



Wastewater Treatment Review (21 hours)

Course Syllabus

Purpose

This course covers information relevant to wastewater operators and is designed to be used by wastewater treatment operators as continuing education.

Topics

Characterization of Wastewater
Sampling Wastewater
Preliminary Treatment
Primary Treatment
Wastewater Ponds
Activated Sludge
Trickling Filters
Rotating Biological Contactors
Wastewater Disinfection
Sludge Thickening
Anaerobic Sludge Digestion
Sludge Dewatering
Pumps and Motors

CEUs (Contact Hours)

Upon completion of this course, you will receive a certificate for 2.1 CEUs (21 contact hours).

Completion Requirements

In order to receive [IACET CEU](#) credit for this course, you must complete the following:

- Complete each individual lesson module by watching the video lecture, completing the lesson handout, and passing the lesson quiz.

Once you have completed all of these elements, your course completion certificate will be automatically placed into your learning account for printing/downloading. It will remain in your learning account even after your course access has expired.

Learning Objectives

Characterization of Wastewater

Upon completion of this lesson the student will be able to:

- Define wastewater characterization key vocabulary words
- Recall the three main classifications used to describe the source of wastewater
- Describe the key details about Physical Characteristics of wastewater
- Describe the key details about Chemical Characteristics of wastewater
- Describe the key details about Biological Characteristics of wastewater

Sampling Wastewater

Upon completion of this lesson the student will be able to:

- Define wastewater sampling vocabulary words
- Explain the reasons for sampling
- Discuss the Equipment used for sampling

Preliminary Treatment

Upon completion of this lesson the student will be able to:

- Define preliminary treatment vocabulary words
- Discuss what the purpose of preliminary treatment is
- Express preliminary treatment components
- Discuss the benefits of pre-aeration of wastewater

Primary Treatment

Upon completion of this lesson the student will be able to:

- Define primary treatment vocabulary words
- Discuss the purpose of primary treatment
- Discuss the components of primary treatment and how they operate
- Recall safety associated with the primary treatment

Wastewater Ponds

Upon completion of this lesson the student will be able to:

- Define pond treatment vocabulary words
- Discuss the purpose of pond treatment
- Express what is involved in the pond treatment process
- Discuss the classification of waste treatment ponds
- Recall the advantages and disadvantages of pond treatment

Activated Sludge

Upon completion of this lesson the student will be able to:

- Define activated sludge vocabulary words
- Discuss the Activated Sludge Process
- Recall the System Components

Trickling Filter Review

Upon completion of this lesson the student will be able to:

- Define activated sludge vocabulary words
- Discuss trickling filter designs
- Describe the process and equipment

Rotating Biological Contactors

Upon completion of this lesson the student will be able to:

- Define Rotating Biological Contactors vocabulary words
- Describe the Rotating Biological Contactors equipment and process control
- Recall common troubleshooting situations

Wastewater Disinfection Review

Upon completion of this lesson the student will be able to:

- Define disinfection vocabulary words
- Discuss the purpose of disinfection
- Discuss breakpoint chlorination
- Identify the hazards of chlorine
- Discuss safe handling practices of chlorine

Sludge Thickening Review

Upon completion of this lesson the student will be able to:

- Define Sludge Thickening vocabulary words
- Define the principle of operation and main components of gravity thickeners
- Define the principle of operation and main components of gravity belt thickening
- Define the principle of operation and main components of dissolved air floatation

Anaerobic Sludge Digestion

Upon completion of this lesson the student will be able to:

- Define anaerobic sludge digestion vocabulary words
- Discuss how to control the sludge digestion process
- Recall the normal operating parameters of a healthy digester
- Discuss how to identify and correct an “upset” or “sour” digester

Sludge Dewatering Review

Upon completion of this lesson the student will be able to:

- Define Sludge Dewatering vocabulary words
- Define the principles of operation and factors affecting belt press operation
- Define the principles of operation and factors affecting centrifuge operation

Pumps and Motors

Upon completion of this lesson the student will be able to:

- Define pumps and motors vocabulary words
- Recall pump types covered in the lesson
- Discuss proper pump operation

Support

Students can contact our student support staff with any course-related, content-related, or technology-related inquiries.

Our office hours are Monday-Thursday, 9-5 CT, and Friday 9-12 CT.

Contact Info

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General Course Inquiries: Info@americanwatercollege.org