



Module 5

Certificate Program

EFFECTIVE UTILITY MANAGEMENT

Course Syllabus

Effective Utility Management Module 5

Course Overview

This course is designed for water industry professionals who are current or future supervisors and managers within water and wastewater utilities. This course provides students with planning and management tools they will be able to use within their organizations.

This course is conducted as an online, self-paced workshop. The course material consists of workbooks which have been split into each of the lessons. Course completion requires that the student successfully complete all components of the five individual lessons presented in the course.

Upon successful completion of the course requirements, students will receive a certificate of completion for 2.0 CEUs (20 contact hours) for Intermediate Utility Planning & Management (EUM - Module 5), which is applicable toward certificates in **Utility Planning and Management** and **Effective Utility Management** from American Water College.

Required Text

Workbook: *Managing the Water and Wastewater Utility*
Included with enrollment

Educational Objectives

- To provide students with the principles of operations management
- To provide students with an understanding of maintenance management
- To provide students with an understanding of privatization of public utilities
- To provide students with an understanding of project management
- To provide students with the principles of schedule creation
- To provide students with an overview of management related software that can be used to make their time more efficient

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Evaluation

Students will be quizzed at the end of each lesson to ensure that the learning objectives have been met. Students must complete all course material including videos and quizzes. Please contact our office with any questions.

Support

Students can ask questions of the instructor and/or contact our student support staff with any course-related, content-related or technology-related inquiries. Our office hours are Monday-Thursday, 9 to 5 CT, and Friday 9 to 12 CT.

Contact Info

Phone Number: (661) 874-1655

General Course Inquiries: Info@americanwatercollege.org

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Lesson 1 – Operations Management

Summary of This Lesson

At the end of the day what matters for a treatment plant is how well it operates. This lesson will cover the necessary principles for students to be able to manage the effectiveness of their utility. Since staff is such an integral part of operations, students will become familiar with some techniques for setting up staff to succeed. Then, students will learn about the technical side of operations.

Lesson Objectives

Upon completion of this lesson, students will gain an understanding of:

- The Mission of Operations
 - Worker safety
 - Customer expectations
 - Regulatory compliance
 - Cost effectiveness
- Taking Charge of Operations
- The Technical Side of Operations
- Accomplishing the Mission with Excellence

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Lesson 2 – Maintenance Management

Summary of This Lesson

Maintaining the utilities assets in good working order is imperative for meeting the utility's goal of providing good quality water at a reasonable price. This lesson will teach students how to manage the maintenance activities of their water and wastewater utilities in a proactive manner. In addition to the principles presented, this lesson will include a plan to move your maintenance plan from a reactive plan to a proactive plan.

Lesson Objectives

Upon completion of this lesson, students will gain an understanding of:

- How to take control of a maintenance program
- How to use the FMEA to identify equipment, processes or systems that are likely to fail
- How to schedule corrective actions to address critical assets to ensure system reliability
- How the labor requirements for maintenance change as maintenance plans get implemented

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Lesson 3 – Privatization

Summary of This Lesson

This lesson covers the process and reasoning behind privatization of water provision. Four forms of privatization are presented from a neutral viewpoint so that students will be able to evaluate whether or not their utility could benefit from private involvement.

Lesson Objectives

Upon completion of this lesson, students will gain an understanding of:

- The four main types of privatization
 - ✓ Contract operations
 - ✓ Asset Transfer
 - ✓ Investor-owned utility
 - ✓ Outsourcing
- The reasons privatization might occur
- How to improve efficiency with competitive pricing

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Lesson 4 – Capital Improvement Management

Summary of This Lesson

When we talk about managing capital improvement, we're really talking about the discipline of project management. This lesson provides students with an introduction to the process and key principles of project management. Students will learn how to use those key principles to improve how they manage capital improvement projects.

Lesson Objectives

Upon completion of this lesson, students will gain an understanding of:

- The major principles of project management
- Common misconceptions about project management
- The phases common to all projects
- The project manager's role
- How to plan a project

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Lesson 5 – Construction Design Process Management

Summary of This Lesson

Risk management is the systematic process of identifying, analyzing, and responding to project risk. This lesson will walk students through the process of creating a project risk plan. A comprehensive project risk plan allows you to be proactive regarding the many things that can go wrong during the project.

Lesson Objectives

Upon completion of this lesson, students will gain an understanding of:

- Potential risks associated with utility projects
- The steps involved in creating a risk management plan
- Different ways to plan for risks to the project
- How to plan a project using the work breakdown structure

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Lesson 6 – Construction Process Management

Summary of This Lesson

In the real world, most projects you're given to manage come with a predetermined end date. The start date typically is constrained by events out of your control as well. This leads to one of the bigger issues with project planning: scheduling. This lesson will teach students how to build effective project schedules that will allow you to be as flexible as possible given their projects constraints. They will also learn some ways to deal with deviations from the planned schedule.

Lesson Objectives

Upon completion of this lesson, students will gain an understanding of:

- How to perform schedule computations
- How to create a workable schedule
- The key characteristics of a project control system
- How to take corrective action when things go awry
- How and when to evaluate projects

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Lesson 7 – Leveraging Information Technology

Summary of This Lesson

There has been a big push toward integrated software applications. Utilities want to combine the many different computer programs that are used to manage the various departments into one common application or platform. This lesson covers the main characteristics of enterprise software as well as its evaluation and implementation at water utilities.

Lesson Objectives

Upon completion of this lesson, students will gain an understanding of:

- How water utilities can benefit from the use of enterprise software
- How to evaluate enterprise software
- How to determine if a work process can benefit from software
- How to implement new software at a water utility