

Wastewater Treatment Processes

Course general description:

This comprehensive course on Wastewater Treatment provides an in-depth understanding of wastewater treatment processes, from basic principles to advanced technologies. Over the course sessions, participants will explore physical, chemical, and biological treatment methods, sludge management, and wastewater reuse. The course also covers design, operation, monitoring, and emerging trends in the field.

Audience:

This course is designed for:

1. Operation engineers
2. Environmental engineers
3. Maintenance Engineers
4. Technical and Managerial Staff those seeking to enhance their knowledge in Wastewater treatment processes.

Course objectives:

By end of the course participants will gain:

1. Foundational understanding of wastewater treatment principles and processes.
2. Ability to Identify common wastewater contaminants and basic treatment parameters.
3. Overview of best practices by exploring advanced technologies and resource recovery.
4. Operational skills for effective and compliant wastewater treatment systems
5. Application of knowledge through case studies and exercises.

Course duration:

5 days

Course location:

Cairo-Dubai-Istanbul

Course contents:

Day-1

- Pretest
- Introduction to Water Treatment
- Overview of wastewater types and sources
- Importance of wastewater treatment
- Regulatory standards and compliance

Day-2

- Physical & Chemical Treatment Processes
- Screening and sedimentation
- Filtration techniques
- Flocculation and coagulation
- Chemical dosing and control
- Disinfection methods

Day-3

- Biological Treatment Processes
- Microbial metabolism in treatment
- Aerobic and anaerobic processes
- Activated sludge process
- Advanced Treatment

Day-4

- Operation of Wastewater Treatment Plants
- Common monitoring parameters (BOD, COD, TSS, etc.)
- Common Plant Problems & Troubleshooting
- Sludge Treatment and Disposal
- Sludge characterization and handling
- Thickening, digestion, and dewatering
- Sludge disposal and reuse strategies

Day-5

- Examples of Wastewater treatment plants
- Wastewater reuse technologies
- Nutrient and energy recovery
- Case studies on successful reuse projects
- Posttest

Methodology:

- 50% lectures & concepts
- 10% Videos
- 15% Case studies
- 15% Exercises
- 10% Discussions

Course code: (TPRS057)