

STATUS: A

COMMON COURSE NUMBER: EVS 2005

COURSE TITLE: Water Supply and Waste Water Disposal

CREDIT HOURS: 3

CONTACT HOURS BREAKDOWN:

Lecture/Discussion 48

Lab 00

Other 00

Contact Hours/Week 3

CATALOG COURSE DESCRIPTION:

Prerequisite: None

Co requisite: None

A single course covering the sources, treatment and distribution of potable water and the collection, treatment and disposal of wastewater; Field trips include inspection of local facilities.

General Education Requirements - Associate of Arts Degree, meets Area(s):

General Education Requirements - Associate in Science Degree, meets Area(s):

UNIT TITLES:

1. Production of Potable Water
2. Treatment of Potable Water
3. Distribution of Potable Water
4. Collection of Wastewater
5. Treatment and Disposal of Wastewater

I. Course Overview:

Upon successful completion of this course, the students should be able to describe the characteristics and fundamental concepts of the production, treatment and distribution of potable water and the collection, treatment and disposal of wastewater according to accepted professional standards with a high degree of accuracy.

II. Units:

Unit 1. Production of Potable Water

General Outcome:

- 1.0 The students should be able to demonstrate a proficiency in describing the fundamental concepts relating to the production of potable water.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 1.1 Identify and describe the factors relating to the quantity and quality of water supplies.
- 1.2 Identify and describe the principal factors affecting rainfall, runoff and ground water.
- 1.3 Describe the financial considerations affecting the facilities required to produce a dependable supply of potable water.

Unit 2. Treatment of Potable Water

General Outcome:

2.0 The students should be able to demonstrate a proficiency in describing the fundamental concepts relating to the treatment of potable water for public consumption.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 2.1 List and describe the processes and equipment required for clarification, sedimentation and coagulation of potable water.
- 2.2 Identify and describe the processes and equipment required for filtration and chlorination of potable water.
- 2.3 Describe various methods of miscellaneous treatment including the softening of hard water.

Unit 3. Distribution of Potable Water

General Outcome:

3.0 The students should be able to demonstrate a proficiency in describing the fundamental concepts relating to the distribution of potable water to the public.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 3.1 Describe and identify types of aqueducts and water pipes.
- 3.2 Describe and identify various types of pumps and pumping stations used to distribute water for public supplies.
- 3.3 Describe storage facilities used for public supply including the economics of ground storage versus elevated storage.

Unit 4. Collection of Wastewater

General Outcome:

4.0 The students should be able to demonstrate a proficiency in describing the fundamental concepts relating to the collection of wastewater.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 4.1 Identify and describe types of sewer pipes and appurtenances.
- 4.2 Prepare simple designs and construction schedules of sewer systems.
- 4.3 Describe various methods and equipment used to clean and maintain sewers in operating condition.

Unit 5. Treatment and Disposal of Wastewater

General Outcome:

5.0 The students should be able to demonstrate a proficiency in identifying the fundamental concepts relating to the treatment and disposal of wastewater.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

- 5.1 Identify and describe the processes and equipment used for primary and secondary treatment of sewage.
- 5.2 Identify and describe the processes and equipment used to stabilize and dispose of sludge.
- 5.3 Identify and describe the methods and equipment required for the disposal of treated effluent through ocean outfalls, diffusal wells and miscellaneous systems.