PEN7J002 URBAN ANDRURALSANITATION 3-0-0

OBJECTIVES:

- To expose the students the various aspects of urban and ruralsanitation.

UNIT I

Principles of healthful housing

Control of environment – Engineering methods - Modes of transmission of diseases – Mosquitoes and Flies - Life cycle, important characteristics and control measures of carriers. Basic principles of healthful housing - heating - ventilation - lighting - air conditioning – noise control in residentialbuildings.

Plumbing and swimming pool sanitation

Scope of plumbing - definition of plumbing terms - general principles of good plumbing system – water seal - types of traps, siphonage – design of plumbing system for multistory buildings - plumbing codes and standards. Transmission of diseases in swimming pools - quality standards of pool water - design features of pools and their appurtenances

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UNIT II

Refuse and food sanitation

Refuse characteristics in urban and rural areas - conditions and factors affecting collection, quantity and conveyance of solid waste - disposal methods - incineration - design of incinerators sanitary landfill - composting - waste recycling - biogas and gobar gas plants. Food borne and food caused diseases – food poisoning - food preservation – precautions in the design of kitchen - bactericidal treatment of kitchen utensils - Bacteriological contents of milk borne diseases - essential of milk sanitation - dairy barn sanitation - pasteurization methods - milktests.

UNIT III

Urban and rural water supply system

Water supply arrangements in urban buildings - design of water supply systems for multistoried buildings - consideration in the development of water supply programmes for rural areas - health and economical aspects in the design and installation of rural water supply systems - methods of construction and development of different types of wells - sanitation of rural wells - pumps for rural wells - treatment methods for rural water supply.

UNIT IV

Rural sanitation

Layout of drainage systems in urban domestic areas - methods of disposal of night soil in rural areas - different privies - Twinpitpourflush toilets, VIP latrines - water carriage method of sewage disposal - cesspools and seepage pits - septic tank systems - oxidation ponds - aeratedlagoons.

OUTCOMES:

The students completing the course will have the ability to

- describe basic principles of healthful housing, plumbing systems, rural water supply and sanitation
- plan appropriate water supply and sanitation systems for multistoried buildings and rural areas

TEXTBOOKS:

1. Salvato, "Environmental Sanitation", John Wiley & Sons, New York,1982.
2. Ehler and Steel, “Municipal Rural Sanitation”, McGraw Hill Book Co.,New York,1964.
3. Wagner E.G. and Lanoix J.N., “Water supply for rural areas and small communities”, World Health Organisation Publication, Geneva, 1958.

REFERENCES:

1. Babbit H.E and Donald J.J., Water supply Engineering, McGraw Hill Book Co., New York, 1962.