

Course Objectives/Course Outline

Spokane Community College

Course Title: Applied Research in Water Quality
Prefix and Course Number: ENVS 233

Applied Research courses are project based learning experiences - occupational experience with real world responsibilities

Applied Research performed by Environmental Sciences Department's Center for Applied Technology and Environmental Research (CATER) will enable students to demonstrate their skills by applying them to **real-world tangible projects**.

Applied Research courses emphasize critical thinking skills and understanding the big picture. Outcomes include:

- Problem solving and personal accountability will be required as students define problems, gather applicable information, perform analysis and produce professional reporting.
- Students and instructors will work in collaborative teams on projects with public and private entities.
- Prepare scientific findings for publication within the Center Environmental Research and of a caliber suitable for professional publications and conferences.
- Be proficient in collecting water quality samples, making field and laboratory measurements using a range of industry standard equipment.
- Develop and interpret sampling and analysis plans (SAP) and quality assurance project plans (QUAP).
- Able to prioritize safe work practices and identify work place hazards.

Applied Research in Water Quality - Course Outline

- I. Basics of Performing Applied Research in Environmental Sciences
 - a. Define the Problem
 - i. Research background information pertaining to project(s)
 - ii. Develop a conceptual model of the problem and environmental setting
 - iii. Plan work to be done
 - b. Gather Information
 - i. Gather specific information needed to achieve project work planned
 - ii. Data collection
 - c. Data Analysis / Installation
 - i. Process and analyze data gathered and determine if additional data or information are warranted
 - ii. Installation and/or additional on-site work
 - d. Reporting
 - i. Create professional articles, posters or presentations documenting the work
 - ii. Provide electronic records of the data collected and results of analysis performed.
- II. Applied Research in Water Quality - projects may include:
 - a. Use and maintenance of multiple parameter meters
 - b. Basic field/bench analysis
 - c. Sampling plans

d. Sample collection/analysis