

Prepared by the Department of Natural Sciences & Life Fitness  
Date of Departmental Approval: 2/5/07  
Date approved by Curriculum and Programs: November 28, 2007

Effective: Fall 2007

**1. Course Number: ENV146**  
**Course Title: Water Supply**

**2. Description:** This course is a study of the principles and practice of water supply. This course will provide an introduction to the physical and chemical principles of drinking water supply, the functioning of related equipment and support systems and the responsibilities required to safely operate and maintain a water supply system. This course may be taken for four CEU's by current employees in the Waterworks industry.

**3. Student Learning Outcomes (instructional objectives; intellectual skills):**

Upon successful completion of this course, students are able to do the following:

- Define and evaluate water supply issues and technologies, including water treatment processes, filtration, and disinfection.
- Explain a basic framework for the practical application of science and mathematics to assess and solve water supply problems
- Explain relevant terms such as fluoridation, iron and manganese control, and control of corrosion and scaling

**4. Credits:** 3 credits

**5. Satisfies General Education Requirement:** No

**6. Prerequisites:** ENV118 and ENV140

**7. Semester(s) Offered:** Spring

**8. Suggested General Guidelines for Evaluation:** Students will be graded using homework assignments, classroom activities, tests, and a final exam.

**9. General Topical Outline (Optional):**

- I. Water Treatment Processes
- II. Preliminary Treatment, Coagulation and Flocculation
- III. Sedimentation Basins and Clarifiers
- IV. Filtration
- V. Disinfection
- VI. Fluoridation
- VII. Control of Corrosion and Scaling
- VIII. Iron and Manganese Control
- IX. Lime Softening
- X. Ion Exchange Processes
- XI. Adsorption
- XII. Aeration
- XII. Membrane Processes
- XIII. Treatment Plant Instrumentation and Control