# Water Distribution Design and Modeling Fundamentals

## Bentley OpenFlows WaterGEMS CONNECT Edition

## AGENDA

### About this course

This training begins with the fundamentals of hydraulics & water supply engineering and then takes the participants through the advanced processes of distribution network modeling including automatic model development, multi-scenarios modeling, automatic design tools, model calibration, criticality analysis, zone/DMA/PMA demarcation, pump and valve selection and lastly, generating results. This training includes an exclusive case study.

### Skills taught

Upon successful completion of this course, the participant shall be able to:

- Apply the fundamental principles of water distribution modeling;
- Gain essential knowledge for water system design, operation, and troubleshooting;
- Apply WaterCAD/WaterGEMS models to solve common water distribution system problems;
- Develop a deeper understanding of model creation and analysis using WaterCAD/WaterGEMS;
- Increase productivity by using automated approaches to complete common modeling tasks.

### Course prerequisites

The participant must be a diploma/ graduate of Civil/ Environmental/ Mechanical Engineering. Basic theoretical understanding of Fluid Mechanics, Water Supply Engineering and Hydraulics is desirable but not compulsory.

### Course language

English

### Course duration

40 Hours

### Meet the trainer

Tanay Kulkarni is a Master of Engineering (Hydraulics) and a graduate of Civil Engineering. He is also certified on 'Big Data' from Massachusetts Institute of Technology, USA. He is highly experienced Water Professional with a record of training thousands of water practitioners and engineers of the globe and helping them tackle their unique challenges using hydraulic modeling technologies. He has offered consultation to some of the World's Largest Water Utilities like Public Utilities Board- Singapore, Colombo Municipal Corporation- Sri Lanka, Department of Engineering- Bhutan, Manila Water Board and Maynilad Water Board- Philippines, Saudi Aramco- Kingdom of Saudi Arabia, Federal Electricity and Water Authority- United Arab Emirates, and many more. Previously, he was with Bentley Systems where he led as Water Solutions Consultant



Web: www.DTKHydronet.com Mail: info@DTKHydronet.com Cell: +918600935062, +919561099350, +919891386412
Reg. Office: F # 9, Serenity CHS, Ramnagar Colony, Bavdhan, Pune- 411021, Maharashtra, India

and was responsible for Asia Pacific and Middle East Regions. Tanay specializes in water mechanics, hydropower engineering, surge analysis, big data, hydraulic and hydrologic modeling, GIS. He is often invited to speak at various conferences to speak on 'water', nationally as well as internationally.

## Course Agenda

Day 1

| No. | Topics |
|---|---|
| 1 | Welcome and Introduction |
| 2 | Fundamentals of Hydraulics |
| 3 | Fundamentals of Water Supply Schemes |
| 4 | Data requirements to develop a hydraulic model |
| 5 | Developing a Hydraulic Model for a WDN |
| 6 | Validating and Calculating the results |
| 7 | Results Representation |
| 8 | Day End with Q&A |

Day 2

| No. | Topics |
|---|---|
| 1 | Introduction to Scenarios and Alternatives |
| 2 | Creating a Model Scenario |
| 3 | Introduction to Automatic Model Building Methods |
| 4 | Model Builder, Load Builder, TRex |

Day 3

| No. | Topics |
|---|---|
| 1 | Modeling Valves, Tanks and Pumps |
| 2 | Steady state and Extended Period Simulation |
| 3 | Hydraulic Network Design using Darwin Designer |
| 4 | Optimizing Isolation Valves- Location and Numbers using Criticality |

Day 4

| No. | Topics |
|---|---|
| 1 | Case Study: Rural Water Distribution Network |

Day 5

| No. | Topics |
|---|---|
| 1 | Case Study: Urban Water Distribution Network |



Web: www.DTKHydronet.com Mail: info@DTKHydronet.com Cell: +918600935062, +919561099350, +919891386412
Reg. Office: F # 9, Serenity CHS, Ramnagar Colony, Bavdhan, Pune- 411021, Maharashtra, India

## Course Fees

| City | Start Date | End Date | Timings | Venue | Cost (Inclusive of GST) | Registration |
|---|---|---|---|---|---|---|
| Pune, India | 10 Feb 2020 | 14 Feb 2020 | 10:00 - 18:00 | DTK Hydronet Solutions | Early Bird Discount upto 5th Feb: Students=Rs.18,000/-, Professionals=Rs.23,000/-. After 5th Feb, Students=Rs.20,000/-, Professionals=25,000/- | To Confirm, Pls Call us at +918149911184 |

## Admission Procedure

Course fees should be paid 100% Advance. Early-bird Discount available. For more details please visit (https://www.dtkhydronet.com/watergemstraining) Once fees are paid, you must send us an email to trainings@dtkhydronet.com with following details.

1. Name (As required to be printed on Certificate)
2. Mobile No
3.Email ID
4. Educational Qualification
5. Brief Work Experience
6. Name of Organisation

Specific Training outcome which you are looking at (we will share this information with our Faculty in advance)

## Payment Details

**All payments must be done through NEFT/ RTGS modes only.**

Account Name – DTK Hydronet Solutions
PAN – CMBPK9428F
GST No. – 27CMBPK9428F1ZX
Bank – Punjab National Bank
Branch – Kothrud Branch, Pune
Current Account No. – 3974002100017523
IFSC Code – PUNB0397400

Note: After Completion of this course the participants will be eligible for 'Lifetime Access' to BI Press Subscription along with a Certificate of Accomplishment from Bentley Institute. For more details pls visit: https://www.ebook.bentley.com/



Web: www.DTKHydronet.com Mail: info@DTKHydronet.com Cell: +918600935062, +919561099350, +919891386412
Reg. Office: F # 9, Serenity CHS, Ramnagar Colony, Bavdhan, Pune- 411021, Maharashtra, India