Tel No:+97126654546 | FaxNo:+97126654182 | Email: training@cmc-me.com | www.cmc-me.com

WE092:
Biological Wastewater Treatment

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Training Description:

This intensive course will present the methodologies and laboratory techniques necessary to control the activated sludge process with an emphasis on process monitoring and trouble shooting. These approaches are equally applicable to domestic and industrial facilities. Past participants from industries such as refining, petrochemical, meat packing, food processing and pulp/paper have been successful in applying these methods to control their processes. The course will consist of lecture and demonstrations of certain laboratory procedures.

This course develops the fundamentals and applications of aerobic and anaerobic biological unit processes for the treatment of municipal and industrial wastewater. The principles of activated sludge, aeration and clarifier design, fixed film reactors, anaerobic treatment, solids handling and treatment, land treatment, and nutrient removal are presented. This course uses concepts from microbiology and the basic principles of stoichiometry, energetics, and microbial kinetics are used to support the design of biological unit processes.

Training Objectives:

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

- ✓ Apply and gain an in-depth knowledge on the operation and controlling of biological wastewater treatment processes
- ✓ Discuss the key design and operational parameters including the role and function of each plant operation and control
- ✓ Describe all processes in waste water treatment plants and analyze each role and function in the treatment train
- ✓ Analyze potential problems and possible causes in wastewater treatment processes as well as perform proper troubleshooting and corrective action in a professional manner
- ✓ Measure, analyze, evaluate and optimize the control parameters for different processes and plant performance
- ✓ Critical knowledge of the biological and chemical underpinnings used in the design and application of biological processes for water and wastewater treatment
- ✓ Apply the fundamental microbiological principles behind biological water and wastewater treatment processes
- ✓ Estimate critical design parameters for a biological treatment application
- ✓ Use stoichiometric and kinetic relationships to estimate net degradation of contaminants, consumption of electron acceptors and carbon sources, and production of cells over a biological treatment process

Training Designed for:

This course is intended for all significant aspects of biological waste water treatment for industrial wastewater compliance Managers, Supervisors, Engineers, Inspectors, Plant Managers and HSE Staff. This course is suitable for operations, inspection, maintenance and design engineers and technical staff including laboratories.

Training Program:

DAY ONE:

- Basic Activated Sludge Microbiology
- Hands on Microscopic Observation
- Process Overview and Process variations
- Process Control Strategies

DAY TWO:

- Settleometer Test
- Troubleshooting Activated Sludge Processes
- Visual Physical Observations

DAY THREE:

- Filaments and Foam control
- Solids Carryover and Settling Problems
- Dewatering and Solids Handling

DAY FOUR:

- Review of water and wastewater treatment and basics of microbiology
- Review of reactor models
- Activated sludge
- Nitrogen and Phosphorus removal
- Aerated lagoons

DAY FIVE:

- Aerobic attached processes
- Anaerobic suspended growth
- Sludge treatment
- Drinking water microbiology
- Course Conclusion
- POST-TEST and EVALUATION

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 Certificate(s):

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

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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 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.

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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