



Water Quality Technology

<http://www.caspercollege.edu/assessment/index.html>

Instructions: To submit an assessment plan for a specified program, please respond to each of the questions below. *Use as much space as you need to describe the program assessment plan.* Once this form is completed, please email it as an attachment to ktatcher@caspercollege.edu. For guidelines and/or assistance in developing a plan for assessing student learning, please contact Kathleen Thatcher or consult resources on the Assessment website at <http://www.caspercollege.edu/assessment/index.html>.

1. **Program: Water Quality Technology**
2. **Department: Water Quality**
3. **School: Business & Industry**
4. **Person(s) Responsible for Developing Plan: Bill Mixer**
5. **Email: wmixer@caspercollege.edu**
6. **Phone: 307-268-2670**
6. **Date Submitted: April 2010**

1. Does this program offer distance learning ? Yes No

(*Note: Please complete a separate Assessment Plan form for each program.)

A. Conceptual Assessment Plan Components

Assessment enables an understanding of what students are learning as a result of the program. Assessment findings can be used for a variety of purposes including making decisions regarding curriculum and instruction as well as providing feedback to students.

1. *List your program's mission and goals.*
To provide an AAS Degree in Water Quality Technology and certificates in Water and Wastewater Treatment and Water Distribution and Wastewater Collection that will provide educational opportunities, a degree and or a certificate for students currently employed or seeking employment in the water and wastewater treatment and distribution and collection fields. The degree and certificates will also help prepare students to take and pass Wyoming operator certification exams and /or to further their skills and knowledge in a specific area that leads to employment and /or career advancement in the water and wastewater treatment and distribution and collection fields.
2. *List the student learning outcomes for the program addressed by this plan.* (Note: Please complete a separate Assessment Plan form for each program.)
 - Students will be able to correctly perform basic operational calculations for the operation of a water and wastewater system.

- Students will be able to use the internet to research current State and Federal water, wastewater and safety regulations.
 - Students will be able to describe the disinfection processes for water and wastewater.
 - Students will be able to explain primary and secondary treatment processes used in the treatment of wastewater.
 - Students will be able to explain the water filtration treatment processes.
 - Students will be able to explain the operation of a water distribution and wastewater collection systems operation.
3. *Explain the student learning outcomes relation to the unit mission and goals (i.e. Do the student learning outcomes reflect the unit goals and objectives, further the mission, are rooted in the academic discipline, etc.?)*

The learning outcomes for the degree and certificate programs and the course outcome and objectives all support the mission statement as they are focused on the students ability to successfully pass state certification exams and gain or maintain employment. The certificate program in particular is designed to help the student achieve the program mission.

4. *Describe how and by whom assessment findings will be used.*

The program head will analyze the assessment data to make changes in both the degree and certificate program curriculum and specific courses.

B. Implementation Assessment Plan Components

It is important to create a detailed implementation plan that aligns each student learning outcome with each of the following items:

- (A) how/where program outcomes are learned,
- (B) what evidence/indicator(s) will be collected, including both direct and indirect evidence,
- (C) how the evidence/indicator(s) will be collected and by whom,
- (D) how the evidence/indicator(s) will be analyzed and by whom, and
- (E) how assessment findings will be communicated back to the academic unit's faculty and students and used to improve the program.

Please note, it is important that the implementation plan collects useful information and that the collection and analysis methods are manageable given the resources available in your academic unit.

1. *Instructions:* For each program-level outcome (not course objectives), please provide information for each category listed below. Both direct and indirect evidence/indicators should be utilized in your assessment plan. You are encouraged to utilize existing evidence/indicators when feasible to keep the process manageable. You should also collect evidence/indicators throughout the program and not just at the end.

Program Learning Outcome	A How/Where is outcome learned?	B Evidence/ Indicator(s) of Learning	C Collection method(s) for each source of evidence	D Analysis method(s) for each source of evidence	E Feedback Procedures (Faculty, staff & students)
Explain the importance of disinfection	ENVT 1570 ENVT 1560	<ul style="list-style-type: none"> • Quizzes and exams • Class discussion question graded by rubric. • Course grades 	Instructor In class	Instructor Dean Question Statistical Analysis Rubric	Review with Dean and advisory board
Students will be able to explain primary and secondary treatment processes used in the treatment of wastewater.	ENVT 1570	<ul style="list-style-type: none"> • Quizzes and exams • Class discussion question graded by rubric. 	Instructor, in class	Instructor Dean Question Statistical Analysis Rubric	Review with Dean and advisory board
Students will be able to explain the operation of a water distribution and wastewater collection systems operation.	ENVT 1510 ENVT 1520 ENVT 1550	<ul style="list-style-type: none"> • Quizzes and exams • Class Project • Class discussion question graded by rubric. 	Instructor, in class	Instructor Dean Questions Statistical Analysis Rubric Project grade	Review with Dean and advisory board
Students will be able to use the internet to research current State and Federal water, wastewater and safety regulations.	ENVT 1570 ENVT 1560 ENVT 1510 ENVT 1520	Class online projects Discussion Questions	Instructor	Instructor Dean Project analysis	Review with Dean and advisory board
Students will be able to explain the water filtration treatment processes.	ENVT 1570	<ul style="list-style-type: none"> • Quizzes and exams • Class discussion question graded by rubric. 	Instructor	Instructor Dean Questions Statistical	Review with Dean and advisory board

				Analysis	
				Rubric	
Students will be able to correctly perform basic operational calculations for the operation of a water and wastewater system.	ENVT 1500 ENVT 1560 ENVT 1570 ENVT 2510 ENVT 2515	Quizzes and exams	Instructor	Instructor Dean Questions Statistical Analysis	Review with Dean and advisory board

- Describe the responsibilities, timeline, and the process for implementing this assessment plan.

Each year 1 – 2 of the outcomes will be reviewed provided that the course where the data lies have been offered. The data will be shared with advisory board members and school dean to see where and how improvements can be made. The responsibility for this data collection, choice of outcomes to analyze and analysis will be the department chair's. The data used will come from online test bank data analysis and course data collected by the department chair.

C. Global Design & Use

It is critical that program assessment plans be developed and approved by all faculty in the department. In addition, *include student input and external sources* (e.g., national standards, advisory boards, employers, alumni, etc.) in the development of the assessment plan(s).

- Describe the process through which your academic unit created this assessment plan.*

Include:

- Timeline regarding when or how often this plan will be reviewed and revised. (This could be aligned with your unit's departmental review schedule.)*

This analysis should take place at the end of the Spring semester so it can be shared with the advisory board in a summer or fall meeting.

- How students were included in the process and/or how student input was gathered and incorporated into the assessment plan.*

Currently, student input is not incorporated into the program but will be with the use of online course reviews.

- What external sources were consulted in the development of this assessment plan?*

The external sources consulted for the plan were:

- Associated Board of Certifications "Need to Know" criteria
- California State University's Outcomes for their manuals
- Water Quality Program Advisory board input

d. Assessment of the manageability of the plan in relation to departmental resources and personnel.

Providing this assessment greatest hurdle is time. Being a department of one and having the time to collect the data and analyze it is difficult. Also having the ability to collect the right data may not exist and as well as analyzing it properly. Having better background or training in this area would be very helpful or being able to have an assessment center where one could take their outcome data would also be of great benefit.