation of eating places and food handlers,
- To describe the Food-borne diseases
- To define intoxication ,infections and Malnutrition
- To recognize common Nutrition problems in India
- To explain Preventive measures of food borne disease
- To list methods of preservation and storage of food at House hold and commercial levels
- To explain the nutritional Assessment survey methods
- To describe National Nutrition Policy

At the end of the unit III the students will be able

- To describe Food Safety ,Food Chemistry, Food standard, FSSAI Act, AGMARK - ISI
- To explain the importance of prevention of food Adulteration
- To identify Food additives, Pigments, Aerated waters, Food quality, Fortification of foods
- To explain Community Nutrition Programmes
- To explain Importance , Functions , objectives, components and Elements of School Health Services
- To identify the Role of HI/SI in School Health programme

At the end of the unit IV the students will be able

- To list the components of MCH care and services
- To explain the importance of exclusive breast feeding
- To recognize the importance of Artificial Feeding, Supplementary feeding ,weaning and Immunization
- To list the causes of IMR and MMR
- To identify the paradigm shift of MCH to RCH
- To explain the objectives of different phases of RCH
- To explain the role of ASHA in MCH and FW services under NRHM
- To identify the role of Nutrition Rehabilitation Centre
- To explain Integrated management of neonatal and childhood illness (IMNCI), Facility based IMNCI (F-IMNCI), Sick new born care units (SNCU), quality indicators of RCH programme, BMONC and CMONC

At the end of the unit V the students will be able

- To explain Demography cycle, population trends in India
 - To explain National Population policy
 - To explain Contraceptive methods
 - To explain Eligible couples, Unmet needs of Family Planning, and Sociology of Family Planning
 - To explain MTP Act 1972 , PCPNDT Act 1994
 - To explain Community needs assessment approach
 - To explain the objectives of National Family Welfare Programme (NFWP)
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LECTURE SCHEDULE

UNIT	Content
I	Definitions of common terms in Nutrition, Changing concepts, Relation of Nutrition to Health.
	Functions of food, Constituents of Food, Classification of foods, Nutrients. Proximate principles.
	Proteins – Functions, Sources, Requirements, Effects of deficiency.
	Fats – Sources, vanaspathi visible and invisible fats, refined oils, requirements, Fats and disease, Carbohydrates – Sources and Functions,
	Vitamins, Classification, Functions, Sources Daily Requirements Recommended allowances, Effects of Deficiency and Storage of vitamin.
	Fat soluble vitamins, vitamin A,D,E,K. Water soluble vitamins Vitamin B1, B2, B3, B5, B6, B12, Folic acid, Ascarbic acid
	Minerals – Major minerals Calcium, Phosphorus, Sodium, Potassium, Iron, Magnesium etc.
	Trace-elements Iodine, Fluorine, Zinc, Cobalt. Functions, Sources, Deficiency, Requirements of Minerals and Trace elements.
	Water – Requirement, Functions, Sources and distributions. Nutritive value of Foodstuffs: Cereals and millets, Pulses and nuts, Vegetables, Fruits,
	Milk and milk products, Meat, fish and eggs, Fats and oils, Sugar and jiggery, condiments and spices, Beverages
	Nutritional Requirements – Recommended daily allowance (RDA), Energy measurement, Reference man and woman, Energy requirements
	Vulnerable groups, Nutritional individuality, Protein, Amino acid score, Net protein utilization (NPU), Protein Energy ratio, Dietary intakes, Amino acid requirements.
II	Balanced Diet. Food Guide Pyramid. Dietary Goals, Nutritional Requirements of special groups, infants, Pre-school children, School children, Pregnancy and Lactation, Food Hygiene.
	Milk Hygiene – Sources of infection, milk borne diseases, Clean and safe milk, Boiling of milk, Pasteurization and its methods. Tests of pasteurized milk.
	Meat Hygiene – Meat-borne diseases, Meat inspection, Signs of good meat.
	Fish Hygiene – Fish borne diseases, Signs of fresh fish and Tinned fish.
	Eggs – Testing its freshness. Fruits and vegetables, vegetable-borne diseases.
	Sanitation of eating places – food handlers, Food-borne diseases, intoxication and infections, Malnutrition, Definition classification, Preventive and Social measures, Nutrition problems in public health, Preventive measures,
	Cooking – methods, effects, effects on different type of foods, Preservation and storage of food – House hold method, commercial method.
	Adulteration of Food – Prevention of Food Adulteration Act, Food additives, Fortification of foods, planning meals. Community Nutrition Programmes, Kitchen gardens, Role of HI/SI in Teaching good nutrition.
	Assessment of the nutritional status – Anthropometric measurements – Nutritional Assessment survey-
III	Introduction to Food Safety & Food Chemistry, Food standard, FSSAI, Act, AGMARK - ISI
	Adulteration of Food – Prevention of Food Adulteration Act, Food additives, Pigments, Aerated waters, Food quality, Fortification of foods
	Planning the meals, Community Nutrition Programmes, Kitchen gardens, Role of

	HI/SI in educating on the good nutrition and Balanced Diet.
	Historical development School Health services in India- Importance - Functions of School Health Services - objectives-components- Elements -- -School health Team- Organizing school health Programmes- Modified School Health programme- Recent School Health Schemes - Role of HI/SI in School Health programme
	Personal Hygiene – Maintenance and Promotion of Health. Physical Health – care of skin, hair, teeth, eyes, ears, hands, feet
	Menstrual hygiene, Rest and sleep, exercise, Recreation, Posture, Nutrition, Elimination, Mental Health and Personality development
IV	MCH : Definition – Historical Review, Maternity cycle, Signs and symptoms of Pregnancy,
	Maternal Health services, Antenatal Care, Antenatal Clinic, High risk Pregnancy, Antenatal visits, Prenatal advice, Mother craft, Home visits
	Intranatal Care , Normal labour, Domiciliary midwifery,
	Postnatal care, Postnatal visits,
	Care of the children, Neonatal Examinations, Measuring the baby,
	Breast feeding, Artificial Feeding, Supplementary feeding, Immunization
	CSSM Programme, Essential obstetric care, Empowered Action Group,
	RCH Phase II. Emergency obstetric care, New Initiatives, ASHA package, Safe abortion service, Village Health and Nutrition day, Pregnancy tracking. Child health components.
	Nutrition Rehabilitation Centre. Integrated management of neonatal and childhood illness (IMNCI), Facility based IMNCI (F-IMNCI), Sick new born care units (SNCU), quality indicators of RCH programme.
V	Historical development School Health services in India- Importance – Functions of School Health Services – objectives-components- Elements
	School health Team- Organizing school health Programmes- Modified School Health programme- Recent School Health Schemes – Role of HI/SI in School Health programme
	Personal Hygiene – Maintenance and Promotion of Health. Physical Health – care of skin, hair, teeth, eyes, ears, hands, feet.
	Menstrual hygiene, Rest and sleep, exercise, Recreation, Posture, Nutrition, Elimination, Mental Health and Personality development
	Demography, Demographic trends in India, Age composition, Sex ratio, Dependency ratio, Density of population, Family size, Urbanization, Literacy and Education, Life Expectancy
	Fertility, Birth control, Family planning, Family welfare
	Operational goals of the Family planning programme, Small Family size, Spacing of children, Eligible couples
	National Population policy. Contraceptive methods. Abortion Services. Family planning services- Community needs assessment approach. Family planning organization. National family welfare programme

PAPER IV - ENVIRONMENTAL SCIENCES

Credit: Theory 3

Objective: At the end of the course the students will be able:

- To explain the importance of environment on health
- To identify the pollutants in air, water, land/soil
- To discuss industrial pollutants
- To explain the current environmental issues
- To discuss Renewable Energies
- To explain environmental issues and relevant Public Health ACT

Unit I: Ecology

- 1 Ecosystem, Structure of Atmosphere, Structure of Ecosystem, A biotic components of Ecosystem, Biotic components of Ecosystem, Energy flow, Dynamics – Functions of Ecosystem, Food Web and Food Chain, Types of Ecosystem.
- 2 Renewable Energies – Solar/ Wind-mill / Bio Gas / Bio – methanization / Hydraulic/ Tidal powers
- 3 Rules under the Environmental (Protection) Act 1986 (Central Act 29 of 1986)
4. Bio geo chemical cycles, C, N₂,o,PO₄,S cycles

Unit II: Introduction to Environmental Microbiology

- 1 Origin – Scope and Importance –diversity of Micro organisms –Three domains of life-prokaryotes vs Eukaryotes- Eukaryotic and prokaryotic cell
- 2 General characters- important uses and harmful effects of -Protozoa, fungi, algae, bacteria and virus
- 3 **Growth of Micro Organisms**
Isolation ., cultivation(aerobic& an aerobic) and preservation of microbes
Nutritional types of Microbes , Nutrient media(selective, differential, enriched and enrichment) and growth conditions, physiology of growth, bacterial growth curve,- (exponential growth and generation)
- 4 methods for determining bacterial numbers , bacterial growth and continuous culture(chemo stat and turbid stat)
- 5 Cell constituent of bacterial cell.

Unit III: Microorganisms and their Environment:

- 1 Effect of environmental conditions on survival and growth of microorganisms factors that influence the growth and adaptations.
Temperature, oxygen, desiccation, extreme cold, ionic effect, osmotic pressures, radiant energy, hydrostatic pressures and surface forces.
- 2 **Control of microorganisms:** sterilization and disinfection, physical (moist and dry heat, radiation and filtration), chemical agents (disinfectants, antiseptics, antibiotics and other chemotherapy agents). Characteristics of an antimicrobial agent; mode of action of antimicrobial agent.

Unit IV - Current Environmental Issues

- 1 Ozone depletion – Green House Effects – Green house gases and Global warming
- 2 Photochemical smog – PAN –Acid Rain
- 3 Noise Pollution- Measurement of noise level – Hazards & Effects on Health and the Control measures

Unit V: Environment Pollution

- 1 Air Pollutants: Organic air pollutants- Persistent Organic Pollutant - Hydrocarbons – tobacco smoke – Methyl Iso Cyanate (Bhopal incident) –Particulates- Effects on health and (Relevant Public Health ACT) control of particulate
- 2 Water pollution- Classification of water pollutants,
- 3 Algal blooms & Eutrophication
- 4 Soaps and detergents – Oil spills
- 5 Agriculture Pollutants: Pesticides and Fertilizers, Relevant Public Health ACT
- 6 Radio activity – Natural sources, manmade sources, Accidents

Field visit

To pollution control board office to observe the rating of emissions

Reference Books:

- | | | |
|----|---|---|
| 1 | Environmental Pollution | Indirajit Sethi |
| 2 | Environmental Chemistry | A.K.De. |
| 3 | Fundamental Concepts of Environmental Chemistry | S.Sodhi. |
| 4 | Text Book of Preventive and Social Medicine | K.Park. |
| 5 | Ecology | Eugene, odum. |
| 6 | Applied Microbiology | Moshroffuddin Ahmed & SK.Basumatory |
| 7 | Environmental Science and Engineering | Dr. A. Kulandaisamy, M.Vigneswari, Dr.S.Anbu sumitha. |
| 8 | The microbial world | Stainer, PR.Ingraham, |
| 9 | Microbiology | Pelzar, Reid and Chan |
| 10 | Microbiology | Lansing M Prescott, John P.Harley and Donald A.Klein |
| 11 | General Microbiology | Schlegel. |

Learning outcomes

At the end of the unit I the students will be able

- To define Ecosystem, Structure of Atmosphere, To identify different ecosystem.
- To differentiate Abiotic and Biotic components of Ecosystem
- To explain Energy flow, Dynamics of Ecosystem
- To discuss Food Web and Food Chain
- To discuss the importance of Renewable Energies, To Know Environment Protection Act
- To Know about Bio geo Chemical cycles

At the end of the Unit II the students will be able

- To discuss the scope and importance of Micro organisms
- To differentiate three domains of life
- To describe the Eukaryotic and prokaryotic cell
- To list important uses and harmful effects of --Protozoa, fungi, algae, bacteria and virus
- To explain Isolation , cultivation(aerobic& an aerobic) and preservation of microbes
- To identify Nutritional types of Microbes , Nutrient media
- To explain exponential growth and generation time, bacterial growth continuous culture(chemo stat and turbid stat)
- To explain cell constituents of Bacterial cell

At the end of the Unit III the students will be able

- To explain Effect of environmental conditions on survival and growth of microorganisms and adaptations
- To discuss Temperature, oxygen, desiccation, extreme cold, ionic effect, osmotic pressures, radiant energy, hydrostatic pressures and surface forces
- To explain Control measures of microorganisms
- To list Characteristics of an antimicrobial agent; mode of action of antimicrobial agent.

At the end of the unit IV the students will be able

- To describe Ozone depletion
- To explain Green House Effects
- To identify the importance of Green house gases
- To explain the preventive measures of Global warming
- To discuss Photochemical smog – PAN –Acid Rain
- To explain Measurement of noise level
- To describe effects of noise pollution on Health
- To describe the control and preventive measures of noise pollution

At the end of the unit V the students will be able

- To identify air pollutants, control of Particulates
- To discuss the importance prevention of water pollution
- To classify water pollutants
- To discuss Algal blooms – Eutrophication
- To list the effects of Soaps and detergents – Oil spills in environment
- To list Radio activity providing sources
- To identify Agriculture Pollutants
- To list the control and preventive measures of Agriculture Pollutants
- To discuss Relevant Public Health ACT – Air ,H₂O

Lecture schedule

UNIT	Content
I	Ecology Introduction to Ecosystem-Structure of Atmosphere- Ecosystem
	Abiotic components of Ecosystem, Biotic components of Ecosystem,
	Energy flow, Dynamics of Ecosystem- Food Web and Food Chain,
	Hydrocarbons – tobacco smoke – Methyl Iso Cyanate (Bhopal incident) Particulates Effects on health
	Relevant Public Health ACT- Renewable Energies – Solar/ Wind-mill / Bio Gas
	Bio – methanization / Rain Water Harvesting/ Hydraulic/ Thermal powers
	Carbon rating / Biological Oxygen Demand [BOD]
	Rules under the Environmental (Protection) Act 1986 (Central Act 29 of 1986) framed rules under sections 3,6 & 25
II	Introduction to Environmental Microbiology
	Origin – Scope and Importance –diversity of Micro organisms –Three domains of life-prokaryotes vs Eukaryotes- Eukaryotic and prokaryotic cell
	General characters- important uses and harmful effects of -Protozoa, fungi, algae, bacteria and virus
	Growth of Micro Organisms
	Isolation ., cultivation(aerobic& an aerobic) and preservation of microbes
	Nutritional types of Microbes , Nutrient media(selective, differential, enriched and enrichment) and growth condition, physiology of growth, bacterial growth curve, methods for determining bacterial numbers
	Mass and cell constituents, exponential growth and generation time, bacterial growth in batch and continuous culture(chemo stat and turbid stat)
III	Microorganisms and their Environment:
	Effect of environmental conditions on survival and growth of microorganisms and adaptations.
	Temperature, oxygen, desiccation, extreme cold, ionic effect, osmotic pressures, radiant energy, hydrostatic pressures and surface forces.
	Control of microorganisms: inhibition of growth and killing, sterilization and disinfection, physical (moist and dry heat, radiation and filtration), chemical agents (disinfectants, antiseptics, antibiotics and other chemotherapy agents). Characteristics of an antimicrobial agent; mode of action of antimicrobial agent.
IV	Current Environmental Issues
	Ozone depletion – Green House Effects – Green house gases and Global warming- Photochemical smog – PAN –Acid Rain
	Noise Pollution- Measurement of noise level – Hazards & Effects on Health - The Control and preventive measures of Noise Pollution
V	Environment Pollution
	Air Pollutants Organic air pollutants- Persistent Organic Pollutant
	Water pollution- Classification of water pollutants
	Algal blooms – Eutrophication- Soaps and detergents Oil spills
	Agriculture Pollutants: Pesticides and Fertilizers,
	The role of HI/SI in control and preventive measures of Water pollution
	Relevant Public Health ACT
	Sources and control of radio activity

Elective Major
Solid Waste Management

Credit Theory - 4

Objectives:

- Safe disposal of solid waste in local bodies, collection methods, Segregation, Process and Technologies, Manure Making Methods and Safe Disposal
- Make cities and town filth and Garbage free and enhance Cleanliness
- To achieve Swachh Bharat Mission

Unit – I

Introduction to Municipal Solid Waste Management – Plan – Policies – Programme & Legal framework – Assessment of current Situation – Stakeholders Consultation for planning - Preparation of Draft – Schedule for implementation – Public Private Partnership – Action Points.

Technical Aspects – Segregation, Collection, Solid Waste Management Rules -2016 – for waste Minimization – Waste Minimization Strategies

Unit – II

Source Segregation – SWM rules-2016 – requirements for Source Segregation – House hold level – Onsite Storage – Public place – garden waste – Industrial waste(with in Municipal limit) – collection and transportation – SWM rules- 2016 for Primary & Secondary Collection for transportation – Primary Collection – Vehicle, Equipments, & Staff required , Secondary Collection: Concept of bin less Cities or Places – Secondary Storage – Transportation.

Unit –III

Street Sweeping – Street Sweeping Rules -2016 – Planning – Manual Street cleaning – Mechanized Street Cleaning – Cleaning of Surface Drains – Transfer Station. SWM rules – 2016 for Composting: Biological Process, Chemical Process, Physical Process, Pre processing of mixed municipal Solid waste – Composting technologies –types of household composting – Micro composting - Monitoring of Compost plants

Unit –IV

Recycling & recovery – Waste to energy – waste to energy rules 2016- Incineration – Bio-Methanization - Refused derived fuel – Pyrolysis – Gasification – Construction Demolition Waste – Sanitary Landfills – Sanitary landfills rules-2016- Environmental impact – Site Selection- Sanitary land fill operation.

Unit –V

Monitoring Municipal solid waste management – Operation and maintenance plan for municipal solid waste service – Environmental Monitoring -Management of special waste including domestic hazardous waste – plastic waste – bio medical waste – Slaughter house waste – Electric and Electronic E -Waste – Waste tyres – LED Battery Waste - Star Ratings of the Garbage free Cities.

References:

1. **Swachh Bharat Mission solid waste management manual**
cphceo.nic.in/WriteReadData/Cphceo_SolidWasteManagement2016/Manual.pdf
2. **Guidebook - Swachh Bharat**
swachhbharaturban.gov.in/writereaddata/sbm-newsletter-Nov.pdf
3. **Swachh Bharat Mission - Urban**
www.swachhbharaturban.in:8080/sbm/content/writereaddata/SBM_Guideline.pdf
4. Solid and liquid Waste management in rural areas –A technical Note-Unicef,GOI, Ministry of Rural Development.

Learning Outcomes

At the end of the UNIT I the students will be able

- To discuss Municipal Solid Waste Management, Plan, Policies Programme Legal frame work
- To explain Assessment of current Situation
- To explain Stakeholders Consultation for planning
- To describe the Preparation of Draft
- To classify Schedule for implementation
- To define Public Private Partnership and Action Points
- To list technical Aspects – Segregation, Collection
- To explain the Solid Waste Management Rules -2016 – for waste Minimization – Waste Minimization Strategies

At the end of the UNIT II the students will be able

- To explain Source Segregation
- To discuss the SWM rules-2016 and to list the requirements for Source Segregation – House hold level – Onsite Storage – Public place – garden waste – Industrial waste(with in Municipal limit)
- To recognize collection and transportation
- To describe the SWM rules- 2016 for Primary & Secondary Collection for transportation
- To enumerate Primary Collection – Vehicle, Equipments, & Staff required
- To explain Secondary Collection and Concept of bin less Cities or Places
- To describe Secondary Storage and Transportation.

At the end of the UNIT III the students will be able

- To explain Street Sweeping
- To describe Street Sweeping Rules – SWM 2016
- To familiarize Planning – Manual Street cleaning – Mechanized Street Cleaning – Cleaning of Surface Drains – Transfer Station.
- To enumerate SWM rules – 2016 for Composting: Biological Process, Chemical Process, Physical Process, Pre processing of mixed municipal Solid waste
- To discuss the Composting technologies
- To list the types of household composting – Micro composting - Monitoring of Compost plants

At the end of the UNIT IV the students will be able

- To explain the Recycling & recovery
- To discuss Waste to energy – waste to energy rules 2016
- To enumerate incineration, Bio- Methanization, Refused derived fuel, Pyrolysis, Gasification, Construction Demolition Waste
- To define Sanitary Landfills, Sanitary landfills rules-2016-
- To discuss Environmental impact, Site Selection, Sanitary land fill operation

At the end of the UNIT V the students will be able

- To discuss Monitoring Municipal solid waste management
- To explain Operation and maintenance plan for municipal solid waste service
- To enumerate Environmental Monitoring
- To familiarize Management of special waste including domestic hazardous waste – plastic waste – bio medical waste – Slaughter house waste – Electric and Electronic E -Waste – Waste tyres – LED Battery Waste
- To define Star Ratings of the Garbage free Cities

Lecture Schedule

S.No	Content	Hours
Unit – I	<p>Introduction to Municipal Solid Waste Management – Plan – Policies – Programme & Legal frame work – Assessment of current Situation – Stakeholders Consultation for planning - Preparation of Draft – Schedule for implementation – Public Private Partnership – Action Points.</p> <p>Technical Aspects – Segregation, Collection, Solid Waste Management Rules -2016 – for waste Minimization – Waste Minimization Strategies</p>	10
Unit – II	<p>Source Segregation – SWM rules-2016 – requirements for Source Segregation – House hold level – Onsite Storage – Public place – garden waste – Industrial waste(with in Municipal limit) – collection and transportation – SWM rules- 2016 for Primary & Secondary Collection for transportation – Primary Collection – Vehicle, Equipments, & Staff required , Secondary Collection: Concept of bin less Cities or Places – Secondary Storage – Transportation.</p>	10
Unit –III	<p>Street Sweeping – Street Sweeping Rules -2016 – Planning – Manual Street cleaning – Mechanized Street Cleaning – Cleaning of Surface Drains – Transfer Station. SWM rules – 2016 for Composting: Biological Process, Chemical Process, Physical Process, Pre processing of mixed municipal Solid waste – Composting technologies –types of household composting – Micro composting - Monitoring of Compost plants</p>	10
Unit –IV	<p>Recycling & recovery – Waste to energy – waste to energy rules 2016- Incineration – Bio- Methanization - Refused derived fuel – Pyrolysis – Gasification – Construction Demolition Waste – Sanitary Landfills – Sanitary landfills rules-2016- Environmental impact – Site Selection- Sanitary land fill operation.</p>	10
Unit –V	<p>Monitoring Municipal solid waste management – Operation and maintenance plan for municipal solid waste service – Environmental Monitoring Management of special waste including domestic hazardous waste – plastic waste – bio medical waste – Slaughter house waste – Electric and Electronic E -Waste – Waste tyres – LED Battery Waste - Star Ratings of the Garbage free Cities.</p>	10

Elective Major

Elective Major -Emergency Care in Disaster Management & First Aid Services

Credit: Theory 3+1

Objectives: At the end of this course the students will be able

- To explain the need and importance of disaster management
- To identify the Disaster Management Agency in the community
- To mobilize the community in disaster management
- To explain the objectives of First aid care
- To provide the first aid care for the injured

UNIT – I Introduction to Emergency Care in Disasters and First Aid

- 1 Introduction To Disasters, – Classification of the disasters – Flood – Drought – Cyclone – Hurricane – Earth quake – Volcanic eruption
- 2 Epidemic. Fire- Explosion, accidents of trains, aircrafts and ships
- 3 Ordinary bombing, atomic bombing, biological warfare, chemical warfare
- 4 Relief work during disaster. Pre disaster and Post disaster management. Post disaster stress syndrome

Community organization for disaster management

- 5 Disaster management Agency - NDRF – SDRF - DDRF –
- 6 Role of NGOs in Disaster management -Rehabilitation – Community resources
- 7 International agencies - WHO – UNICEF – FAO – Rock fellar foundation – Ford foundation – CARE – International Red Cross.
- 8 Current updates and other advancement

Unit II

- 1 **First aid care:** Introduction- objectives – limitations – principles – golden rules.
- 2 **Casualty Management:** Introduction – Handling and Transport – Loading a stretcher – Blanket lift – Manual lift- carrying a stretcher – Ambulance - loading and unloading
- 3 **Promoting Safety Consciousness:** Safety in the home – Smoke and smoking, Safety outside the home – Safety in agriculture, industries & hospitals.
- 4 **Supplies and Equipments for First Aid Procedure:** Description of First aid box - Bandages and slings – types and usage – Special bandages – Plaster of Paris
- 5 Carrying a loaded stretcher – Lifting and carrying an injured person – Different type of stretchers -
- 6 Avoiding accidents on the road- Current updates and recent advances.

Unit - III

- 1 **Burns and Scalds:** Causes – First aid – classification of burns – scalds – minor burns – general rules for treatment – corrosive chemicals – Chemical burns.
- 2 **Injuries to Bone, Joints and Fractures:** Causes – classification – sign and symptoms – first aid treatment – bandages – Splints – managing the upper limb & lower limb fractures – injuries to skull, rib, pelvis, spine – crush injuries – multiple fractures
- 3 Road accidents – wounds and bleeding – Hemorrhage – Bleeding from nose, stomach, lung, gum, bowel, ear, kidney – classification of wounds — Fire accidents, electrical injuries. Emerging challenges and issues

Unit - IV

- 1 **Cardiac Emergency:** Introduction – Cardio pulmonary arrest – Cardio pulmonary resuscitation – CPR for small children and infants
- 2 **Poisoning:** Introduction – classification – management of poisoning – bites and stings – snake bites – dog bites – insect bites and stings – stings of bees, rasps, fleas and hornets – Household poisons – specific poisons – drug poison – plant poison – Alcohol poison – Industrial poisons – Antidotes. Current updates and recent advances

Unit - V

- 1 **Loss of Consciousness:** Introduction – causes – Asphyxia – Heat stroke – Fainting – Stupor – coma – Epilepsy – Drowning – Choking –Strangulation and Hanging - Artificial Respiration.
- 2 **First Aid and Emergency Management of Special Organs:** Different types of injury to the eye, ear, throat – Haemoptysis – Haemetemesis – Haematuria – Haemorrhage from the rectum – Uterine Haemorrhage
- 3 **Frost bite:** Heat Exhaustion – Sun burn – Shock – Definition – classification – General treatment. Current updates and recent advances

Practical:

Demonstration of First Aid procedures
Making of First Aid Box
Demonstrate of splint -sling- Plaster of Paris
Demonstration of Cardio pulmonary resuscitation
Demonstration of bandages
Demonstration of stretcher and carrying the injured
Demonstration of loading and unloading of injured
Essential equipments in Ambulance
Demonstration of assisting the patients

Field visits

Visiting the following health care institutions for getting the exposure about the emergency care set up and first air procedures.
Community Health Centre -Primary Health Centre
Government General hospital causality, Blood Bank
The emergency department of medical colleges
Private nursing homes

Reference Books:

1. First Aid and Emergency Nursing - N.N Yalayyaswamy, CBS Publishers.
2. Manual of First Aid - LC.Gupta & Abitabh Gupta, Jaypee Pulishers.
3. First Aid (Tamil edition) - Kalavai. M.Mubarak Ali, NCBH (p) Ltd.
4. First Aid (Tamil edition) - Vandu mama, Gangai Book Store.
5. Basic Anatomy, Physiology & Health Education` - Dr. N. Muruges.

Learning Outcomes

Unit I: At the end of the Unit I students will be able

To define and classify the disasters.

To describe the health hazards of the disasters.

To describe the first aid care during flood, drought, cyclone, hurricane and earth quake.

To explain the first aid care during fire and explosion.

To describe the first aid care during different types of transportation accidents \

To explain the first aid care during bombing, atomic bombing, biological warfare and chemical warfare.

To describe the relief work during disaster, pre disaster and post disaster management.

To describe the disaster rehabilitations, mobilizing the community resources, national and International agencies for relief work.

Unit- II: At the end of the Unit II students will be able

To define the objectives, limitations, principles and golden rules of the first aid care.

To describe the casualty management handling and transport, loading a stretcher, blanket lift, Manual lift, carrying a stretcher.

To describe ambulance and loading and unloading procedure.

To explain the promotion of safety consciousness, safety in the home, smoke and smoking & safety outside the home.

To describe the safety in agriculture, safety in industries, & safety in hospitals.

To describe first aid procedure, supplies equipments & description of first aid box.

To classify the Bandages and slings, types and usage.

To explain the Special bandages, plaster of paris, bandages.

To plan a carrying a loaded stretcher, lifting and carrying an injured person.

To enumerate the different type of stretchers.

To explain the avoiding of accidents on the road.

Unit –III: At the end of the Unit III students will be able

To explain the first aid for burns and scalds.

To explain the first aid for corrosive chemicals and chemical burns

To describe the first aid for bones and joints fractures.

To classify the splints and its usages.

To describe the first aid for managing the fractures of upper limb & lower limb, injuries to skull, rib, pelvis, spine, crush injuries and multiple fractures.

To explain the first aid for road accidents, wounds with bleeding and hemorrhage.

To describe the first aid for bleeding from nose, stomach, lung, gum, bowel, ear, and kidney.

To classify the wounds.

To describe the first aid for fire accidents & electrical injuries.

Unit –IV: At the end of the Unit IV students will be able

To describe the first aid for cardiac emergency, cardio pulmonary arrest and cardio pulmonary resuscitation.

To explain the first aid for CPR for small children and infants.

To describe the first aid for poisoning.

To describe the first aid for bites and stings, snake bites, dog bites, insect bites and stings.

To describe the first aid for household poisons, specific poisons, drug poison, plant poison.

To describe the first aid for alcohol poisoning, industrial poisons & explaining the antidotes.

Unit- V: At the end of the Unit V students will be able

To define and classify the loss of consciousness

To describe the first aid for asphyxia, heat stroke, fainting, stupor & coma.

To describe the first aid for epilepsy, drowning.

To explain the first aid for strangulation, choking, hanging.

To describe the artificial respiration

To describe the first aid for the injury to the eye, ear, throat.

To explain the first aid care for haemoptysis, haemetemesis, haematuria, and haemorrhage from the rectum and uterus.

To describe the first aid for frost bite, heat exhaustion, sun burn, and shock.

LECTURE SCHEDULE

UNIT	Content	
I	Emergency Care in Disasters and First Aid during Disasters – Classification of the Disasters	
	First aid care during Flood & Drought.	
	First aid care during Cyclone & hurricane.	
	First aid care during Earth quake	
	First aid care during volcanic eruption, management of Epidemic after the disaster.	
	Fire- Explosion, accidents of trains, aircrafts and ships & First aid care	
	Ordinary bombing, atomic bombing, biological warfare, chemical warfare & First aid care	
	Relief work during disaster. Pre disaster and Post disaster management.	
	Community Emergencies – Disaster management & Rehabilitation	
	Mobilizing and blood donation camp Community resources	
	International agencies - WHO – UNICEF – FAO – Rockfellar foundation – Ford foundation – CARE – International Red Cross.	
	II	First aid care - Introduction- objectives – limitations
		Principles – golden rules
Casualty Management Introduction – Handling and Transport – Loading a stretcher		
Blanket lift – Manual lift- carrying a stretcher		
Ambulance - loading and unloading.		
Promoting Safety Consciousness Safety in the home – Smoke and smoking – safety outside the home		
Safety in agriculture – safety in industries – safety in hospitals.		
First Aid Procedure Supplies Equipments, Description of First aid box		
Bandages and slings – types and usage – Special bandages – Plaster of Paris bandages		
Carrying a loaded stretcher – Lifting and carrying an injured person – Different type of stretchers -		
Avoiding accidents on the road		
III		Burns and Scalds Causes – First aid – classification of burns – scalds – minor burns – general rules for treatment
		Corrosive chemicals – Chemical burns
		Injuries to Bone, Joints and Fractures Causes – classification – sign and symptoms – first aid treatment – bandages
		Splints
	Managing the upper limb & lower limb fractures – injuries to skull, rib, pelvis, spine –	
	Crush injuries – multiple fractures	
	Road accidents – wounds and bleeding	
	Bleeding from nose, stomach, lung, gum, bowel, ear, kidney – wounds – classification.	
	Fire accidents, electrical injuries.	
	IV	Cardiac Emergency – Cardio pulmonary arrest – Cardio pulmonary resuscitation.
CPR for small children and infants		
Poisoning – classification – management of poisoning		
Bites and stings – snake bites		
Dog bites		
Insect bites and stings – stings of bees, rasps, fleas and hornets.		
Household poisons – specific poisons – drug poisons – plant poisons.		
Alcohol poisoning.		

	Industrial poisons – Antidotes.
V	Loss of Consciousness – causes & classification
	Asphyxiation
	Heat stroke – Fainting – Stupor – coma
	Epilepsy
	Drowning
	Strangulation, Choking & Hanging
	Artificial Respiration
	Different types of injury to the eye, ear, throat – Haemoptysis – Haemetemesis – Haematuria
	Haemorrhage from the rectum – Uterine Haemorrhage.
	Frost bite - Heat Exhaustion – Sun burn
	Shock – classification – management of shock

Concurrent Field Training

Credit 2

General objective: The students to be able to apply and test the theory learned in the class room, to the field situation and develop self confidence as a SI/HI

Specific objective: To be able to study the community with special reference to duties and responsibility of SI/HI

➤ Collection of general information and Introduction with local leaders
➤ Village / Ward mapping
➤ Household Survey
➤ Study of vital statistics Registration
➤ Well survey, water sample collection and chlorination
➤ Identification of leaders
➤ Analyzing of data, preparation of report and presentation
➤ Detailed House Survey
➤ School Sanitation Survey
Inspection of Dangerous and offensive trades
➤ Hotel
➤ Lodging House
➤ Cinema Theatre/Community Halls/ Marriage Halls/ shopping malls
➤ Market
➤ Barbershop
➤ Bakery
➤ Aerated water factory/Water plants
➤ Rice and flour mill
➤ Dhobikhana
➤ Slaughter House
Food sampling technique
To visit Regional Food Laboratory
To observe cold chain maintenance at CHC , PHC, HSC
To visit malaria clinic programme, District Entomology Microbiology Lab to observe Vector & Fly control programmes.
To visit isolation ward in Govt. Hospitals
To visit ICTC, VCT Centers in NACP
To visit the District TB centers
Drinking water treatment plants
Water quality monitoring unit
Zero waste excreta disposals / Eco – friendly Bio Toilet
Solid waste management at different levels
Bio medical waste management
Sewerage Treatment Plant
To conduct Group discussion, Demonstration and interview technique on given health and sanitation topic
To apply PLA techniques in a community
Visit to community/ICDS centre/ primary school for health and hygiene education
To Dairy plants to observe Pasteurization
To industrial establishments to observe sanitation facilities and control and prevention of occupational hazards

To schools and Noon meal centres to observe sanitation facilities
To observe sanitation facilities and arrangements made during fairs and festivals
Visit to CHC, PHC, HSC to identify the organization structure and functions / RCH and Family Welfare Programmes.
Visit to Urban Health facilities to identify the organization structure and functions
Visit to CHC/PHC/HSC to discuss the Job responsibilities of HI/SI in a public health set up in PHC/ Municipalities/ Town Panchayats and records to be maintained by HI/SI
To Anganwadi centre to observe the growth monitoring charts
To Noon meal centre's to observe nutritional status and feeding of children
To pollution control board office to observe the laboratory related to all kinds of pollution
Observe the town planning
Observe the Underground drainage /sewerage
Observe water supply in urban areas
Observe city sanitation plan
Visiting the following health care institutions for getting the exposure about the emergency care set up and first aid procedures.
Government General hospital causality, Blood Bank
The emergency department of medical colleges
Private nursing homes

Learning Outcomes:

This training helps them to acquire the right skill sets needed for their work place /Field / Profession, enhances their employability skills and places them on the right professional path by placing them in the real life field eco system to practice and learn.

At the end of the training the students will be able to

- Understand villages and wards, rural and urban areas and other local bodies.
- Source out various information about the areas in relation to health and general demography
- identify the local leaders, important persons and skilled person and the way to develop rapport with them
- Conduct a survey and a house hold survey in a particular area allotted to them by approaching the people for health and sanitation related particulars, analyse the data, make interpretation, prepare a report and present them for suitable solution.
- Practice PRA and PLA techniques to understand and gather various particulars about the communities
- Understand the vital statistics registration system and work as a birth and death registrar.
- Understand and diagnose various sanitation related problems in the area and plan for the remedy to the problems.
- Carry out various sanitation related inspection and surveillance activities; make well survey, water sample collection and chlorination of water sources.
- Identify the conditions for healthful housing, make a detailed house survey and building survey and certify regarding the sanitary arrangements.
- Inspect Balwadies, Schools and Colleges regarding sanitary arrangements as per public health act.
- Collect food samples from hotels and shops and other food and beverage industries.
- Understand the role of Sanitary inspector in inspecting and licensing for various dangerous and offensive trades

- Understand the importance of cold chain maintenance at CHC, PHC and HSC and the practical difficulties in maintaining the cold chain
- Understand the activities and role of district hospital, malaria clinic, district entomology and micro biology laboratories, isolation wards in government hospitals and district TB Centre for the maintenance of the public health
- Handle various solid and liquid waste management problems, water, air, land and noise pollution related issues effectively for the clean environment
- Handle human (waste) excreta disposals problems effectively
- Prioritize bio medical waste segregation and safe disposal
- Understand the importance of sanitation and public health and the role of sanitary/ health inspector in a community and acquire the confidence to perform as a sanitary inspector when they appointed.

Supervised Field Training (SFT)

Credit: 2

Supervised Field Training is a field placement programme of PGDSI course students for Two Months in Corporation/ Railways/ Municipality/ Town Panchayat. It is organized and carried out in a real work situation, where students are assigned field work under the supervision of the host agency – The student will undertake a Project work on Sanitation/Health related issues recommended by the agency.