

Course Title: **Water Treatment Operations**

Contact Hours: 21

CEU Value: 2.1

Course Description:

This three-day course provides participants with an overview of relevant topics related to Water Treatment Operations, including regulatory and technical subjects as listed below.

Areas of study include:

- Regulations in Ontario - Ontario Drinking Water Standards, Reg. 170/03, Procedure for Disinfection of Drinking Water in Ontario, physical/chemical/microbiological parameters, sampling and testing requirements, authority notification, operator training requirements, operator duties, etc.
- Basic Chemistry Concepts - pH, acids, bases, alkalinity, hardness, oxidation/reduction, common chemicals used in water treatment, etc.
- Microbiological Principles - different types of microorganisms, bacterial structures and characteristics, waterborne diseases, coliforms and pathogens, introduction to algae, iron bacteria, Giardia and Cryptosporidium, etc.
- Sources and Characterization - surface water versus groundwater quality
- Sampling and Analysis Protocols – principles, types of samples, representative sampling, chains of custody and other QA/QC components
- Water Screening
- Basic Aeration Systems
- Coagulation and Flocculation
- Sedimentation
- Filtration Systems
- Chlorination and Disinfection
- Fluoridation
- Taste and Odour Control