

I. COURSE DESCRIPTION:

This course is intended to provide the students with sound foundation of knowledge and understanding of key concepts as related to the operation of drinking water systems. The basics as related to topics including: conversions, math, chemistry, hydraulics, electricity will be discussed first. It will be followed by topics on support systems mainly pertaining to pumps and motors and processes in water distribution and water treatment.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to:

- 1 Standards of measure and units conversions
- 2 Explain and describe water regulation
- 3 Make area and volume calculations in water systems units and devices
- 4 Define the terms in water and wastewater operations
- 5 Apply the principles of hydraulics to find flow rates and pressures and head
- 6 Define electrical terms: current, emf, and resistance and describe the relation between them
- 7 Describe the parameters of water quality and sampling for compliance and process control
- 8 Identify the basic principles of and recognize the importance of disinfection of water.
- 9 Describe the basic principles of safety as applied to water systems
- 10 Describe the main processes employed in water treatment and water distribution including wells.
- 11 Explain the processes and equipment employed in water distribution and wastewater collection systems.

III. TOPICS:

1. Public Health,
2. Water Regulation
3. Units And Math Water Quality and Sampling
4. Basic Principles
5. Water characteristics and sources
6. Disinfection
7. Water Treatment Processes
8. Sampling and Analysis
9. Equipment Basics
10. Well operations
11. Distribution systems
12. Safety

