



# WWTE 141

## Water Distribution Network System: *Design Operations and Maintenance*



**ACTVET**  
The Global Centre for  
Technics and Vocational  
Education and Training

**GInI** GLOBAL  
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for Health and Occupational Safety  
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## Course Introduction:

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For the water industry this effectively means effluent and sludge, by-products of sewage treatment, should be viewed as resources to be reused in a beneficial and sustainable manner, rather than wastes requiring disposal. The reuse of these materials involves treating them to a level appropriate for their intended reuse application and using the resulting water (termed reclaimed water) or sludge (termed bio-solids) in a sustainable manner for a beneficial purpose. Beneficial reuse is defined as the sustainable use of reclaimed water or bio-solids in a manner which provides some direct or indirect economic, social or environmental value, while still protecting the environment, public and agricultural (being stock and plant) health.

The concept of beneficial reuse is different from that of wastewater disposal to land. The primary purpose of land disposal is to discharge waste to land in a controlled manner so as not to cause pollution. In contrast, the primary purpose of beneficial reuse is to use what was previously considered "wastewater or sludge" as a resource in a beneficial and safe manner.

## Course Objectives:

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**Upon successful completion of this course, the delegates will be able to:**

- Design and analyze of new water distribution systems
- Explain the principles and pressurized flow and water distribution systems hydraulics
- Select proper valves for water distribution systems
- Employ proper methods for operation, maintenance and rehabilitation of existing water distribution systems
- Discuss the importance of reliability analysis of water network systems and learn the methods of improving system reliability and availability
- Understanding the Fundamentals of Water Distribution Systems
- Analyze existing Systems and be able to find out existing problems
- Understanding Operation, Inspection, Maintenance & Repair of Water Networks

## Who Should Attend?

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This course is intended for Municipal Engineers, Public Works Engineers, Water Distribution System Engineers, Safety Inspectors and Procurement Officers from Municipalities, and Technologists who need Understanding of Water Distribution System Design and are currently employed in the Water Distribution Management Field.

## Course Outline:

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### Day 1:

- Module (01) Water Supply System
- Module (02) Storage Facilities & Equipments

### Day 2:

- Module (03) Water Distribution System
- Module (04) Revision of Hydraulics Engineering

### Day 3:

- Module (05) Pipelines Selection & Installation
- Module (06) Distribution Storage

### Day 4:

- Module (07) Standard Operation Procedures
- Module (08) Water System Inspection, Testing & Repair

### Day 5:

- Module (09) Troubleshooting Matrix & Failure Analysis
- Module (10) Maintenance Programs for Water Networks

## Course Methodology:

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A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

## Course Certificate:

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International Center for Training & Development (ICTD) will award an internationally recognized certificate(s) for each delegate on completion of training.

## Course Fees:

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To be advised as per the course location. This rate includes participant's manual, and-  
Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

## Course Timings:

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### Daily Course Timings:

08:00 - 08:20	Morning Coffee/Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee/Tea/Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Coffee/Tea/Snacks
13:30 - 15:00	Last Session