



Current Course List as of 01/07/2016

Training units are approved for TUs in Colorado.

Universal Topics	Instructor	Time	W	WW	I	C	D	SU
Mathematics								
Basic Math for Wastewater Operators	Sidney	120	0.2	0.2	0.2	0.2	0.2	
Basic Math for Water Operators	Sidney	120	0.2	0.2	0.2	0.2	0.2	
Basic Math for Water Distribution Operators	Sidney	120	0.2	0.2	0.2	0.2	0.2	
Basic Math for Collection System Operators	Sidney	120	0.2	0.2	0.2	0.2	0.2	
Intermediate Math for Wastewater Operators	Sidney	120	0.2	0.2	0.2	0.2	0.2	
Intermediate Math for Water Operators	Sidney	120	0.2	0.2	0.2	0.2	0.2	
Intermediate Math for Distribution Operators	Sidney	120	0.2	0.2	0.2	0.2	0.2	
Intermediate Math for Collection System Operators	Sidney	120	0.2	0.2	0.2	0.2	0.2	
Advanced Math Topics for Wastewater Operators	Sidney	120	0.2	0.2	0.2	0.2	0.2	
Advanced Math Topics for Water Operators	Sidney	120	0.2	0.2	0.2	0.2	0.2	
Fundamental Concepts in Math	Sidney	60	0.1	0.1	0.1	0.1	0.1	
Percents , Percent Removal, and Efficiency	Sidney	30	0.05	0.05	0.05	0.05	0.05	
Unit Conversions	Sidney	30	0.05	0.05	0.05	0.05	0.05	
Geometry 1	Sidney	30	0.05	0.05	0.05	0.05	0.05	
Geometry 2								
Hydraulic Detention Time	Sidney	30	0.05	0.05	0.05	0.05	0.05	
Velocity in Pipes and Open Channels	Sidney	30	0.05	0.05	0.05	0.05	0.05	
Finding Slopes and Lengths	Sidney	30	0.05	0.05	0.05	0.05	0.05	
Wells -- specific yield, drawdown, zone of influence	Sidney	30	0.05	0.05	0.05		0.05	
Force -- pressure in pipes, buoyancy, hydraulic tools	Sidney	30	0.05	0.05	0.05	0.05	0.05	
Pumps -- horsepower, cost to operate, head loss, cycle times	Sidney	30	0.05	0.05	0.05	0.05	0.05	
Chemical Dosing	Sidney	30	0.05	0.05	0.05	0.05	0.05	
Filters -- backwash rate, hydraulic loading rate, bed expansion	Sidney	30	0.05					
Calculating dilutions for chemical addition	Sidney	30	0.05	0.05	0.05	0.05	0.05	
Organic Loading Rate	Sidney	30		0.05	0.05			
Sludge Volume Index	Sidney	30		0.05	0.05			
Mean Cell Residence Time and Solids Residence Time	Sidney	30		0.05	0.05			
Food to Microorganism Ratio	Sidney	30		0.05	0.05			
Math for Secondary Clarifiers -- SOR, Weir Loading Rate, Solids F	Sidney	30		0.05	0.05			
Percent Volatile Solids Reduction in Digesters	Sidney	30		0.05	0.05			
Sludge Dewatering Calculations	Sidney	30		0.05	0.05			
Electrical Systems Calculations	Sidney	30	0.05	0.05	0.05	0.05	0.05	
Laboratory Math -- Calculations for Sampling and Lab Tests	Sidney	30	0.05	0.05	0.05			
Centrifugal Pumps	Sidney	90	0.15	0.15	0.15	0.15	0.15	
Rotary Lobe Pumps	Sidney	60	0.1	0.1	0.1	0.1	0.1	
Pumps for Water and Wastewater	Sidney	120	0.2	0.2	0.2	0.2	0.2	
Pumps for Water Distribution Systems	Josh	90	0.15	0.15	0.15	0.15	0.15	
Hydraulics Basics	Sidney	90	0.15	0.15	0.15	0.15	0.15	
Hydraulics of Pumped Systems	Sidney	150	0.25	0.25	0.25	0.25	0.25	
Lift Stations - Collections and Wastewater	Sidney	90				0.15		
Booster Pump Stations	Josh	90	0.15				0.15	
Valves - Types and Uses	Sidney	60	0.1	0.1	0.1	0.1	0.1	
Chlorine Disinfection - Wastewater Focus	Sidney	90	0.15	0.15	0.15		0.15	
Chlorine Disinfection - Water Focus	Sidney	90	0.15	0.15	0.15		0.15	
Chlorine Cylinder Changeout Procedure	Sidney	30	0.05	0.05	0.05		0.05	
Measuring Chlorine Residual	Sidney	60	0.1	0.1	0.1		0.1	
Corrosion Control Basics	Sidney	60	0.1	0.1	0.1	0.1	0.1	
Intermediate Corrosion Control	Sidney	120	0.2	0.2	0.2	0.2	0.2	
Controlling Corrosion in Distribution Systems	Sidney	120	0.2				0.2	

Universal Topics	Instructor	Time	W	WW	I	C	D	SU
Electrical Basics	Sidney	60	0.1	0.1	0.1	0.1	0.1	
Chemistry	Sidney	90	0.15	0.15	0.15		0.15	
Trenching and Shoring	Josh	120				0.2	0.2	
GIS and Asset Management	Josh	60	0.1	0.1	0.1	0.1	0.1	
Distribution System Valves	Josh	60	0.1	0.1	0.1	0.1	0.1	
Math for the Utility Manager	Josh	90	0.15	0.15	0.15	0.15	0.15	
Communication and Public Relations	Josh	60						0.1
Confined Space Entry	Josh	90	0.15	0.15	0.15	0.15	0.15	
Instrumentation and Control	Josh	60	0.1	0.1	0.1	0.1	0.1	
Using Data to Optimize the Process	Josh	90	0.15	0.15	0.15			
Project Management and CIP's	Josh	60						0.1
Management Considerations	Sidney	90						0.15

Wastewater and Collection Topics	Instructor	Time	W	WW	I	C	D	SU
Federal Pretreatment Program and Pollution Prevention	Sidney	150		0.25	0.25	0.25		
Completing the Discharge Monitoring Report	Sidney	60		0.1	0.1			
Sources of Discharge Permit Limits	Sidney	90		0.15	0.15			
Introduction to Wastewater Treatment: A Plant Overview	Sidney	120		0.2	0.2			
Characteristics and Composition of Domestic Wastewater	Sidney	90		0.15	0.15	0.15		
Calculations for Estimating Future Flows and Loads	Sidney	90		0.15	0.15			
Lagoons and Natural Systems	Sidney	90		0.15	0.15			
Fixed Film Treatment Processes	Sidney	120		0.2	0.2			
Biological Treatment Fundamentals	Sidney	60	0.1	0.1	0.1	0.1	0.1	
Activated Sludge Basics	Sidney	120		0.2	0.2			
Types of Activated Sludge Systems	Sidney	90		0.15	0.15			
Activated Sludge Process Control Methodologies	Sidney	90		0.15	0.15			
Activated Sludge Microbiology	Sidney	60		0.1	0.1			
Activated Sludge Microscope Techniques	Sidney	120		0.2	0.2			
Secondary Clarifier Operation and State Point Analysis	Sidney	90		0.15	0.15			
State Point Analysis Hands-On Modeling Exercise	Sidney	30		0.05	0.05			
Activated Sludge Process Control Tests - Part 1	Sidney	90		0.15	0.15			
Activated Sludge Process Control Tests - Part 2	Sidney	90		0.15	0.15			
Activated Sludge Troubleshooting	Sidney	150		0.25	0.25			
Secondary Clarifier Troubleshooting	Sidney	90		0.15	0.15			
Integrated Fixed Film Activated Sludge (IFAS)	Sidney	60		0.1	0.1			
Membrane Activated Sludge Systems	Sidney	60		0.1	0.1			
Colorado Nutrient Criteria Review	Sidney	60		0.1	0.1			
Nitrogen Removal Basics	Sidney	60	0.1	0.1	0.1		0.1	
Nitrification and Denitrification - Intermediate Level	Sidney	120		0.2	0.2			
Nitrification and Denitrification - Advanced Level	Sidney	120		0.2	0.2			
Phosphorus Removal Basics - Biological and Chemical	Sidney	60		0.1	0.1			
Biological Phosphorus Removal - Intermediate Level	Sidney	60		0.1	0.1			
Biological Phosphorus Removal - Advanced Level	Sidney	90		0.15	0.15			
Chemical Phosphorus Removal	Sidney	30		0.05	0.05			
Troubleshooting BNR Systems - Basics	Sidney	60		0.1	0.1			
Troubleshooting BNR Systems - Intermediate	Sidney	90		0.15	0.15			
Troubleshooting BNR Systems - Advanced	Sidney	90		0.15	0.15			
Introduction to the 503 Regulations	Sidney	60		0.1	0.1			
Introduction to Solids Handling	Sidney	180		0.3	0.3			
Odor Control	Sidney	60		0.1	0.1	0.1		
Aerobic Digestion	Sidney	60		0.1	0.1			
Anaerobic Digestion	Sidney	120		0.2	0.2			
Troubleshooting Anaerobic Digestion	Sidney	120		0.2	0.2			
Sludge Stabilization Techniques in Addition to Digestion	Sidney	90		0.15	0.15			
Dewatering - Sludge Conditioning	Sidney	90		0.15	0.15			
Dewatering - Belt Filter Presses	Sidney	90		0.15	0.15			
Dewatering - Centrifuges	Sidney	60		0.1	0.1			

Wastewater and Collection Topics	Instructor	Time	W	WW	I	C	D	SU
Intro to Collection Systems	Sidney	60		0.1	0.1	0.1		
Collection System Inspection and Testing	Sidney	180				0.3		
Pretreatment and the Sewer Ordinance	Sidney	180		0.3	0.3	0.3		
Collection Systems Design	Josh	90		0.15		0.15		
Controlling Hydrogen Sulfide Formation in the Collection System	Josh	60		0.1	0.1	0.1		
Inflow and Infiltration	Josh	60				0.1		
Inspection and Testing	Josh	90		0.15	0.15	0.15		
Lift Stations	Josh	90				0.15		
Manholes	Josh	60				0.15		
Operation and Maintenance Activities	Josh	60		0.1	0.1	0.1		
Operations and Maintenance - Point repairs, CIP	Josh	90				0.15		
Operations and Maintenance Odor Control	Josh	60		0.1		0.1		
Managing Sanitary Sewer Overflows (SSOs)	Josh	90				0.1		
Effect of Water Treatment Residuals on WWTP Performance	Sidney	30		0.05	0.05			
Effect of Alkalinity Type and Concentration on Nitrifying Biofilm Activi	Sidney	30		0.05	0.05			
Optimizing the TF/SC Process for Nitrification	Sidney	30		0.05	0.05			
Denitrification with Carbonaceous Trickling Filters	Sidney	30		0.05	0.05			
Comparing Gravimetric with Spin Data: Accuracy of Process Control C	Sidney	30		0.05	0.05			

Water and Distribution Topics		Time	W	WW	I	C	D	SU
Introduction to Small Water Systems	Sidney	90	0.15				0.15	
Microbiology for Water and Distribution Operators	Sidney	60	0.1				0.1	
Hydraulics	Sidney	120	0.2	0.2	0.2	0.2	0.2	
Water Sources Part 1	Sidney	90	0.15				0.15	
Water Sources Part 2	Sidney	90	0.15				0.15	
Water Treatment Part 1	Sidney	120	0.2				0.2	
Water Treatment Part 2	Sidney	120	0.2				0.2	
Well Systems	Sidney	60	0.1				0.1	
Intro to Distribution Systems	Sidney	90	0.15				0.15	
Intermediate Topics in Distribution Systems	Sidney	180	0.3				0.3	
Water Storage	Sidney	60	0.1				0.1	
Regulations Part 1	Sidney	90	0.15				0.15	
Regulations Part 2	Sidney	90	0.15				0.15	
Lead and Copper Rule	Sidney	60	0.1				0.1	
Total Coliform Rule	Sidney	60	0.1				0.1	
LT2ESWTR and DBPR2 Rules	Sidney	60	0.1	0.05	0.05		0.1	
Water Treatment Sources	Josh	60	0.1				0.1	
Coagulation	Josh	60	0.1					
Flocculation	Josh	90	0.15					
Sedimentation	Josh	60	0.1					
Drinking Water Regulations	Josh	60	0.1				0.1	
Instrumentation and Control	Josh	60	0.1	0.1	0.1	0.1	0.1	
Water Plant Operations	Josh	60	0.1				0.1	
Taste and Odors	Josh	60	0.1				0.1	
Water Lab Procedures	Josh	90	0.15				0.15	
Advanced Water Treatment	Josh	90	0.15				0.15	
Pumps and Motors	Josh	60	0.1	0.1	0.1	0.1	0.1	
Maintenance	Josh	60	0.1	0.1	0.1	0.1	0.1	
Filtration	Josh	90	0.15					
Record Keeping	Josh	60	0.1	0.1	0.1	0.1	0.1	
Operations Safety	Josh	90	0.15	0.15	0.15	0.15	0.15	
Alternate Treatment Technologies	Josh	90	0.15	0.15				
Ion Exchange	Josh	60	0.1					
Membranes	Josh	90	0.15	0.15				
Distribution System Design and Administration	Josh	90	0.15				0.15	
Distribution System O&M Pumps	Josh	90	0.15				0.15	
Piping Materials and Water Mains	Josh	60	0.1				0.1	
Meters and Service Lines	Josh	60					0.15	
Distribution System O&M Main Breaks	Josh	90					0.15	
GIS and AMS	Josh	60	0.1	0.1	0.1	0.1	0.1	
Fire Hydrants	Josh	60				0.1	0.1	
Water Quality/DBPs	Josh	90	0.15				0.15	
Cross Connection	Josh	60	0.1	0.1	0.1	0.1	0.1	

Water and Distribution Topics		Time	W	WW	I	C	D	SU
Distribution System Regs in Colorado	Josh	240	0.35				0.35	
DBP's	Josh	90	0.15				0.15	
Distribution Storage	Josh	90	0.15				0.15	
Distribution System Management and Administration	Josh	60	0.15				0.15	
Distribution System Operation and Maintenance	Josh	75	0.15				0.15	
Distribution System Operator Safety	Josh	60	0.1				0.1	
Distribution System Water Quality	Josh	60	0.1				0.1	
Flushing for Water Quality	Josh	60	0.1				0.1	
Lead and Copper Rule	Josh	60	0.1				0.1	
Total Coliform Rule	Josh	60	0.1				0.1	

Hours W WW I C D S

Laboratory Procedures		Instructor	Time	W	WW	I	C	D	SU
Representative Sampling	Sidney	120	0.2	0.2	0.2			0.2	
Various laboratory procedures, each	Sidney	60	0.1	0.1	0.1				
BOD, TSS, Alkalinity and Hardness, others	Sidney								
Proper Use of Your Spectrophotometer	Sidney	60	0.1	0.1	0.1			0.1	
One Full Day Sampling and Analysis Evaluation	Sidney	480	0.4	0.8	0.8				
Lab Cram	Sidney	420	0.7	0.7	0.7				

Total for All Courses			226.25	12.95	14.8	14.25	8.7	12.4	0.35
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