



Course Name	Introduction to Water Technology
Credit Hours	2 Hours
Course Description	This course introduces operators to the hydrologic cycle and its effects on the structure and functions of water and wastewater systems. From there, we discuss water collection, treatment, and distribution, as well as the physical, chemical, and biological properties of water.
Course Objectives	<p>After completing this course, the licensee should be able to:</p> <ul style="list-style-type: none">• Name and define the basic six processes that make the hydrologic cycle a continuous process.• Identify the groups that use municipal water and how each can conserve water through careful use.• Identify different methods of water treatment and the stages of each.• Name the causes and sources of pollution.• Measure the properties of water using a variety of instruments.• Relate varying conditions of pH, hardness, dissolved oxygen, etc., of water to establish quality.• Identify procedures used to kill or inactivate common organisms found in water.
Course Timed Syllabus	Attached
Method of Presentation	This online course uses instructor-led video, animation, text, and images. Multiple choice questions are used to test how well the student understands the material between each section. Each answer choice has a response which tells the student whether the selected answer is correct or not.
Schedule and Location	This course may be taken at any time at www.aypotech.com . The student may sign in and out of the course as many times as needed to complete the course.
Attendance Verification	Licensees can only access the training course using a secure username and password, linked to their unique email address.

Method of Evaluation

The licensee must complete all multiple-choice questions between sections correctly to get credit for the course. If their first response is incorrect, students will have to try again until they choose the correct answer. Question choices are randomized, so each participant will have a unique testing experience.

The course is also timed; participants will not get credit until they spend at least 120 active minutes in the course.

After successful completion of the course, the licensee is required to complete and submit a questionnaire in order to access their certificate of completion.

Instructor(s)

Ralph Stevens

Cost

\$25

Introduction to Water Technology Timed Syllabus

Section	Topic	Questions	Minutes
	Water: The Basic Resource		
1	The Water Cycle	1	3
2	Precipitation	1	3
3	Surface Runoff	1	3
4	Groundwater	3	3
5	Lots of Water, but...	1	3
6	Water Use	1	3
7	Industrial Use	1	3
8	Agricultural Use and Waste	1	3
9	Beginning of Waterworks	1	3
10	Centuries of Neglect	1	3
11	Water Treatment - Beginning to Today	1	3
	Water Collection, Treatment, and Distribution		
12	Collecting Surface and Ground Water	1	3
13	Transmission of Water	1	3
14	Why Treat the Supply Water?	1	3
15	Types of Treatment	1	3
16	Treatment in the Treatment Plant and Distribution	2	3
17	Collecting Wastewater	1	3
18	Treating Wastewater	1	3
19	Primary Treatment	1	3
20	Secondary Treatment	1	3
21	Tertiary Treatment	1	3
	Physical Properties of Water		
22	Basic Properties of Water	1	3
23	The Color of Water	1	3
24	Measuring Water Color	2	3
25	Taste and Odor of Water	2	3
26	The Temperature of Water	1	3
27	Solids in Water	1	3
28	Total Solids in Water	1	3
29	Volatile and Fixed Solids	1	3
30	Turbidity and Suspended Matter	2	3
31	Electrical Conductivity	1	3
	Chemical Properties of Water		
32	Atoms and Molecules	2	3
33	Acids, Bases, and Salts	1	3
34	The Ionization of Water	3	3
35	Alkalinity	1	3
36	Acidity	1	3
37	Hardness of Water	1	3
38	Other Unwanted Chemicals	1	3
39	Dissolved Oxygen	1	3
	Biological Properties of Water		
40	Pathogenicity	1	3
41	Disinfection	1	3
42	Stabilization of Organic Matter	1	3
43	Biochemical Oxygen Demand	1	3
44	Factors Affecting Growth	3	3
45	The Food Chain and Living Things	1	3
46	Bacteria	1	3
47	Environmental Classifications of Bacteria	1	3
48	Bacteria in Treatment Plants	1	3
49	Viruses	1	3
50	Algae	1	3
51	Protozoa and Higher Organisms	1	3
Totals:		62	153.0
Time Required to Complete Course:			120

Ralph Stevens

Certificates/Licenses

- Certified Maintenance Reliability Professional
- Grade 4 Electrical/Instrumentation & Grade 3 Water Treatment Operator Licenses (CA)
- Grade 3 Operator, Maintenance Technician, & Grade 1 Collection Operator Licenses (AZ)

Instructional Experience

TPC Training/JADE Learning/American Safety Council **2017 - present**

Conducts training seminars, assessing the training needs and comprehension of the students, preparing training material and agenda, continually enhancing technical instructional delivery and presentation skills, adjusting course content in accordance with business needs and regulatory requirements, and ensuring the quality of the course content throughout a course life cycle. Over 600 hours of classroom instructional experience per year.

California Water Environment Association

Class trainer for Electrical/Instrumentation licensees. Workshop trainer for Reliability Centered Maintenance.

Technical Experience

Maintenance Reliability Supervisor (CCWRD) **2017 - 2020**

Helping leadership enhance the district into RCM, RCD, and Operational Excellence.

Planner/Scheduler (Clark County Water) **2012 - 2014**

Planned, scheduled, inspected work performed along with mentoring staff at the WWTP, lift stations and lagoons. Instructed staff on the install, repair, and maintenance of motors, pumps, SCADA, controls, plant facilities and project management. Used Maximo EMS to monitor and control work flow, budgets, assets, and cost roll up. Served as onsite safety trainer, odor compliant person, and site inspector. Performed root cause analysis and predictive maintenance on plant equipment.

Electrical Supervisor (Metropolitan Water Reclamation) **1978 - 2012**

Supervised Electrical Department in all wastewater processes, SCADA control wave, lift stations, deep tunnel, power plant sub-stations, control structures, disinfection, ozone, pumps, tide gates, and day-to-day operations. Supervised 4 WWTP operators, 24 electricians, support trades and contract workers. Setup the Mainsaver CMMS system, asset management, job and safety plans, and RCM implementation. Used CMMA and SAP to track progress, order parts, schedule work, and oversee work order completion. Worked on general construction from the sub-contractor side of the Deep Tunnel Storm Water Collection Systems.