Certificate Course in Sewage Treatment Process

Course duration: 3 Weeks

Start Date: 27th November 2023 End Date: 15th December 2023

Rashtriya Chemicals And Fertilizers Limited, Mumbai
(A Government of India Undertaking)

Rationale:

In the past, Civilization has developed and flourished on the banks of rivers because 'Water is Life', whereas in present the scenario is different. Due to Urbanization, the migration of people has been encouraged from villages to the urban areas generating environmental issues. Today's main environmental issue is, supply of sufficient potable water to the population, which has become prime and crucial task. Out of total water supplied for domestic and industrial use, generally 60 to 80% waste water is generated. Its safe disposal and treatment is the need of time.

Water is getting scarce day by day. Therefore, it becomes our moral duty to recycle and reuse water for the benefit of Mankind.

Conserving and ensuring continuous availability of potable water source for future generations where the withdrawal of fresh water from an ecosystem should not exceed its natural replacement rate.

It has been observed that waste water treatment facilities consume a significant amount of energy. In some regions of the world over 15% of total electricity consumption is devoted to water treatment. Therefore, it is need of an hour to rethink about the process used. We need to put our efforts to install and adopt 'State of Art' technology for cost effective and energy efficient process / system.
RCF has been situated in the heart of Mumbai City and is operating Sewage Treatment Plant and Effluent Treatment Plant successfully. 23000 m^3 per day of sewage is being treated and 80% water is being recovered as process water.

Considering the huge success of the existing Sewage Treatment Plant RCF is in the process of setting up a new Sewage Treatment Plant of 5 MGD capacity, adjacent to the existing STP plant. Maximum quantity of the treated water will be supplied to nearby industries.

Objectives of the Course:

- To provide exposure for water / sewage treatment technologies available with future road maps and identify future trends and needs.
- Overview of the most recent water /sewage treatment technologies.
- To encourage participants' technical knowledge across a broad range of water / sewage treatment techniques, with understanding to adopt the best available technology options, cost effective systems, with minimal energy consumption along with best approaches to safety and environmental management.
- To enhance the participants' analytical and trouble-shooting skills by generating awareness to identify and resolve operational inefficiencies, if any in their facilities.

- To provide an opportunity to exchange ideas on a varied range of production topics with open platform with leading technologist and workshop participants.

Who Should Attend:

- Employees and Officials in Government, Private and Public Sector, Universities, Chambers of Commerce and Industry
- People engaged in Water Management / Sewage Treatment in City Municipal Corporations

Course content:

Module 1: Introduction

- Definitions
- Sources of Sewage
- Sewage Discharge
- Effect of Untreated Wastewater Disposal

Module 2: Water Quality and Estimation of Organic Content

- Biochemical Oxygen Demand (BOD)
- Chemical Oxygen Demand (COD)

Module 3: Characteristics Of Sewage

- Temperature
- pH
- Colour, Odour and Solids
- Nitrogen, Phosphates and Chlorides
- Organic Matter

Module 4: Overview of Sewage treatment Methods

- Physical Unit Operations
  - Screens
  - Grit Chambers
- Chemical & Biological Unit Processes
  - Coagulation
  - Flocculation
  - Sedimentation
  - Membrane Bioreactors
  - Activated Sludge Process
  - Reverse Osmosis
  - Ultra Filtration

Module 5: Sludge Management

- Thickening
- Dewatering

        - Belt Filter Press System
        - Centrifugation
    - Anaerobic Digestion

Module 6: Water Pollutants and Effects on Environment

- Organic pollutants
- Pathogens
- Nutrients and agriculture runoff
- Suspended solids and sediments (organic and inorganic)
- Inorganic pollutants (salts and metals)
- Thermal Pollution
- Radioactive pollutants

The teaching - learning involves a wide range of pedagogical approaches, including interactive lectures, group exercises, case studies, visits to factory, research institutes, city municipal corporations, etc.

Benefits to Participants:

The participants would get a holistic exposure to:

- In-depth knowledge and exposure of water conservation / sewage treatment technologies
- Enhance the participants' analytical and trouble-shooting skills
- Provide platform to exchange ideas on a varied range of production topics with leading technologists

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Faculty Profile:

Faculty will be deployed from the rank of Chief Engineers and above who are

- Qualified engineers from the premier institutes
- With excellent teaching skills and
- Having a rich experience in the field for over twenty five years

Eligibility Criteria:

Bachelor's degree is a must. Junior / Middle level position holders with special focus on Water Conservation / Sewage Treatment Techniques and Allied Sectors.

Capacity of Participants:

Minimum 12, Maximum 30 Participants