



COURSE OUTLINE: OEL871 - WASTEWTR COLLECT 1&2

Prepared: Subhash Verma, P. Eng.

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

Course Code: Title	OEL871: WASTEWATER COLLECTION LEVEL 1 AND II																				
Program Number: Name																					
Department:	DISTANCE EDUCATION																				
Semesters/Terms:	20S, 20F, 21W																				
Course Description:	This course presents basic knowledge and practices, and application relevant to public health, wastewater flows and characteristics, basic treatment processes, system components, sewer mains, lift stations, pumps and pumping, manholes and wastewater collection operations. It is assumed that students have already passed operator-in-training certification examination or equivalent. Related concepts in math, hydraulics, equipment, safety legislation are reinforced.																				
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.																				
General Education Themes:	Science and Technology																				
Course Evaluation:	Passing Grade: 50%, D																				
Books and Required Resources:	Basic Environmental Technology by Jerry A. Nathanson Publisher: Pearson Canada, Edition: 6th Edition ISBN: 284014-9																				
Course Outcomes and Learning Objectives:	<table><tr><th>Course Outcome 1</th><th>Learning Objectives for Course Outcome 1</th></tr><tr><td>understand public health issues related to wastewater collection</td><td>Examine the public health issues associated with the operation of a wastewater collection system, including testing and water quality parameters.</td></tr><tr><th>Course Outcome 2</th><th>Learning Objectives for Course Outcome 2</th></tr><tr><td>Examine wastewater flow and characteristics</td><td>Apply hydraulic concepts such as rates of flow, detention time, pumping head, scouring velocity as applicable to wastewater collection</td></tr><tr><th>Course Outcome 3</th><th>Learning Objectives for Course Outcome 3</th></tr><tr><td>Describe wastewater collection components</td><td>perform safety procedures and use equipment required to safely operate a wastewater collection system</td></tr><tr><th>Course Outcome 4</th><th>Learning Objectives for Course Outcome 4</th></tr><tr><td>Describe wastewater treatment</td><td>Differentiate different sources of sewage and wastewater quality</td></tr><tr><th>Course Outcome 5</th><th>Learning Objectives for Course Outcome 5</th></tr><tr><td></td><td></td></tr></table>	Course Outcome 1	Learning Objectives for Course Outcome 1	understand public health issues related to wastewater collection	Examine the public health issues associated with the operation of a wastewater collection system, including testing and water quality parameters.	Course Outcome 2	Learning Objectives for Course Outcome 2	Examine wastewater flow and characteristics	Apply hydraulic concepts such as rates of flow, detention time, pumping head, scouring velocity as applicable to wastewater collection	Course Outcome 3	Learning Objectives for Course Outcome 3	Describe wastewater collection components	perform safety procedures and use equipment required to safely operate a wastewater collection system	Course Outcome 4	Learning Objectives for Course Outcome 4	Describe wastewater treatment	Differentiate different sources of sewage and wastewater quality	Course Outcome 5	Learning Objectives for Course Outcome 5		
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	Consider sewer main operation	Examine how the effect of high strength wastewater may adversely affect a sewage collection system						
	Course Outcome 6	Learning Objectives for Course Outcome 6						
	Understand the role of lift stations	Identify the basic components of a wastewater collection system, gravity and pressure mains, lift stations, manholes and cleanouts						
	Course Outcome 7	Learning Objectives for Course Outcome 7						
	Apply theory of hydraulics in wastewater management	Apply hydraulic concepts such as rates of flow, detention time, pumping head, scouring velocity as applicable to wastewater collection						
	Course Outcome 8	Learning Objectives for Course Outcome 8						
	Identify equipment used in wastewater management	perform safety procedures and use equipment required to safely operate a wastewater collection system						
Evaluation Process and Grading System:	<table><tr><td>Evaluation Type</td><td>Evaluation Weight</td></tr><tr><td>Final Test</td><td>50%</td></tr><tr><td>Tests 2</td><td>50%</td></tr></table>		Evaluation Type	Evaluation Weight	Final Test	50%	Tests 2	50%
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Final Test	50%							
Tests 2	50%							
Date:	March 9, 2020							
Addendum:	Please refer to the course outline addendum on the Learning Management System for further information.							

