Course Title: Secondary Treatment and Biological Nutrient Removal

Training Goal: Lesson presents an overview of wastewater treatment, it's origins and purpose, the fundamental principles of secondary treatment, aeration, and the process and process control of biological nitrogen and phosphorus removal.
Attendee will learn the the science behind the biological degradation of carbon and the metabolism of nitrogen and phosphorus, and the process control factors that can be applied.

Subject	Outline	Start Time	End Time
Wastewater 101		0	0:30
	Origins and purpose of wastewater treatment Treatment plant layout and processes		
Science of biological growth and settling		0:30	1:15
	Biological Growth Curves, Coefficients, Design Criteria Setlling, types I- IV, and Clarifiers		
Aeration		1:15	2:00
	Oxygen transfer, Diffuser Measurements, Diffuser Maintenance		
Break		2:00	2:30
Nitrification and Denitrification		2:30	3:30
	Bacteria, Stoichiometry, Metabolism Configurations, Requirements, Process Monitoring, Process Control		
Biological Phosphorus Removal		3:30	4:30
	Bacteria, Stoichiometry, Metabolism Configurations, Requirements, Process Monitoring, Process Control		

Instructors	Title	Employer
Chris Maher	Senior Operations Analyst	Clean Water Services
Peter Schauer	Principal Process Engineer	Clean Water Services
Adrienne Menniti	Principal Process Engineer	Clean Water Services
Rachel Golda	Operations Analyst I	Clean Water Services
Ornella Sosa Hernandez	Operations Analyst I	Clean Water Services