

San Bernardino Valley College
 Board of Trustees: 01/21/2016
 Curriculum Approval: 11/23/2015
 Effective Date:
 Unique Course Identification Number:
 TOP Code: 0958.00 - Water and
 Wastewater Technology*
 C-ID:



San Bernardino
 Valley College

I. CATALOG DESCRIPTION:

A. Department Information:

Division: Applied Technology, Transportation & Culinary Arts
 Department: WATER SUPPLY TECHNOLOGY
 Course ID: WST 601
 Course Title: Test Review for Water Distribution D1
 Units: 0
 Lecture: 0.5 contact hour(s) per week
 8 - 9 contact hours per semester
 Prerequisite: None

B. Catalog Description:

This non-credit course is designed to familiarize students with the expected Range of Knowledge (ROK) required to pass the State Water Resources Control Board (SWRCB) Distribution Operator test at level D1. The review topics include distribution system operations, disinfection, related mathematics and safety. The course may also be used to earn continuing education units required to renew the certificate.

C. Schedule Description:

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II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 99

III. COURSE OBJECTIVES FOR STUDENTS:

Upon successful completion of the course the student should be able to:

- A. Identify the Range of Knowledge (ROK) required to successfully pass the California State Water Resources Control Board certification exam at the D1 level
- B. Identify reliable sources of information which contain accurate knowledge about Water Distribution
- C. Identify and organize the information and facts to be memorized.
- D. Apply the principles learned to solve common problems encountered by a distribution operator

IV. COURSE CONTENT:

- A. Disinfection
 1. Purpose
 2. Techniques to disinfect wells, storage tanks and pipelines
 3. Measure total chlorine
 4. Dechlorination techniques
 5. Calculate volume of storage container and disinfectant dosage
- B. Distribution System Design/Hydraulics

1. Identify tree, arterial, dead end and grid design
 2. Relation between pressure and elevation
 3. Recognize condition which cause backflow or cross-connection
 4. Service connection materials and fittings
 5. Corrosion control methods
 6. Calculate flow velocity, flow rate, volume of pipes
 7. Convert units of volume, area, time, pressure, head, flow, and velocity
 8. Read and interpret pressure gauge
- C. Drinking Water Regulations, Management and Safety
1. Safe Drinking Water Act and its major components
 2. Total Coliform Rule reporting and sampling requirements
 3. Cal-OSHA safety regulations
 4. Knowledge of acute violation and Public Notification Rule
 5. Sampling techniques for bacteriological, organic, inorganic constituents
 6. Trenching safety, fire safety, chemical handling and Asbestos Cement pipe handling
- D. Equipment Operation, Maintenance and Repair
1. Pumps
 2. Meters
 3. Hydrants
 4. Valve identification, installation and testing
 5. Recognition of abnormal operating condition
- E. Water Mains and Piping
1. Pipe flushing procedure
 2. Excavation, installation and repair
 3. leak detection and repair
- F. Water Quality and Water Sources
1. Pathogenic organism
 2. Coliform bacteria types, analysis method and interpretation of results
 3. Consequences of high nitrates in water
 4. pH, conductivity, hardness and turbidity

V. METHODS OF INSTRUCTION (May include any, but do not require all, of the following):

- A. Lecture
- B. Guest speakers
- C. Use of films, videotapes, or other media
- D. Use of written materials: texts, journals, etc.
- E. Classroom demonstrations
- F. Guided practice
- G. Instructor generated handouts

VI. TYPICAL OUT-OF-CLASS ASSIGNMENTS:

- A. Reading assignments are required and may include (but are not limited to) the following:
Read the chapter on disinfection. Be prepared to discuss the advantage and disadvantage of the three methods used to disinfect newly installed water mains.
- B. Writing assignments are required and may include (but are not limited to) the following:
List the types of water storage facilities commonly used to store potable water. Be prepared to present the advantages and disadvantages of each type of facility to your class.
- C. Critical thinking assignments are required and may include (but are not limited to) the following:
A 32-foot diameter tank, 20-foot tall is 60% full. Calculate the amount of water, in gallons, contained in the tank.

VII. METHODS OF EVALUATION

- A. Examinations
- B. Written papers or reports
- C. Quizzes
- D. Cumulative finals or certifications

VIII. TYPICAL TEXT(S):

- A. Kerri, Kenneth Water Distribution System Operation and Maintenance. 6th ed. California State University, Sacramento, 2012.
- B. Lauer, William C Water Distribution Operator Training Handbook. 4th ed. American Water Works Association, 2013.

IX. OTHER SUPPLIES REQUIRED OF STUDENTS:

- A. Scientific Calculator