

Syllabus for the trade

of

HEALTH SANITARY INSPECTOR

(SEMESTER PATTERN)

UNDER

CRAFTSMAN TRAINING SCHEME (CTS)

Designed in: 2013

By

Government of India

CENTRAL STAFF TRAINING AND RESEARCH INSTITUTE

Directorate General of Employment & Training

Ministry of Labour & Employment

EN - 81, SECTOR – V, SALT LAKE CITY

Kolkata – 700 091

List of members of Trade Committee meeting for the trade of Health Sanitary Inspector

SL.No.	Name and Designation. S/SHRI	Representing Organization.	Remarks
01	Shri V.G.Mavani. M.D. & Chairman	Trumax Machine Tools, Rajkot. And Chairman, IMC of ITI Rajkot.	Chairman.
02	Dr.S.J.Rathi, Asst. Professor,	Department of Community Medicine,SBKS Medical Institute & Research Centre, Pipaliya,Di.Vadodara	Member
03	Dr.Niraj Pandit. Associate Professor	Department of Community Medicine, SBKS Medical Institute & Research Centre, Pipaliya,Di.Vadodara.	Member
04	Shri N.K.Bhadradia. Sanitary Inspector	C.U.Shah Medical Colledge,Surendranagar	Member
05	Shri V.H.Rana. Principal	Gujarat Training Centre Vadhavan, Di. Surendranagar.	Member
06	Shri Bhavin N.Rathod. Director,	Gujarat Training Centre Vadhavan, Di. Surendranagar.	Member
07	Shri Pankaj M.Yadav. Consultant	Gujarat Training Centre Vadhavan, Di. Surendranagar.	Member
08	Dr.H.M.Jam. Sr. Medical Officer	S.M.O. Uraban, Vadhavan.	Member
09	Dr.Meera D.Ghoricha. Dental Surgen	Swami Gurukul Hospital, Rajkot.	Member
10	Shri S.S.Lakhani. Health Inspector	C.U.Shah Medical College, Surendranagar	Member
11	Shri M.K.Parmar.	MSW.caritas India,Surendranagar.	Member
12	Shri S.A.Pandav. Regional Deputy Director	Regional Office (Training),Rajkot.	Member
13	Shri P.R.Prajapati Training cum Placement Officer	Regional Office (Training),Rajkot.	Member
14	Shri L.K.Mukheree. Deputy Director	C.S.T.A.R.I., Kolkata.	Member

List of members attended the Workshop to finalize the syllabi of existing CTS into Semester Pattern held from 6th to 10th May'2013 at CSTARI, Kolkata.

Sl. No.	Name & Designation	Organisation	Remarks
1.	R.N. Bandyopadhyaya, Director	CSTARI, Kolkata-91	Chairman
2.	K. L. Kuli, Joint Director of Training	CSTARI, Kolkata-91	Member
3.	K. Srinivasa Rao, Joint Director of Training	CSTARI, Kolkata-91	Member
4.	L.K. Muhkerjee, Deputy Director of Training	CSTARI, Kolkata-91	Member
5.	Ashoke Rarhi, Deputy Director of Training	ATI-EPI, Dehradun	Member
6.	N. Nath, Assistant Director of Training	CSTARI, Kolkata-91	Member
7.	S. Srinivasu, Assistant Director of Training	ATI-EPI, Hyderabad-13	Member
8.	Sharanappa, Assistant Director of Training	ATI-EPI, Hyderabad-13	Member
9.	Ramakrishne Gowda, Assistant Director of Training	FTI, Bangalore	Member
10.	Goutam Das Modak, Assistant Director of Trg./Principal	RVTI, Kolkata-91	Member
11.	Venketesh. Ch. , Principal	Govt. ITI, Dollygunj, Andaman & Nicobar Island	Member
12.	A.K. Ghate, Training Officer	ATI, Mumbai	Member
13.	V.B. Zumbre, Training Officer	ATI, Mumbai	Member
14.	P.M. Radhakrishna pillai, Training Officer	CTI, Chennai-32	Member
15.	A.Jayaraman, Training officer	CTI Chennai-32,	Member
16.	S. Bandyopadhyay, Training Officer	ATI, Kanpur	Member
17.	Suriya Kumari .K , Training Officer	RVTI, Kolkata-91	Member
18.	R.K. Bhattacharyya, Training Officer	RVTI, Trivandrum	Member
19.	Vijay Kumar, Training Officer	ATI, Ludhiana	Member
20.	Anil Kumar, Training Officer	ATI, Ludhiana	Member
21.	Sunil M.K. Training Officer	ATI, Kolkata	Member
22.	Devender, Training Officer	ATI, Kolkata	Member
23.	R. N. Manna, Training Officer	CSTARI, Kolkata-91	Member
24.	Mrs. S. Das, Training Officer	CSTARI, Kolkata-91	Member
25.	Jyoti Balwani, Training Officer	RVTI, Kolkata-91	Member
26.	Pragna H. Ravat, Training Officer	RVTI, Kolkata-91	Member
27.	Sarbojit Neogi, Vocational Instructor	RVTI, Kolkata-91	Member
28.	Nilotpal Saha, Vocational Instructor	I.T.I., Berhampore, Murshidabad, (W.B.)	Member
29.	Vijay Kumar, Data Entry Operator	RVTI, Kolkata-91	Member

GENERAL INFORMATION

1. **Name of the Trade** : HEALTH SANITARY INSPECTOR
2. **N.C.O. Code No.** : 3222.10 (Proposed)
3. **Duration** : One Year (2 Semester)
4. **Power** : 4 Kw
5. **Space Norms** : 40 Sq.m.
6. **Entry Qualification** : Passed 10th Class Examination
7. **Unit Size (No. of students)** : 20
8. **(A) Instructor's /Trainer's Qualifications:** Diploma in Sanitary Inspector with 2 years relevant Experience.
OR
NTC/NAC in the trade of Health Sanitary Inspector with 3 years experience in the relevant field.
- 8 (B). **Desirable Qualification** : Preference will be given to Craft Instructor Certificate(CIC)

Note: At least one Instructor must have Diploma in relevant field.

**SYLLABUS FOR THE TRADE OF "HEALTH SANITARY INSPECTOR" UNDER CTS.
DURATION - SIX MONTH**

First Semester

Semester Code: HSI: SEM I

WEEK NO.	PRACTICAL	THEORY
1-3	<p><u>FOOD & NUTRITION</u></p> <ol style="list-style-type: none"> 1. Classification of public health and importance of foodstuffs. 2. Assessment of daily requirement of nutrition. 3. Assessment of nutritional requirement for special group. 4. Coding of balanced diet. 5. Assessment of nutritional Status of family. 6. Survey of Nutrition Education and its importance. 7. Therapeutic Nutrition. <p>Knowledge of General Safety, Occupational health and hygiene.</p>	<ol style="list-style-type: none"> 1. Science of food. Introduction to Nutrition, Health & Disease. Classification and of food-stuff Nutrient and their sources (food example) 2. <u>Nutrient</u>: Carbohydrates, Proteins, Vitamins, & Minerals, function, Source and diet requirement of each. Calories:- Supply of calories by proximate principles. Requirement of proximate principle Requirement of vitamins and Minerals. Calorie and protein requirement of infant, weaning, pregnancy, lactation, preschool child, school going child. 3. Family Assessment:- Clinical examination of all members, height and weight for all, head circumference and skin fold for children, blood test for Hb% for all, diet survey, weighing raw food, weighing cooked food. 4. <u>Balanced Diet</u> : Definition, factors to be considered co planning ---- Nutritional requirements of special Groups. Prescription of diet Menu for Hypertensive persons, Nephritis Patients, Diabetic patients, Heart patients 5. Nutrition Education:- Malnutrition Low birth Weight (LBW) Causes of LBW Prevention of LBW Protein energy Prevention of malnutrition Special care to be given to malnutrition Children. Therapeutic Diet- Instruction for balanced diet- weight reduced diet- low fat diet- bland diet- cirrhosis of liver- renal stone. Home management of Malnutrition.

4-6	<p><u>WATER SANITATION:</u></p> <ol style="list-style-type: none"> 1. Classification of sources of water. 2. Difference between shallow and deep well. 3. Process of sanitary well. 4. Demonstration of a protected well in village.. 5. Sanitary inspection of water supply. 6. Collection and despatch of water sample for chemical arsenic and bacteriological examination. 7. Purification of water in urban area. 8. Purification of water in rural area. 	<p><u>1. WATER :</u></p> <p>WHO's definition of environmental Sanitation. Safe and whole some water, Sources of water, Various uses of water and its need. Water borne diseases, conservation source of water, quality of water, public health aspect of very hard water, Steps of disinfection of well. Physical, chemical and biological standard for portable water sources and nature of pollution of water in large scale and small scale. Process of disinfections of water in large and small scale provisions for sanitary wells and tube wells, plumbing system and its maintenance. Water supply and storage system at the community and domestic level.</p>
7	<p><u>AIR SANITATION:</u></p> <ol style="list-style-type: none"> 1. Demonstration of an air-conditioning plant for thermal comfort. 	<p><u>2. AIR</u></p> <p>Concepts and importance of adequate ventilation. Types of ventilation. Natural ventilation. Mechanical ventilation. Indicators of air pollution. Process air purification and disinfection. Green house effect, types of ventilation, thermal comfort, air temperature humidity, radiation, evaporation and their measurements.</p>
8	<p><u>NOISE</u> Measures and reduce of intensity of air pollution.</p>	
9	<p><u>REFUSE DISPOSAL :</u></p> <ol style="list-style-type: none"> 1. Method of waste disposal. 2. Demonstration and operation of compost pits , sanitary land filling and insanitation process. 	
10-11	<p><u>NIGHT SOIL DISPOSAL :</u></p> <ol style="list-style-type: none"> 1. Construction and maintenance of sanitary latrines. <ul style="list-style-type: none"> - soakage pit. - sanitary latrine. - RCA latrine - Septic tank latrine - Sewage treatment plant. - Sulabh Sauchalaya 2. Maintenance of trenching ground 	<p><u>3. SOLID WASTE DISPOSAL</u></p> <p>Source of generation, storage and collection. Sanitary method of disposal of solid waste. Classification of solid waste in the community. Polluting affect of different types of solid waste, system of collection of solid waste from the houses and street, sanitary transportation of solid waste, sanitary process of disposal of solid waste such as composting, sanitary land filling, incineration.</p>

12-13	<p><u>SEWAGE DISPOSAL :</u></p> <ol style="list-style-type: none"> 1. Demonstration of sewage treatment plant. 2. Inspection of flushing tank, soil plant, traps, man holes, inspection chambers and maintenance of gully trap. 3. Collection of sewage sample for chemical and bacteriological analysis and interpretation or reports. 4. Inspection and maintenance of sewage treatment plants and disinfections of stabilized sewage. 5. Organization of cleaning, minor engineering and oil operation of the sewage system. 6. Detection of pollution of water from sewage. 	<p><u>4. LIQUID WASTE DISPOSAL</u></p> <p>Hygienic method of disposal of liquid waste. Health hazard related to accumulation of liquid waste or in sanitary drainage system. Construction and maintenance of sanitary sewerage system .Use of different types of traps, pollution of water sources from sewerage and its disinfection</p> <p><u>5. NIGHT SOIL DISPOSAL</u></p> <p>Sewage is liquid waste containing human excreta. Fly nuisance Soil pollution. Water pollution Food contamination, Faucal - borne disease due to unsanitary disposal. Different types of latrines in use principal of construction of sanitary latrines and their use, especially berg hole, dug well, RCA and septic tank latrine.</p> <p>Sewage system or water carriage system. What is sewage. Why sewage purification is required. Sewer appurtenances, house drain. Street sewers or municipal sewers. Sewage forming land treatment. Sewage disposal by Biogas plant or gobar gas plant. Methods of disinfection of sewage. Sanitary practices of sewage farming</p>
14	<p><u>BURIAL OF FUNERAL GROND</u></p> <p>Visit to burial or funeral ground for sanitation , proper process of disposal of dead body and maintenance of records as per legal provision .</p>	<p><u>6. BURIAL AND CREMATION GROUND AND MASS CAUALTY DISPOSAL :-</u></p> <p>Disposal of dead- Human.</p> <p>Burning or cremation.</p> <p>Requirement for a burning ground. Disposal of dead bodies and maintenance of their records.</p>

15 - 16	<p><u>SOIL SANITATION</u></p> <ol style="list-style-type: none"> 1. Sampling for assessment of soil pollution . 2. Treatment of soil to alter the PH and disinfections. 	<p><u>7. SOIL SANITATION :-</u></p> <p>Classification of soil. Classification from the view point of importance in Public Health. Reason for the excessive moisture in the soil. Reclamation of land. Soil, bacteria and parasites. Soil and Health.</p> <p>Study on insecticides, pesticides and disinfections. Sterilization & disinfection of different Articles. Various spraying equipments.</p>
17-18	<p><u>CONTROL OF BIOLOGICAL ENVIRONMENT :-</u></p> <ol style="list-style-type: none"> 1. Identification and use of insecticides, pesticides and disinfection 2. Application of Techniques of sterilization and disinfection of various articles. 3. Identification of different parts of spraying equipments 4. Operation and maintenance of spraying equipment . 5. Use of Larvicide's. 6. Use of rodenticides 	<p>Study on insecticides, pesticides and disinfections. Sterilisation & disinfections of different articles. Various spraying equipments. Uses of rodenticides & larvaecidals.</p>
19	<p><u>HOUSING</u></p> <p>Survey of housing for assessing sanitary standards and prescription of re medical measures.</p>	<p><u>8. HOUSING :-</u></p> <p>General principal of healthy housing. Home Sanitation. Food hygiene at home. Specification for healthy housing.</p>
20-21	<p><u>FAIRS AND FESTIVALS</u></p> <p>Inspection and preparation of fair and festival, industry and trade.</p>	<p><u>9. SANITATION MEASURES IN FAIRS, FESTIVALS AND NATURAL CALAMITIES-MASS CASUALTY DISPOSAL :</u></p> <p>Sanitation Management at fairs and festival. Sanitary problems associated with human gatherings and temporary settlements. Alternate emergency sanitary provisions to prevent sanitation crisis for food, housing, water supply, lighting, disposal of community waste and prevention of outbreak of epidemics.</p>

22-24	<p><u>OCCUPATIONAL HEALTH</u></p> <ol style="list-style-type: none"> 1. Inspection of trade premises. 2. Visit to a factory for survey of sanitation problems of the workplace. 3. Identification of danger zones and adequacy of safety arrangements. 4. Health and sanitation survey of the vicinity of the industrial establishment for identification of health problems emerging from industrial pollution and suggestions for remedial measures. <p>Environmental pollution- its causes, consequences, mitigation and remedies.</p>	<p><u>OCCUPATIONAL HEALTH</u></p> <p>Industrial hygiene- workers health protection- occupational risk factors and safety measures- control of dust and other hazardous substance- safety measure for occupational risk factor- legislative provisions- benefits to employees</p> <p><i>Incorporation of Municipal Rules and Regulation in Sanitation.</i></p>
25	Project work / Industrial visit (optional)	
26	Examination	

**SYLLABUS FOR THE TRADE OF "HEALTH SANITARY INSPECTOR" UNDER CTS.
DURATION - SIX MONTH**

Second Semester

Semester Code: HSI: SEM II

WEEK NO.	PRACTICAL	THEORY
01	1. Prepare a report on general survey of health care in different area.	1. <u>COMMUNICABLE DISEASES:</u> Introduction, Disease transmitted through air-Diseases transmitted by air- Diseases transmitted by contact- Diseases transmitted by insects and other diseases. General measures for prevention & control of communicable diseases. <i>Role of Health Worker</i>
02	2. Organizing immunization services.	2. <u>IMMUNITY & IMMUNISATION:</u> Purpose, types & effects. National immunization schedule for prevention of major communicable diseases – BCG, DTP, polio. Measles & Typhoid Vaccines.
03	3. Ensuring disinfection of hospital wards, Operation Theatre, Labour Room.	3. <u>DISINFECTION&STERILISATION</u> Effective disinfection by liquid Chemical agents like Halogen, Potassium per magnate solution etc. Solid chemical agent-Bleaching – Bleaching powder, Lime etc.
	4. . Participation in various programmes.	4. <u>NON –COMMUNICABLE DISEASES:</u> Introduction- Incidence and prevalence: Diagnosis & prevention.
04	5. Conducting programmers on personal hygiene in different area.	5. <u>PERSONAL HYGIENE:</u> Factors influencing health &hygiene. Health hobbies & practice. Maintenance of normal circulation ,respiration digestion etc. Skin care cleanliness. Dental care. Care of hands, washing, Exercises importance. food values. Nutrition.
05	6. Arranging First aid treatment in case of emergency.	6. <u>FIRST AID:</u> Treatment of common ailments.

WEEK NO.	PRACTICAL	THEORY
06 - 07	<p><u>HEALTH STATISTICS</u></p> <p>Health information and basic statistics, Exercises related to sampling procedure, demography, mean, media and mode, standard deviation, computation of rates and ratio (regarding) fertility , morbidity and mortality), tabulation of data, analysis of data ,preparation of groups, charts and maps and interpretation.</p>	<p><u>HEALTH STATISTICS</u></p> <p>To enable the student to have understanding of the terms like statistics and Bio- statistics and their applications and relation to public health.- rates and ratio- averages: mean, medium and mode- deflation of common rates-</p> <p>Various types of presenting data. Presentation of data, Necessity of sampling, Types of sampling methods, Analysis of data. Interpretation of data.</p> <p>Mortality statistics, Morbidity statistics,</p> <p>Tabulation of Data</p> <p>Histogram, Ogive, pie Chart, Bar chart.</p>
08 - 10	<p><u>PUBLIC HEALTH ACTS</u></p> <p>Collection and dispatch of food samples for analysis and preparation of papers for legal proceeding.</p> <p>performance of simple household tests to identify adulteration in Milk, ghee, oil, sugar, tea, etc.</p> <p>Acquaintance with the registration, reporting and documentation process for implementation of different acts.</p>	<p><u>DEMOGRAPHY AND HEALTH SURVEY</u></p> <p>a) Registration of birth, death and mortality</p> <p>b) immunization process</p> <p><u>PUBLIC HEALTH ACTS :-</u></p> <p>Indian Epidemic Diseases Act.</p> <p>Purification of Air And Water Pollution Acts.</p> <p>Prevention of Food adulteration Act.</p> <p>Birth and Death Registration Act.</p> <p>N.T.P ACT.</p> <p>Suppression of immoral Traffic Act (SITA).</p> <p>Municipal and local body Acts related to housing, sanitation etc.</p> <p>Factory Act and Employer’s State Insurance Act.</p>

<p>11 - 13</p>	<p><u>PUBLIC HEALTH ADMISTRATION</u></p> <p>Visit to different types of health organization and acquaintance with their system (sub –center) PHC, hospitals, municipality). Evolution of health services.</p> <p>Study and maintenance of record and repots related to public health practices in different organization</p>	<p><u>PUBLIC HEALTH ADMINISTRATION</u></p> <p>Organization of National Health Care Services.</p> <p>System of National Health Care Services</p> <p>Sub Center –</p> <ul style="list-style-type: none"> c) Primary Health Care d) Community Health Care e) Specialization Health Intuitions. <p>Health services in India before independence Health services in India after independence Current status of India. Central, State and Local organizations in India. Relation with other departments International organizations and their cooperation in the field of Health. (WHO, UNICEF, UNDP(United Nation Development Programme) Voluntary Agencies in Health Programmes</p> <p>Operation Aspects of National Health Programs-</p>
<p>14 - 17</p>	<p><u>PRIMARY CARE (First Contact)</u></p> <p>Dressing of wounds, bandaging-</p> <p>Management of bone injuries with splints, slings. Transportation of injured and unconscious case and their managements.</p> <p>Diagnosis and treatment of minor alignments – diarrhea disorders, gastric problems, pain, cough, fever, skin condition, conjunctivitis, care of bleeding, toothache.</p> <p>Management of poisoning.</p> <p>Artificial respiration.</p>	<ul style="list-style-type: none"> f) Family Welfare Program g) Maternity & h) child Health Service i) National Malaria Eradication program. j) National Filarial Control program k) National Leprosy program l) Diarrheas Disease Control program m) STD Control program n) Goiter Control program o) Blindness Control program p) Universal Immunization program

18 - 19	<p><u>PERSONAL HYGIENE</u> Brief Study of the body connected with personal hygiene. Inspect school and catering establishments for assessment of personal cleanliness and hygienic practices and ensuring maintenance of desirable standard</p>	<p><u>BEHAVIOURAL SCIENCE</u> Habit and customs affecting personal Hygiene. Care of the body-habits clothing. Menstrual hygiene. Care of special sensory organs. Oral hygiene. Factors influencing human behavior. Change of behavioral pattern in different age groups. Interpersonal relations and defense mechanism.</p>
20 - 24	<p><u>HEALTH EDUCATION AND COMMUNICATION</u></p> <p>Practical exercises for designing messages, preparation of audio-visual materials, use of audio-visual aids.</p> <p>Identification of homogenous group , for imparting group health education.</p> <p>Identification of contact person. Leadership for gaining access to the community.</p> <p>Assessment of both desirable and organize health education program to bring about desirable changes .</p> <p>Make personal contact to motivate for the acceptance of health program or healthful practices.</p>	<p><u>HEALTH EDUCATION</u></p> <p>Health Education opportunities for Health Inspector in his work place..</p> <p>Use of audio visual aids and media.</p> <p>Health Education approach.. Content of Health Education Principal of Health Education Planning Health Education activities. Education in relation to environmental sanitation programme. Health Education material on environmental sanitation. Education on personal hygiene. Utilizing Community Resources for Health Education. Education through primary Health centre</p> <p>Health Education through personal contract, group meetings and indirect approaches. AIDS perception.</p>
25	Revision	
26	Examination	

TRADE: HEALTH SANITARY INSPECTOR

LIST OF TOOLS & EQUIPMENT

SL NO	Name of the item	Qty.
A. AUDIO-VISUAL AIDS.		
1	Overhead Projector.	1 no
2	LCD Projector	1 no
3	Personnel Computer with multimedia facilities	1 no
B. Working Models For		
1	Ventilation.	1 no
2	Sewage system and Treatment plan	1 no
3	Water purification plant	1 no
4	Sanitary plant	1 no
5	Waste disposal plant.	1 no
C. General outfits		
1	Refrigerator.	1 no
2	Autoclave	1 no
3	Sterilizer.	1 no
4	Fluoroscope	1 no
5	Thermometer	1 no
6	BP Instrument	1 no
7	Stethoscope	1 no
8	Hemoglobin meter	1 no
9	Laboratory Microscope	1 no
10	First Aid Kit.	1 no
11	Needles and Syringes	As per requirement.

NOTE:-

Six weeks on the job training can be arranged with local agency (Municipality, Zila Parishad, Metropolitan development Authority, Secondary Hospital etc.) to expose the trainees with water treatment plant, sanitation, waste disposable plant, vaccination etc.

HEALTH EDUCATION CHARTS

Standard charts related to Health and Sanitation – Assorted.

Books/Manuals on Air and Water Pollution Acts, Epidemic diseases Act, Public and Health Acts and Municipal Acts, Factory Acts and State Insurance Act.

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