



COURSE OUTLINE: OEL866 - WATER TREATMNT3 AND4

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Approved: Lori Crosson, Director, E-Learning and Continuing Education

Course Code: Title	OEL866: WATER TREATMENT CERT LEVEL III AND IV
Program Number: Name	
Department:	DISTANCE EDUCATION
Semesters/Terms:	20S, 20F, 21W
Course Description:	The purpose of this course is to present advanced knowledge and practices, theories and applications relevant to sources of water supply, treatment processes, quality parameters and plant operations. Topics including disinfection, water softening, fluoridation, iron and manganese removal and water stabilization will be discussed in more detail and depth. This will prepare students to write higher level certification examinations.
Total Credits:	4
Hours/Week:	4
Total Hours:	60
Prerequisites:	There are no pre-requisites for this course.
Corequisites:	There are no co-requisites for this course.
Course Evaluation:	Passing Grade: 50%, D
Books and Required Resources:	Water and Wastewater Technology by Mark J. Hammer and Hammer Junior Publisher: Prentice Hall, Edition: 7th edition ISBN: 0135114047

Course Outcomes and Learning Objectives:	Course Outcome 1	Learning Objectives for Course Outcome 1
	Water quality and regulation introduction	-Describe the water quality parameter and identify various types of water treatment processes. -Describe the water regulation and specifically related to the water quality standards and operation of water plants
	Course Outcome 2	Learning Objectives for Course Outcome 2
	Coagulation and Flocculation	-Understand the principle of coagulation and flocculation and factors affecting these processes
	Course Outcome 3	Learning Objectives for Course Outcome 3
	Sedimentation	-Explain the principle of settling as applicable to sedimentation tanks and solid contact units and calculate operating parameters
	Course Outcome 4	Learning Objectives for Course Outcome 4
	Filtration	-Discuss the importance of filtration and basic components in producing desired quality water and describe filter operation and trouble shooting
	Course Outcome 5	Learning Objectives for Course Outcome 5



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	Disinfection	-Define disinfection and name various methods. -Apply the CT method to determine the efficiency of disinfection	
	Course Outcome 6	Learning Objectives for Course Outcome 6	
	Water softening	-Understand the chemistry of water softening and work out the chemical dosages for lime soda ash process	
	Course Outcome 7	Learning Objectives for Course Outcome 7	
	Iron and manganese removal	-Explain the reasons for removal of iron and manganese and describe commonly used methods for their removal	
	Course Outcome 8	Learning Objectives for Course Outcome 8	
	Fluoridation and Taste and odour removal	-Describe water quality as pertains to taste and odour control and its relationship to the consumer acceptability	
	Course Outcome 9	Learning Objectives for Course Outcome 9	
	Stabilization	-Define water stabilization and calculate corrosive index	
Evaluation Process and Grading System:	Evaluation Type	Evaluation Weight	
	TESTS (3)	100%	
Date:	March 9, 2020		
Addendum:	Please refer to the course outline addendum on the Learning Management System for further information.		

