

# Water Systems Technology –AS

## Program Description

Water Systems Technology is the study of water treatment processes, distribution processes, and wastewater processes. The program is designed to prepare students seeking a career in drinking water treatment and distribution or wastewater. The Water Systems Technology program also provides instruction for water and wastewater industry personnel interested in career advancement as well as continuing education opportunities for State certified Water Treatment and Water Distribution Operators for certification renewal. Coursework will help prepare students for various certification examinations given by the State of California Water Resources Control Board. Upon completion of the program, students will acquire skills and knowledge in water treatment concepts, wastewater treatment concepts, chemical dosage techniques, water distribution, water chemistry, water quality, water mathematical calculations and other skills needed throughout this vital industry. The students completing the program can become employed as a distribution operator, water treatment plant operator, water service representative, water quality specialist, wastewater collection worker and/or wastewater treatment operator.

## Student Learning Outcome

Demonstrate proficiency in the core skills and knowledge required for employment in the water and wastewater industry.  
Recommended Course Sequence

*The sequence listed below, satisfies your AS requirements. Connect with a counselor to develop an individual student education plan through the Counseling Department @ <https://www.canyons.edu/counseling> or (661) 362-3288/(661) 362-3811.*

*Major courses are sequenced and **BOLDED** based on recommendations by the [Water Systems Technology Department](#).*

<b>First Semester (0-15 Units)</b>				
Course	Title	Units	GE Area	
<b>WATER 130</b>	<b>Waterworks Mathematics (FA, SP,SU)</b>	<b>3</b>	<b>Major - AS</b>	
<b>WATER 120</b>	<b>Introduction to Water Systems Technology (FA, SP, SU) (8 weeks 100% online)</b>	<b>3</b>	<b>Major -AS</b>	
ENGL 101/101H	English Composition (FA,WI,SP,SU)	4	Area D1	
Physical Education and Wellness	HLHSCI 100 - Health Education (FA, WI, SP,SU)-online HLHSCI 150 - Nutrition (FA, SP, SU) HLHSCI 243* Women and Health (FA, SP) PE KPEA or KPEI or Dance Activity (FA, WI, SP,SU)	2-3	Area F	
* American Institutions Course – Choose Option I or II	Complete first course in chosen option – (note: must take both classes within same option) (FA, WI, SP, SU) – <i>see below</i>	3	Area E	
		<b>Term Total:</b>	<b>15-16</b>	

\*See notation below in text box titled “American Institutions Requirement” regarding options.

<b>Second Semester (16-30 Units)</b>				
Course	Title	Units	GE Area	
<b>WATER 131</b>	<b>Advanced Waterworks Mathematics (FA,SP)</b>	<b>3</b>	<b>Major - AS</b>	
<b>WATER 132</b>	<b>Water Supply (FA,SP) (8 weeks 100% online)</b>	<b>3</b>	<b>Major - AS</b>	
<b>WATER 135</b>	<b>Water Quality (FA,SP)</b>	<b>3</b>	<b>Major - AS</b>	
* American Institutions Course	Complete second course in chosen option – (note: must take both classes within same option) (FA, WI, SP, SU) – <i>see below</i>	3	Area E	
** Social Science Course	Choose one course from COC GE Area B (FA, WI, SP, SU) <i>The department recommends ENVRMT 101- Introduction to Environmental Studies</i>	3	Area B	
		<b>Term Total:</b>	<b>15</b>	

\*See notation below in text box titled “American Institutions Requirement” regarding options.

\*\*ENVRMT 101 is recommended by your department as it aligns nicely with your major; however, you may take any course within Area B to satisfy your Social Science GE.

Third Semester (31-45 Units)				
Course	Title	Units	GE Area	
Water 140 & 141 OR Water 150 & 151 OR WATER 160 & 161	Water Distribution Operator I & II (8 weeks each) (FA, SP) Water Treatment Plant Operation I & II (8 weeks each) (FA,SP) Wastewater Treatment and Disposal I & II (8 weeks each) (FA,SP)	6	Major – AS	
Natural Sciences Course	Choose one course from COC GE Area A ( <i>lab not required</i> ) (FA, WI, SP, SU)	3	Area A	
Communication and Analytical Thinking	Choose any math course from COC GE Area D2 (FA, WI, SP, SU) <b>A math course is recommended to meet also meet the Mathematics Competency Requirement.</b>	3-5	Area D2	
*** Humanities and Fine Arts	Choose one course from COC GE Area C (FA, WI, SP, SU)	3	Area C & Diversity	
		<b>Term Total:</b>	15-17	

\*\*\*Consider taking a humanities general education course GE Area C with an (\*) indication on the Associate Degree Requirements Checklist (pink GE pattern). Courses with an (\*) will also meet the GE Diversity Requirement. Refer to the Associate Degree Checklist for details.

Fourth Semester (46-60 Units)				
Course	Title	Units	GE Area	
Water 140 & 141 OR Water 150 & 151 OR WATER 160 & 161	Water Distribution Operator I & II (8 weeks each) (FA, SP) Water Treatment Plant Operation I & II (8weeks each) (FA,SP) Wastewater Treatment and Disposal I & II (8 weeks each) (FA,SP)	6	Electives – AS Must be a different sequence from course taken above	
Elective Course OR Diversity if not yet met	Choose any course that is an associate degree applicable course (FA, WI, SP, SU) OR Diversity Requirement (May double with other GE Notated with an Asterisk on the GE Checklist)	3	Elective or Diversity	
**** Elective Course	Choose any course that is an associate degree applicable course (FA, WI, SP, SU)	3	Elective	
**** Elective Course	Choose any course that is an associate degree applicable course (FA, WI, SP, SU)	3	Elective	
		<b>Term Total:</b>	15	

\*\*\*\*For Elective Courses, consider taking additional Water Courses (Water 140 & 141 or 150 & 151, or 160 & 161) that have not been completed yet.

Notes: In order to complete your AS degree in two years a minimum of 15 units per semester is necessary. You may consider taking winter/summer coursework to help lighten your load during fall/spring.

\*American Institutions Requirement – Select one of the options below and complete a total of 6 units

<b>Option 1</b>	One course from the following: Economics 170/170H, History 111/111H, History 112/112H, History 120/120H, or History 130 AND Political Science 150/150H (FA, WI, SP, SU)
<b>Option 2</b>	History 111/111H AND History 112/112H (FA, WI, SP, SU)

### Counseling Resources:

Water Systems Technology Department Website: [www.canyons.edu/water](http://www.canyons.edu/water)

Associate Degree Checklist:

<https://www.canyons.edu/resources/documents/studentservices/counseling/top10/AssociateDegreeRequirements20192020.pdf>

Petition for Certificate - petitions are due during the semester you complete your program

<https://www.canyons.edu/studentservices/admissions/records/forms.php>

[Petition for Associate Degree](https://www.canyons.edu/resources/documents/student-services/admissions/AR052PetitionForAssociateDegreeFillable.pdf)– petitions are due before the first Friday of the graduating term  
<https://www.canyons.edu/resources/documents/student-services/admissions/AR052PetitionForAssociateDegreeFillable.pdf>

### **Career Resources**

State of California Water Resource Control Board (SWRCB):

SWRCB Treatment and Distribution Operators

[https://www.waterboards.ca.gov/drinking\\_water/certlic/occupations/DWopcert.html](https://www.waterboards.ca.gov/drinking_water/certlic/occupations/DWopcert.html)

SWRCB Wastewater Operators

[https://www.waterboards.ca.gov/water\\_issues/programs/operator\\_certification/operator\\_certification.html](https://www.waterboards.ca.gov/water_issues/programs/operator_certification/operator_certification.html)

Water Systems Technology at College of the Canyons LinkedIn Group:

<https://www.linkedin.com/groups/13598869/>

What Can I Do With a Major In... <https://whatcanidowiththismajor.com/major/majors/>

California Career Zone – Water and Wastewater Treatment Plant and System Operators:

<https://www.cacareerzone.org/profile/51-8031.00>

O\*Net Online -Water and Wastewater Treatment Plant and System Operators:

<https://www.onetonline.org/link/summary/51-8031.00>

Bureau of Labor and Statistics - Water and Wastewater Treatment Plant and System Operators:

<https://www.bls.gov/ooh/production/water-and-wastewater-treatment-plant-and-system-operators.htm>

Professional Associations: <https://www.canyons.edu/academics/water/information/links.php>