

**CONTINUING EDUCATION COURSE TOPIC GUIDELINES
FOR WASTEWATER AND DRINKING WATER OPERATORS**

Approved March 23, 2009

Revised August 29, 2017

Continuing Education Topics		WW Operators	DW Operators
A	General		
1	Basic Computers	✓	✓
2	Basic Electricity for Operators	✓	✓
3	Basic Hydraulics	✓	✓
4	Geographic Info Systems (GIS)	✓	✓
5	Math for Operators	✓	✓
6	Water Chemistry	✓	✓
7	Water Microbiology	✓	✓
B	Safety	WW	DW
1	Back Injury Prevention		
2	Backhoe Operator	✓	✓
3	Chlorine Safety	✓	✓
4	Confined Space	✓	✓
5	Electrical Hazards - (Arc Flash)	✓	✓
6	Ergonomics		
7	Excavations/Excavations Equipment, Trenching/Shoring/Competent Person	✓	✓
8	First-Aid/CPR/AED		
9	Forklift Operator		
10	Hazard Communication/Right-to-Know/Lab Safety	✓	✓
11	Lockout/Tagout	✓	✓
12	Personal Protective Equipment/Respiratory Protection	✓	✓
13	Safe Handling of Water Treatment Chemicals and Materials --This would include storage of chemicals, application of chemicals, movement of chemicals from one area to another, and chemical quality control	✓	✓
14	Slips, Trips and Falls		
15	Spill Response	✓	✓
16	Traffic Control/Work Zone Safety	✓	✓
17	Blood-borne Pathogens		
C	O & M Equipment	WW	DW
1	Aeration Equipment	✓	✓
2	Belt Filter Presses and other Sludge Dewatering Technologies	✓	✓
3	Blowers and Compressors	✓	✓
4	Booster Pumping Stations	✓	✓
5	Centrifuges	✓	✓
6	Chemical Storage/Feed Systems	✓	✓
7	Cleaning Equipment such as Jetting and Vac Trucks	✓	✓
8	Cross Connection/Backflow Prevention Equipment	✓	✓
9	Electrical Controls/SCADA	✓	✓
10	Flow Monitoring & Level Sensing Equipment	✓	✓
11	Generators/Switchgear/Motor Control Centers	✓	✓
12	Hydraulic and Pneumatic Equipment	✓	✓
13	Inspection Equipment such as CCTV, Smoke Testing, etc.	✓	✓
14	Instrumentation	✓	✓
15	Leak Detection	✓	✓
16	Cathodic Protection	✓	✓
17	Mechanical Process Equipment	✓	✓
18	Mixers	✓	✓
19	Motors/Engines/Drives	✓	✓
20	Pipe, Valves, Fittings	✓	✓
21	Programmable Logic Controllers	✓	✓
22	Pumping/Lift Stations	✓	✓
23	Pumps	✓	✓
24	Stand-by/Aux/Support Equipment	✓	✓
25	Variable Freq Drives	✓	✓

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D	WW Treatment Process/Quality Control	WW	DW
1	Advanced WW Treatment - Nutrient Removal	✓	
2	Attached Growth/Fixed Film Systems (Trickling Filters, RBCs)	✓	
3	Biosolids Disposal/Land Application/Incineration	✓	
4	Chemical Storage & Handling	✓	
5	Chemical Treatment/Odor Control	✓	
6	Coupled Systems: TF/AS, TF/SC	✓	
7	Disinfection/Deactivation	✓	
8	Effluent Discharge & Reuse	✓	
9	Fats, Oil and Grease Removal	✓	
10	Grit Removal	✓	
11	Influent/Sidestream Characterization	✓	
12	Membrane Process: Membrane Bioreactors & Effluent Filtration	✓	
13	Natural Systems - Lagoons, Constructed Wetlands, Etc.	✓	
14	Process Control Techniques	✓	
15	Process Optimization	✓	
16	Sampling/Analysis	✓	
17	Sand/Media Filters	✓	
18	Screens/Grinders/Comminutors	✓	
19	Sedimentation/Clarification	✓	
20	Septage Receiving & Treatment	✓	
21	Sludge Conditioning, Dewatering, Stabilization, & Reduction	✓	
22	Suspended Growth Systems (Activated Sludge)	✓	
E	WW Collection Process	WW	DW
1	Cleaning/Flushing & Pigging	✓	
2	Corrosion Control	✓	
3	Flow Measurement: Open Channel & Pipe	✓	
4	Infiltration/Inflow/Exfiltration	✓	
5	Inspection & Condition Assessment	✓	
6	Manhole Rehabilitation	✓	
7	Mapping, Locating, Tracer wire	✓	
8	Odor Control	✓	
9	Overflows & Bypass Control & Source Water Protection	✓	
10	Pumping/Lift Stations	✓	
11	Sampling & Lab Analysis	✓	
12	Service Lines & Connections	✓	
13	Sources & Characteristics	✓	
14	Stormwater Separation	✓	
15	Trenchless Technologies for Pipe Rehabilitation	✓	
F	Water Treatment Process/Quality Control	WW	DW
1	Adsorption Processes		✓
2	Aeration Equipment		✓
3	Algae Control		✓
4	Aquifer Storage & Recovery		✓
5	Arsenic removal		✓
6	Bacteriological Sampling Procedures		✓
7	Basic Knowledge of Groundwater Treatment		✓
8	Basic Knowledge of Water Treatment		✓
9	Cation Exchange Softening		✓
10	Chemical Precipitation Softening		✓
11	Chemical Storage & Handling		✓
12	Chemical Treatment		✓
13	Coagulation & Flocculation		✓
14	Corrosion Control		✓
15	Cross Connection/Backflow Prevention		✓
16	Disinfecting Water Storage Vessels		✓
17	Drinking Water Disinfection		✓
18	Drinking Water Standards and Rules		✓
19	Filtration		✓
20	Flow Measurement: Open Channel & Pipe		✓

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F	Water Treatment Process/Quality Control	WW	DW
21	Fluoridation		✓
22	Groundwater Basics/Aquifers		✓
23	Intake Structures		✓
24	Iron & Manganese Removal		✓
25	Jar Testing		✓
26	Membrane Processes: Filtration Modes, Reverse Osmosis		✓
27	Metering		✓
28	Nitrate Removal		✓
29	Oxidation		✓
30	Pesticide & Herbicide Reduction		✓
31	Plant & Distribution Storage		✓
32	Point of Use/Point of Entry Devices		✓
33	Process Optimization & Upgrade/Process Control		✓
34	Residuals Disposal		✓
35	Sampling & Lab Analysis		✓
36	Sedimentation/Clarification		✓
37	Surface Water Treatment		✓
38	Taste & Odor Control		✓
39	Water Source Treatment & Characteristics		✓
40	Well Maintenance & Rehab		✓
41	Well Operation (yield, drawdown)		✓
42	Zebra Mussel Control		✓
G	Distribution Process/Quality Control	WW	DW
1	Chlorination, Dechlorination - (Disinfection)		✓
2	Corrosion Control		✓
3	Cross Connection/Backflow		✓
4	Distribution Systems		✓
5	Drinking Water Standards and Rules		✓
6	Flow/Pressure Testing		✓
7	Flushing, Pigging, and Swabbing		✓
8	Hydrants, Valves, Exercising Programs		✓
9	Leak Detection/Water Audits		✓
10	Mapping, Locating, Tracer wire		✓
11	Metering		✓
12	New Main & Repair Disinfection		✓
13	Sampling & Lab Analysis		✓
14	Service Line & Curb Box Maintenance		✓
15	Service Line Thawing		✓
16	Storage		✓
17	Trenchless Technologies		✓
18	Wellhead/Source Water Protection		✓
H	Administration/Management	WW	DW
1	Capacity, Management, O & M for Separate Systems	✓	✓
2	Construction Inspection/Documentation/Design Build	✓	✓
3	Community/Public Relations/Compliant Response	✓	✓
4	Design Manual Development (SOPs and BMPs)	✓	✓
5	Emergency Response Planning & Security Training	✓	✓
6	Energy Efficiency/Energy Conservation at W/WW Facilities	✓	✓
7	Federal & State Financing Programs Related to Infrastructure and/or Operations	✓	✓
8	FOG Management Programs	✓	
9	Health & Safety Program Implementation		
10	Industrial Pretreatment Programs/Source Control	✓	
11	Legal Issues for DW/WW Utilities Pertaining to Operations	✓	✓
12	Records & Reports: Monitoring/Reporting/Records Management --Related to MORs, DMRs, Internal Process Control Records, CCRs, ECCRs, Cross Connection Records, Internal Process Control Records, Public Notification Records Related to a Water Violation or BWA	✓	✓

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H	Administration/Management	WW	DW
13	Nine Minimum Controls for Combined Systems	✓	
14	Planning/Organization/Project Management	✓	✓
15	Plant Optimization: Continue Process Improvement/Sustainability/Asset Management/Statistical Process Control Techniques	✓	✓
16	Private Property Issues//Right-of-Way/Service Laterals	✓	✓
17	Problem Solving/Troubleshooting/Decision Making	✓	✓
18	Regs (CWA/SDWA, State & Local such as Operator Certification Requirements), NPDES Permit Requirements, Compliance	✓	✓
19	Maintenance		
20	Risk Management		
21	Sanitary Surveys/Plant/System Inspections	✓	✓
22	Sewer Use Ordinances & Moratoriums	✓	
23	SSO/CSO Reduction/Elimination (SSO/CSO)	✓	
24	Supervision & Personnel Management/Communication Skills	✓	✓
25	Surface Water/Groundwater/Watershed Protection	✓	✓
26	TMDLs	✓	
27	Training/Teaching Skills		
28	Wet Weather Control Procedures	✓	
29	Water Conservation	✓	✓

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