Class "B" Wastewater Operators Training

Common Course Syllabus

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OFFICE HOURS: TBA SEMESTER: Fall 2014

I. COURSE NAME AND DESCRIPTION, CREDIT:

CLASS "B" WASTEWATER OPERATORS TRAINING CERTIFICATE OF COMPLETION

This course prepares the student for the Class "B" Wastewater License State Exam, as well as, provides the student with the operational skills necessary to safely operate and maintain advanced wastewater treatment facilities. Topics to be covered include problem solving, safety practices and mathematical calculations relating to wastewater treatment process control. Additional topics covered include teamwork, communication, motivation and evaluation. Successful completion of this course: requires a grade of "C" or better as evidenced by the final exam; culminates in the receipt of a certificate of completion; and satisfies the Florida Department of Environmental Protection's course prerequisite for taking the State Wastewater Class "B" Exam. The course will be a combination of lecture, demonstration, and plant visitation.

II. PREREQUISITES FOR THIS COURSE:

- Possession of a valid Class "C" Wastewater License, or successful completion of a Class "C" Wastewater Operators course.
- Possession of a High School Diploma or GED.

III. GENERAL COURSE INFORMATION: Topic Outline

- Operator Responsibilities
- Odor Control
- Filtration
- Laboratory Procedures
- Advanced Nutrient Removal Techniques
- Treatment Plant Calculations
- Membrane Treatment
- Reuse Systems
- Wastewater Regulations
- Plant Supervision

IV. LEARNING GOALS AND ASSESSMENT:

At the conclusion of this course, students will be able to demonstrate the following course competencies:

LEARNING GOALS	<u>ASSESSMENT</u>
Students will identify, evaluate and solve problems related to plant operations and wastewater	Quiz, end of course exam
treatment.	
Students will recognize the need for and apply appropriate safety procedures.	Quiz, end of course exam
Students will apply team building, communication, and motivational skills.	Quiz, end of course exam
Students will identify the legal requirements of local and federal legislation such as, wastewater	Quiz, end of course exam
regulations.	
Students will recognize the importance of practicing effective laboratory procedures.	Quiz, end of course exam
Students will practice effective oral and written communications skills.	Quiz, end of course exam
Students will identify and apply the guidelines of plant maintenance.	Quiz, end of course exam

V. STUDENT REQUIREMENTS:

- Students are required to attend all classes, and any scheduled plant visitations.
- The Minimum attendance is 106 class hours, any less will result in an incomplete and no certificate will be issued.
- The student is responsible for knowing all materials covered during any absence.
- The student is required to complete all assigned reading and writing assignments.
- During this course, there will be four quizzes and one final exam.
- Exams will be given at assigned class start times.
- The time limit for chapter quizzes is one hour.
- The time limit for the final exam is two and one half hours.

VII. GRADING POLICY:

- Each student's final course average will be weighted as follows: Quizzes 10 %; Final Exam 90%
- A minimum grade of 70 on the final is required to pass the class and receive a certificate of completion.
- Scoring Range:

A: 90 - 100

B: 80 - 89

C: 70 -79

D: 60 - 69

F: Below 60

VIII. REQUIRED COURSE MATERIALS:

<u>"Advanced Waste Treatment (A Field Study Training Program)"</u>; Fifth Edition. Office of Water Programs, College of Engineering and Computer Science, California State University, Sacramento

<u>"Utility Management (A Field Study Program)"</u>; Office of Water Programs, College of Engineering and Computer Science, California State University, Sacramento

VIV. ADDITIONAL RESOURCES:

"Operation of Wastewater Treatment Plants (A Field Study Training Program)"; Volume 1, Seventh Edition. Office of Programs, College of Engineering and Computer Science, California State University, Sacramento

"Operation of Wastewater Treatment Plants (A Field Study Training Program)"; Volume 2, Seventh Edition. Office of Water Programs, College of Engineering and Computer Science, California State University, Sacramento

"Operation and Maintenance of Wastewater Collection Systems (A Field Study Training Program)"; Volume 1, Office of Water Programs, College of Engineering and Computer Science, California State University, Sacramento

"Operation and Maintenance of Wastewater Collection Systems (A Field Study Training Program)"; Volume 2, Office of Water Programs, College of Engineering and Computer Science, California State University, Sacramento.

The Florida Department of Environmental Protection Web site for Rules and Regulations. <u>Florida DEP Water Resource</u>

<u>Management Rules by Program http://www.dep.state.fl.us/water/rulesprog.htm#ww</u>

X. COURSE SCHEDULE:

Class Day	Topic	Required Reading
Day 1	Odor Control	Advanced Waste Treatment
		Chapter 1
Day 2	Activated Sludge (Pure Oxygen	Chapter 2
	Plants and Operational Control	
	Devices)	
Day 3	Residuals Solids Management	Chapter 3
Day 4	Quiz / Solids Removal From	Chapters 1-3 / Chapter 4
	Secondary Effluents	
Day 5	Phosphorus Removal	Chapter 5
Day 6	Phosphorus Removal /	Chapter 5 / Chapter 6
	Nitrogen Removal	
Day 7	Nitrogen Removal	Chapter 6
Day 8	Plant Visit	TBA
Day 9	Quiz / Enhanced Biological	Chapters 4-6 / Chapter 7
	(Nutrient) Control	
Day 10	Enhanced Biological (Nutrient)	Chapter 7
	Control	
Day 11	Wastewater Reclamation and	Chapter 8
	Reuse	
Day 12	Wastewater Reclamation and	Chapter 8
	Reuse	
Day 13	Instrumentation and Control	Chapter 9
	Systems	
Day 14	Instrumentation and Control	Chapter 9
D 45	Systems	mp A
Day 15	Plant Visit	TBA
Day 16	Quiz/ Treatment Plant Math	Chapters 7-9 / Handout
Day 17	Plant Trouble Shooting	Handout
Day 18	DEP Rules and Regulations	Handout
Day 19	DEP Rules and Regulations	Handout
Day 20	Plant Supervision	Utility Management , Chapters
- y	-	1-4
Day 21	Plant Supervision	Utility Management , Chapters
•		5-9
Day 22	Plant Supervision	Utility Management, Chapters
		10-14
Day 23	Quiz / Course Review	Treatment Plant Math, Trouble
		Shooting, Utility Management
		1-14
Class Day	Topic	Required Reading

Day 24	Course Review	Chapters 1-9, all covered
		materials
Day 25	Course Review	Chapters 1-9, all covered
		materials
Day 26	Course Review	Chapters 1-9, all covered
		materials
Day 27	Final Exam	Chapters 1-9, all covered
		materials