Training Unit Topic Matrix

TU Approval Guidelines

1-15 minutes= 0 TUs

16-45 minutes = .05 TUs

46-60 minutes = 0.1 TUs

Revised: 11/27/12	**Water Treatment**	**Wastewater**	**Industrial**	**Collection**	**Distribution**
Activated carbon treatment	X	X	X		
Activated sludge		X	X		
Chemical addition	X	X	X	X	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		
Atmosphere testing equipment	X	X	X	X	X
Backflow prevention devices (General)	X	X	X	X	X
Bacteriological Sampling and Testing	X	X	X		X
Bio-chemical oxygen demand		X	X		
Biological	X	X	X	X	
Biological nitrogen removal	X	X	X		
Biological phosphorus removal		X	X		
Biological/Chemical	X	X	X		
Blood borne pathogens/infectious disease	X	X	X	X	X
Blowers and compressors	X	X	X	X	X
Boring equipment				X	X
Bucket machine				X	
Budget development and maintenance (Asset Management)	X	X	X	X	X
Cartridge filters	X	X	X		
Cathodic protection systems	X				X
Chain of custody	X	X	X		X
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		
Chemical phosphorus removal		X	X		

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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
Carbon dioxide CO^2		X	X		
Color	X	X	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
Controllers	X	X	X	X	X
Copper sulfate treatment	X			X	
Corrosion control	X	X	X	X	X
Cross connection surveys	X		X		X
Cross-connections control	X	X	X	X	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		
Disinfectant by-products	X	X	X		X
Dissolved air flotation	X	X	X		
Dissolved oxygen	X	X	X	X	
Discharge monitoring report (DMR)	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
Engines	X	X	X	X	X
Evaluate pre-treatment	X	X	X		
Facility inspection	X	X	X	X	X

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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
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	
Fuses	X	X	X	X	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	
Hand and power tools	X	X	X	X	X
Hardness	X	X	X		
Hazardous environment	X	X	X	X	X
Heat exchangers		X	X		
Heavy equipment				X	X
High-velocity cleaners				X	
Hydrants					X
Hydraulic cleaning				X	
Hydraulic equipment	X	X	X	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

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	Water Treatment	Wastewater	Industrial	Collection	Distribution
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
Micro screens	X	X	X		
Mixing pattern	X	X	X		
Motor controls	X	X	X	X	X
Motors	X	X	X	X	X
Natural and manmade disasters	X	X	X	X	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 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
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

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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
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		
RCRA Hazardous Wastes/Otherwise regulated			X		
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, electro dialysis 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
Sanitary surveys	X	X	X	X	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
Septage		X	X		
Service connections				X	X
Settleability testing	X	X	X		
Shoring				X	X
Size mains				X	X

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	Water Treatment	Wastewater	Industrial	Collection	Distribution
Sludge treatment	X	X	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
Starters	X	X	X	X	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
Televising				X	X
Temperature	X	X	X		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				X	X
Treated water storage	X		X		X
Trenching and shoring				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		
Vacuum sewers				X	
Vacuum testing				X	
Valves	X	X	X	X	X
Variable speed drives	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	X		
Water mains					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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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 recei approval other than supplemental are meant to be course material that falls under the need-to-know crite 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 flexibility in determining whether credit falls under a full credit category, or is determine to be a suppler credit.

SUPPLEMENTAL TRAINING DEFINITION:

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

EXAMPLES OF ACCEPTED SUPPLEMENTAL COURSES

Computer software (applicable to water/wastewater systems)
First aid/CPR
Hazwoper 40 hr. course **0.4 TU INSTEAD OF 40 HRS.**
Cross connection control certification 40 hr. course **0.4 TU INSTEAD OF 40 HRS.**
Technical writing
General Management Courses
Stormwater
Utility Management
Small System Management
Energy Awareness, Management & Sustainability
Conservation
NIMS & ICS

EXAMPLES OF UNACCEPTABLE SUPPLEMENTAL COURSES

Foreign language
ATV operation
Sexual harassment
Violence in the workplace