Environmental Science | 2016-2017 Assessment Report

1. Please give a brief overview of the assessment data you collected this year.

   Env Sci 330 is an upper-level elective course for the major and minor. Enrollment was 22.

Assessment results:

Assessment was performed using the rubric below. In each category the percentage and (number) of students achieving each criteria is reported.

n= 22 students	Unsatisfactory	Developing	Satisfactory	Exemplary
Write correct water mass balance from written problem description	Fails to write water mass balance	Identifies at least 70% of mass balance terms from written problem statement	Identifies all but one mass balance term from written problem description 36.4%, (8)	Identifies all mass balance terms relevant to written problem description 63.6%, (14)
Apply appropriate mathematical models to estimate each term in mass balance	Fails to identify appropriate models for mass balance terms	Applies correct models for at least 70% of mass balance terms 13.6% (3)	Makes only one error in determining values of mass balance terms 31.8%, (7)	Applies appropriate math models for each term to correctly determine its numerical value 54.5%, (12)
Apply statistics to determine design storm	Fails to apply statistics	Applies some statistics, but fails to consider all factors	Applies statistics correctly, but makes math error 45.5%, (10)	Applies correct statistical models to determine design storm depth 54.5%, (12)
Convert each term in mass balance to volume of water	Fails to convert mass balance terms to volumes	Correctly converts at least 65% of mass balance terms to volumes	Makes only one error in converting mass balance terms to volumes 27.3%, (6)	Applies correct methodology to convert mass balance term to volumes 72.7%, (16)

Determine correct storm storage volume/depth	Fails to use mass balance or design storm to determine correct volume/depth	Makes more than one error in determining storage volume/depth 9.1%, (2)	Makes only one error in determining storage volume/depth 31.8%, (7)	Correctly determines storage volume/depth 59.1%, (13)
Convert given hydrograph into design storm hydrograph	Fails to model design storm hydrograph	Makes more than one error in modeling design storm hydrograph 27.3%, (6)	Makes only one error in modeling design storm hydrograph 27.3%, (6)	Correctly models design storm hydrograph 45.4%, (10)

2. How will you use what you've learned from the data that was collected?

ET 330: Outcome 3

The one area in which students seem to need improvement is in the mathematical modeling of hydraulic data to estimate terms in the hydrologic mass balance. Next fall, I will include more practice via homework and in-class assignments to help the students master modeling. Other than that, no significant changes are needed. I will emphasize the need to go over the project carefully before handing it in to avoid careless errors.