

Advanced Wastewater Operations

1.2 CECs, Wastewater Technical

You must attend the entire class to earn the CECs

Advanced Wastewater Operations also qualifies for 1.2 SHE Engineering

Optional: Must take and pass an additional written exam administered at the end of the class to earn SHE credits.

Agenda - Day 1

- 8:00 – 8:20 Registration
- 8:20 – 8:30 Housekeeping / Introduction
- 8:30 – 10:00 General Review (*Pretreatment, Clarification, Trickling Filters, RBC's*)
- 10:00 – 10:10 Break
- 10:10 – 12:00 Activated Sludge
 - Review (*Microorganisms, F:M, MCRT, Sludge age*)
 - Wasting Rates
- 12:00 – 12:30 Lunch
- 12:30 – 1:50 Nitrogen Removal
 - Nitrogen Cycle & Microorganisms
 - Operational Controls
- 1:50 – 2:00 Break
- 2:00 – 3:30 Phosphorus Removal (*Chemicals, Math*)
- 3:30 – 4:00 Day End Review and Practice Problems

Agenda - Day 2

- 8:00 – 8:20 Registration
- 8:20 – 10:20 Residual Solids Management
 - Thickening (*Gravity, DFAS, Belt Filter, Vacuum Filter*)
 - Lime Stabilization
 - Composting
 - Land Application
- 10:20 – 10:30 Break
- 10:30 – 12:00 Mechanical and Instrumentation
 - Review of HP and TDH
 - Pump Curves
 - 4 – 20 milliamps
- 12:00 – 12:30 Lunch
- 12:30 – 1:30 Mechanical and Instrumentation Continued
- 1:30 – 2:30 Laboratory
 - Laboratory Review (*TSS and BOD, GEO MEAN and Fecal Coliform*)
 - Basic Chemistry
 - QA/QC
 - QA/QC Math (*Mean, STD DEV*)
- 2:30 – 3:00 Day End Review and Practice Problems
- 3:00 – 5:00 End of Class Exam for SHE's (optional)