

Water Treatment Math

Course Overview

This course is designed to acquaint students with the math, formulas and calculations used in water treatment, storage and distribution. Course material consists of reading assignments, video lectures, review questions, study problems and lesson quizzes.

Course completion requires that the student successfully complete each component of each individual lesson. Review questions and written assignments must be submitted either online or uploaded in a Word document for the professor's review. Lesson quizzes have a minimum passing score of 70%.

Upon successful completion of the course requirements, students will receive a certificate of completion for 3.6 CEUs (36 contact hours) for the Water Treatment Math course, which is applicable toward a Certificate in Water Treatment Technology from American Water College.

Required Texts

Textbook: *Basic Science Concepts and Applications, Principles and Practices of Water Supply Operations* series

Edition: Fourth Edition

Author: Nicholas G. Pizzi

ISBN: 1-58321-778-9

Workbook: *Basic Science Concepts and Applications Student Workbook, Principles and Practices of Water Supply Operations* series

Edition: Fourth Edition

ISBN: 1-58321-799-1

Educational Objectives

- To provide a foundational understanding of powers and scientific notation
- To demonstrate dimensional analysis
- To provide students with an understanding of rounding, estimating, and solving for an unknown value
- To demonstrate ratios, proportions, averages and percentages
- To provide students with an understand of linear measurements
- To provide a foundational understanding of area and volume measurement calculations
- To demonstrate conversions

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- To demonstrate graphs and tables and their uses in water treatment
- To provide students with a foundational understanding of calculating per capita water use, domestic water use, and industrial water use
- To demonstrate calculating average daily flow, surface overflow and weir overflow rates
- To provide a foundational understanding of filter loading and filter backwash rates
- To demonstrate mudball calculation
- To demonstrate detention time calculations
- To demonstrate well problem calculations