

## Training Unit Topic Matrix

TU Approval Guidelines

1-15 minutes= 0 TUs

16-45 minutes = .05 TUs

46-60 minutes = 0.1 TUs

	Water Treatment	Wastewater	Industrial	Collection	Distribution	Supplemental
<b>Revised: 4/26/16</b>						
Activated carbon treatment	X	X	X			
Activated sludge		X	X			
Asbestos Awareness	X	X	X	X	X	
Asset Management	X	X	X	X	X	
Chemical addition	X	X	X	X	X	
Computer Software						X
Administer compliance, emergency preparedness and safety program	X	X	X	X	X	
Aeration	X	X	X			
Alarms	X	X	X	X	X	
Algae control	X	X	X			
Alkalinity	X	X	X			
Ammonia	X	X	X			
Anaerobic pre-treatment		X	X			
Assess system demand	X	X	X		X	
Assess water quality	X	X	X		X	
Atmosphere testing equipment	X	X	X	X	X	
Backflow prevention devices (General Non Certification)	X	X	X	X	X	
Bacteriological Sampling and Testing	X	X	X		X	
Belt presses	X	X	X			
Bio-chemical oxygen demand		X	X			
Biofiltration	X	X	X			
Biological nitrogen removal	X	X	X			
Biological phosphorus removal		X	X			
Biosolids		X				
Bloodborne pathogens/infectious disease	X	X	X	X	X	
Blowers and compressors	X	X	X	X	X	
Boring equipment				X	X	
Bucket machine				X		
Asset Management	X	X	X	X	X	
Carcinogens removal	X					
Cartridge filters	X	X	X			
CCTV				X	X	
Cathodic protection systems	X				X	
Chain of custody	X	X	X		X	

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Check and evaluate capacity of equipment	X	X	X	X	X	
Chemical feeders	X	X	X		X	
Chemical handling	X	X	X	X	X	
Chemical nitrogen removal		X	X			
Chemical oxygen demand (COD)		X	X			
Chemistry	X	X	X	X	X	
Chlorination	X	X	X		X	
Chlorinators	X	X	X		X	
Chlorine demand	X	X	X		X	
Chlorine residual	X	X	X		X	
Clarifiers	X	X	X			
Clean water act	X	X	X	X	X	
Clear well	X	X	X		X	
Carbon dioxide CO <sup>2</sup>		X	X			
Coagulation	X	X	X			
Color	X					
Colorado drinking water regulations	X	X	X	X	X	
Colorado Operators Certification Regulation - Regulation No. 100	X	X	X	X	X	
Confined space entry	X	X	X	X	X	
Conservation						X
Controllers	X	X	X	X	X	
Copper sulfate treatment	X			X		
Corrosion control	X	X	X	X	X	
Cross connection surveys	X	X	X		X	
Cross-connections control (NON CERTIFICATION)	X	X	X	X	X	
Cross Connection/Backflow Control Certification 40 hr. = 0.4 TU						X
Cross Connection/Backflow Control recertification 20 hr. = 0.2 TU						X
Cryogenic operations	X	X	X			
Customer service	X	X	X	X	X	
Dechlorination	X	X	X		X	
Design joint restraints				X	X	
Design shoring				X	X	
Design thrust blocks					X	
Diatomaceous earth filters	X		X			
Digesters and gas collection		X	X			
Digestion		X	X			
Disinfection	X	X	X		X	
Disinfectant by-products	X	X	X		X	
Dissolved air flotation		X	X			
Dissolved oxygen	X	X	X	X		

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Discharge monitoring report (DMR)	X	X	X			
DRINKING WATER REGULATIONS	X	X	X	X	X	
Drives	X	X	X	X	X	
Dye testing				X		
Effluent toxicity		X	X			
Electrical controls	X	X	X	X	X	
Electrical hazards	X	X	X	X	X	
Electronic testing equipment	X	X	X	X	X	
Emergency preparedness/management	X	X	X	X	X	
Energy Awareness, Management & Sustainability						X
Engines	X	X	X	X	X	
Ethics and Professionalism	X	X	X	X	X	
Evaluate pre-treatment	X	X	X			
Facility inspection	X	X	X	X	X	
Facility security	X	X	X	X	X	
Facility upset	X	X	X			
Fats, oils, and grease		X	X	X		
Filtration	X	X	X			
Fire safety	X	X	X	X	X	
First Aid/CPR						X
Fittings/Piping	X	X	X	X	X	
Fixed-film reactors	X	X	X			
Flocculation tanks	X	X	X			
Flow equalization	X	X	X			
Flow meters	X	X	X	X	X	
Flow monitoring	X	X	X	X	X	
Flow pattern	X	X	X	X	X	
Fluoride concentration	X		X			
Flushing program (cleaning)				X	X	
Force mains (clean with pig)				X		
Forklift	X	X	X	X	X	
Fuses	X	X	X	X	X	
Gas detection	X	X	X	X	X	
General Management Courses						X
Gates	X	X	X	X		
Generators	X	X	X	X	X	
GIS/Mapping	X	X	X	X	X	
Granular activated carbon	X	X	X			
Gravity sewers				X		
Grit removal		X	X	X		

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Hand and power tools	X	X	X	X	X	
Hardness	X	X	X			
Hazardous environment	X	X	X	X	X	
Hazwoper 40 hr. course 0.4 TU's instead of 4						X
Hearing Conservation	X	X	X	X	X	
Heat exchangers		X	X			
Heavy equipment				X	X	
High-velocity cleaners				X		
Hydrants				X	X	
Hydraulic cleaning				X		
Hydraulic equipment	X	X	X	X	X	
IFAS (Integrated Fixed Film Activated Sludge)		X	X			
Infiltration/inflow/exfiltration				X		
Inorganic chemicals	X	X	X	X		
Inspect equipment	X	X	X	X	X	
Intake structure	X	X	X			
Ion exchange	X	X	X			
Iron and manganese sequestration/removal	X		X			
Jar test	X	X	X			
Jetting				X		
Joints				X	X	
Ladder safety	X	X	X	X	X	
Lagoons		X	X			
Land application		X	X			
Leak detection				X	X	
Lift stations				X		
Lime-soda softening	X		X			
Loading	X	X	X			
Lock-out/tag-out (LOTO)	X	X	X	X	X	
Mandrel testing				X		
Manhole/vault assessment				X	X	
Mapping				X	X	
Measure and evaluate head loss	X	X	X	X	X	
Mechanical dewatering	X	X	X	X	X	
Membrane treatment	X	X	X			
Metal analysis	X	X	X			
Meters	X	X	X	X	X	
Microbiological/microscopic exam	x	X	X		X	
Microscreens	X	X	X			
Mixing pattern	X	X	X			

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	Water Treatment	Wastewater	Industrial	Collection	Distribution	Supplemental
Motor controls	X	X	X	X	X	
Motors	X	X	X	X	X	
MSDS (Material Safety Data Sheet)	X	X	X	X	X	
Natural and manmade disasters	X	X	X	X	X	
NIMS & ICS						X
Nitrogen	X	X	X			
Odor control	X	X	X	X		
Oil /sand separators	X	X	X	X	X	
Occupational Safety and Health Administration Compliance (OSHA)	X	X	X	X	X	
Oxidation ditches		X	X			
Oxidation reduction potential	X	X	X			
Oxygen uptake/respiration rate		X	X			
Ozonation	X	X	X			
Packed tower aeration	X		X			
Perform pressure readings	X	X	X	X	X	
Personal protective equipment	X	X	X	X	X	
pH	X	X	X	X	X	
pH adjustment	X	X	X		X	
Phosphorus removal		X	X			
Phosphate	X	X	X			
Pigging				X	X	
Pipe/valve locators				X	X	
Pipeline assessment				X	X	
Pipeline rehabilitation/trenchless technology				X	X	
Piping and fitting	X	X	X	X	X	
Plan and organize work activities	X	X	X	X	X	
Pneumatic equipment	X	X	X	X	X	
Ponds and lagoons		X	X			
Pressure relief valves	X	X	X	X	X	
Pressure sensors	X	X	X	X	X	
Pressure sewers (S.T.E.P.)/Force mains				X		
Pressure testing	X	X	X	X	X	
Primary treatment		X	X			
Process analyzers/Instrumentation	X	X	X	X	X	
Process safety management	X	X	X	X	X	
Pumps	X	X	X	X	X	
Quality assurance/Quality Control (QA/QC)	X	X	X	X	X	
Radiological parameters	X	X	X			
RBC- Rotating Biological Contactors		X	X			
RCRA Hazardous Wastes/Otherwise regulated			X			

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	Water Treatment	Wastewater	Industrial	Collection	Distribution	Supplemental
Radionuclide disposal	X	X	X			
Rapid mix units	X	X	X			
Read and evaluate chart and meter results	X	X	X	X	X	
Read and evaluate gauges	X	X	X	X	X	
Read blueprints, readings, and maps	X	X	X	X	X	
Record and evaluate data	X	X	X	X	X	
Relays	X	X	X	X	X	
Resource conservation and recovery act (RCRA)	X	X	X	X	X	
Respond to complaints	X	X	X	X	X	
Reverse osmosis, electrodialysis and other membrane filtration	X	X	X			
Risk management program	X	X	X	X	X	
Rodders, etc.				X		
Safe Drinking Water Act (SDWA)	X	X	X	X	X	
Safety equipment	X	X	X	X	X	
Sample site plan	X	X	X		X	
Sampling techniques	X	X	X		X	
Sanitary surveys	X	X	X	X	X	
Sexual harassment						X
SCADA/Process control computers	X	X	X	X	X	
Screening	X	X	X			
Screening equipment	X	X	X			
Sedimentation	X	X	X			
Select materials	X	X	X	X	X	
Select type of pipes	X	X	X	X	X	
Selenium	X		X			
Septage		X	X			
Service connections				X	X	
Settleability testing	X	X	X			
Shoring				X	X	
Size mains				X	X	
Sludge treatment	X	X	X			
Sludge Volume Index		X	X			
Small Sytem Management						X
Smoke testing				X		
Solids	X	X	X			
Solids concentration	X	X	X			
Solids treatment and handling	X	X	X			
Spill response	X	X	X	X	X	
SOP (Standard Operating Procedures)	X	X	X	X	X	
Starters	X	X	X	X	X	

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	Water Treatment	Wastewater	Industrial	Collection	Distribution	Supplemental
Storm Water				X		
Stream standards	X	X	X			
Synthetic organic chemicals	X	X	X			
System layout/Design	X	X	X	X	X	
System map	X	X	X	X	X	
Tapping equipment				X	X	
Taps				X	X	
Temperature	X	X	X		X	
Technical Writing						X
Thrust blocks				X	X	
Technologically enhanced naturally occurring radioactive materials TNORM	X	X	X			
Total organic carbon (TOC)	X	X	X			
Traffic/work zone/FLAGGER				X	X	
Treated water storage	X		X		X	
Trenching and shoring				X	X	
Trickling filters		X	X			
Troubleshoot electrical equipment	X	X	X	X	X	
Turbidity	X	X	X		X	
Ultraviolet irradiation	X	X	X			
Up-flow solids-contact clarification	X	X	X			
Utility Management						X
Vacuum sewers				X		
Vacuum testing				X		
Valves	X	X	X	X	X	
Variable speed drives	X	X	X	X	X	
Violence in the Work Force						X
Vibration analysis	X	X	X	X	X	
Volatile acids		X	X			
Volatile organic chemicals	X	X	X			
Volume	X	X	X	X	X	
Vulnerability assessment	X	X	X	X	X	
Wastewater Treatment		X	X			
Water mains					X	
Wastewater Permit Compliance		X	X			
WATER CONSERVATION	X	X	X	X	X	
Water storage	X	X	X		X	
Water Treatment	X	X	X			
Watershed Regulations	X	X	X	X	X	
Well inspection	X		X		X	
Wells	X		X		X	
Wet wells		X	X	X		

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	Water Treatment	Wastewater	Industrial	Collection	Distribution	Supplemental
Write plans (O & M plans)	X	X	X	X	X	
Write regulatory authority reports	X	X	X	X	X	

This matrix is a guidance document for trainers and the training approval committees. Courses that receive approval other than supplemental are meant to be course material that falls under the need-to-know criteria published by ABC for water and wastewater operator certification. The approval committees use these guidelines to determine what types of training unit credit the course material is granted. As such, there is some flexibility in determining whether credit falls under a full credit category, or is determined to be a supplemental credit.

**SUPPLEMENTAL TRAINING DEFINITION:**

Supplemental training is training that is not essential for an operator to perform his/her duties but is useful the performance of those duties. (If a course is neither essential nor directly useful to an operator in the performance of his/her duties, that training will not receive TU credit)

**EXAMPLES OF UNACCEPTABLE SUPPLEMENTAL COURSES**

- Foreign language
- ATV operation
- Snow Cat Operation
- CDL CHECK OUT
- Vehicle inspection