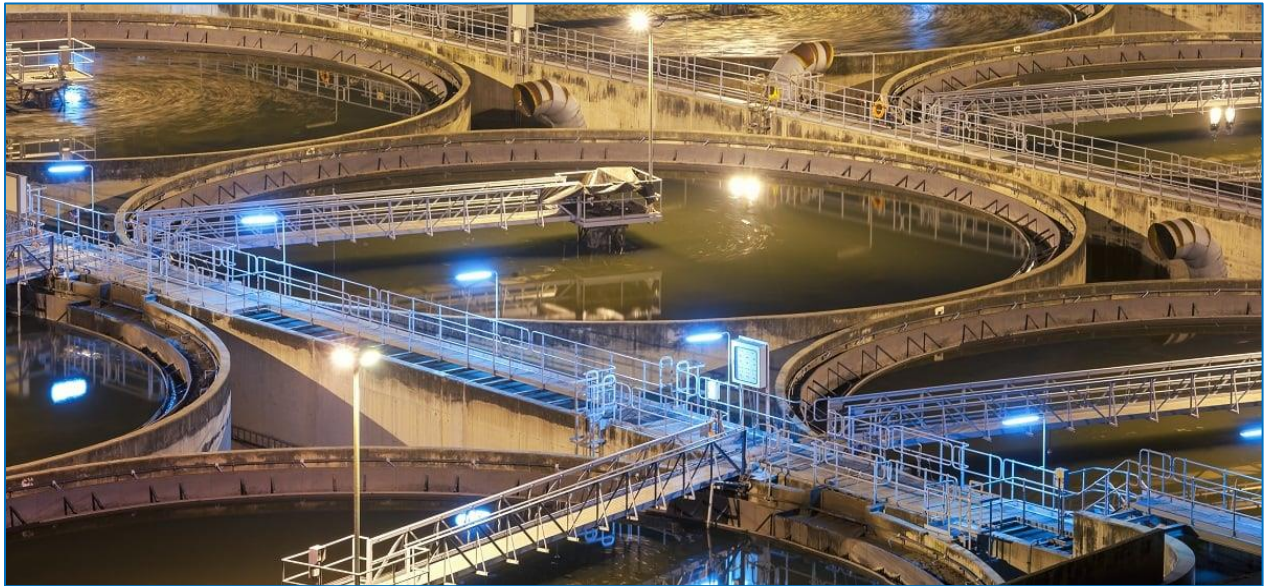




WE116: Waste Water Treatment Best Practice

Training Description:

Wastewater treatment is a critical process in ensuring public health, environmental protection, and sustainable development. This intensive training course provides participants with a comprehensive understanding of wastewater treatment systems, technologies, and operational best practices. It covers the latest approaches to design, operation, monitoring, and optimization of wastewater treatment plants (WWTPs), as well as regulatory compliance, safety considerations, and sustainable practices. Through a combination of lectures, case studies, group discussions, and practical exercises, participants will gain the knowledge and skills necessary to manage and optimize wastewater treatment processes in alignment with international standards and environmental guidelines.

Training Objectives:

By the end of the training, participants will be able to:

- ✓ Understand the fundamentals of wastewater composition, sources and characteristics
- ✓ Identify and evaluate various wastewater treatment technologies and their applications
- ✓ Apply best practices in the design, operation and maintenance of wastewater treatment plants
- ✓ Monitor and optimize treatment processes to achieve compliance with discharge regulations
- ✓ Implement energy-efficient, cost-effective and sustainable wastewater management solutions
- ✓ Address safety, environmental and regulatory challenges in wastewater operations

Training Designed for:

This training course is intended for Environmental engineers and specialists, Wastewater treatment plant operators and supervisors, Facility managers from industrial and municipal sectors, Environmental health & safety officers, Consultants and regulators working in water and wastewater management and Technical professionals seeking to enhance their expertise in sustainable water treatment.

Training Requirement:

“Hand’s on practical sessions, equipment and software will be applied during the course if required and as per the client’s request.”

Contents can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client’s learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Program:

DAY ONE:

❖ Fundamentals of Wastewater Treatment

- Introduction to wastewater management and environmental impact
- Sources and types of wastewater (domestic, industrial, municipal, stormwater)
- Physical, chemical, and biological characteristics of wastewater
- Overview of wastewater treatment objectives and stages
- International and local regulatory frameworks (EPA, WHO, ISO standards)
- Case study: Global trends in wastewater treatment and reuse

DAY TWO:

❖ Primary and Secondary Treatment Processes

- Screening, grit removal, and primary sedimentation techniques
- Biological treatment processes:
 - Activated sludge process
 - Trickling filters
 - Rotating biological contactors (RBCs)
- Aeration methods and oxygen transfer efficiency
- Microbial communities and their role in treatment efficiency
- **Hands-on exercise:** Process flow diagram analysis

DAY THREE:

❖ Advanced Treatment and Resource Recovery

- Tertiary and advanced treatment methods:
 - Filtration, disinfection (chlorination, UV, ozone)
 - Membrane technologies (UF, NF, RO, MBRs)
- Nutrient removal (nitrogen, phosphorus) techniques
- Sludge management and treatment (thickening, digestion, dewatering)
- Energy recovery and biogas utilization from sludge
- Best practices for water reuse and recycling (industrial, irrigation, potable reuse)
- **Activity:** Designing a sustainable wastewater treatment train

DAY FOUR:

❖ Operation, Monitoring and Optimization

- Process control and instrumentation in wastewater treatment plants
- Key performance indicators (KPIs) for treatment efficiency
- Laboratory analysis and online monitoring systems (BOD, COD, TSS, pH, turbidity)
- Troubleshooting common operational issues (foaming, bulking, odor, equipment failure)
- Preventive and predictive maintenance strategies
- SCADA and digital solutions in wastewater plant management
- **Practical case study:** Optimization of an underperforming WWTP

DAY FIVE:

❖ Best Practices, Safety, and Future Trends

- Health and safety in wastewater treatment operations
- Environmental risk management and compliance auditing
- Cost management and energy efficiency strategies
- Best practices for sustainable wastewater management
- Future trends: Smart water technologies, AI in wastewater monitoring, circular economy concepts
- Final presentation: Developing a best practice wastewater management plan

❖ Course Conclusion

❖ POST-ASSESSMENT and EVALUATION

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:



- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Gamification, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

CMCT Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

TBA as per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Group and Corporate Discounts:

- We offer group and corporate discounts on many courses. These discounts are available for clients who want to maximize their return on investment.

Individual Discounts:

- We offer individual discounts on many courses for people who are self-sponsored and make their payment in full and upfront at the time of registration

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:00	Recess (Prayer Break & Lunch)
13:00 - 14:00	Last Session

For training registrations or in-house enquiries, please contact:

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