

GenAI for the Water Sector

A Practical 5-Hour Certificate Course for Water & Wastewater Professionals

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In collaboration with The Water Tower

Course Overview

This five-hour course provides water sector professionals with a practical understanding of Generative AI (GenAI) and how it can be safely applied throughout utility operations. Designed for participants with little or no AI experience, the course combines clear explanations, real utility examples, demonstrations, and hands-on exercises. Participants will learn how GenAI works, how to use it responsibly, write effective prompts, build simple AI assistants, and understand emerging technologies such as Retrieval Augmented Generation (RAG), chatbots, agents, and agentic workflows.

Course Highlights

- ✓ No technical background required
- ✓ Hands-on exercises throughout the course
- ✓ Real water utility examples and demonstrations

Module 1 – Why AI Matters

- Why AI is transforming the water sector
- Traditional AI versus Generative AI
- AI as an intelligence layer
- Five core AI capabilities
- Utility examples across every department
- AI as a co-pilot that augments human expertise

Module 2 – Understanding Generative AI

- How Large Language Models work
- Structured versus unstructured data
- How AI generates responses
- The RTCO Prompt Framework
- Context windows and tokens
- Hands-on prompt writing

Module 3 – Safe Use, Security & Governance

- AI account tiers and enterprise security
- Data privacy and responsible use
- Governance for critical infrastructure
- NIST, EPA and CISA guidance
- Human oversight and verification
- Developing an AI governance mindset

Module 4 – AI Capabilities & Practical Applications

- Retrieval Augmented Generation (RAG)
- OCR and document intelligence
- Image analysis and multimodal AI
- Workflow automation
- Real utility use cases
- Building knowledge assistants

Module 5 – Chatbots, Agents & The Future of Work

- Building no-code chatbots
- Understanding agents and agentic workflows
- Automation opportunities
- Hands-on AI exercises
- Utility AI roadmap
- Future trends

Who Should Attend

Operators, engineers, laboratory professionals, maintenance staff, customer service teams, supervisors, managers, executives, IT professionals, consultants, board members, and anyone interested in understanding how Generative AI will transform the future of the water sector.

Learning Outcomes

- Understand how Generative AI works
- Use AI safely within a utility environment
- Write effective prompts
- Understand AI security and governance
- Build simple AI assistants using no-code tools
- Identify opportunities for AI across your organization