

DATA Reflections for CHEMISTRY 2011-2012

STANDARD 1 – STRUCTURE OF MATTER		
Assessment	Description / Analysis	Action?
5B CH152	As a whole, the seven students in the class performed at grade “C” level. One education student performed at a barely passing level, and the other performed at “C” level. My impression is that overall the students are not prepared for the level of studying required.	No action needed
STANDARD 2 – STATES AND PROPERTIES OF MATTER		
5C CH261	No education students	No action needed
STANDARD 3 – CHEMICAL REACTIONS		
5D CH262	No education students	No action needed
1a Praxis II Sub-score IV	No education students	No action needed
STANDARD 4 –SCIENTIFIC INQUIRY		
Capstone Research Project	No education students. Data for this standard cannot be collected via the rubric for this assessment in the version in the report for 2011-2012	Assessment (particularly the rubric) needs to be modified for collection of data specifically for this standard.
STANDARD 5 – TECHNOLOGY		
ED406	No education students	No action needed
1a Praxis II Sub-score VI	No education students	No action needed
STANDARD 6 – HUMAN ENDEAVOR, NATURE OF SCIENCE, HISTORICAL PERSPECTIVE		
5A CH151	As a whole, the fourteen students in the class performed at grade “C” level. One education student performed at the “C” level; the other performed at the “B” level. My impression is that overall the students are not prepared for the level of studying required.	No action needed
STANDARD 7 – UNIFYING DOMAINS		
7 End of Program Exam	No education students	No action needed
5E Biochemistry	No education students. Rubric doesn’t show how this Assessment meets this standard.	5E should be deleted as an assessment for Standard 7.
STANDARD 8 – TEACH SCIENCE EFFECTIVELY		
3 CTE Rubric overall	No education students	No action needed
STANDARD 9 – INTEGRATES SCIENCE WITH OTHER DISCIPLINES		
3 CTE Rubric Goal 1	No education students	No action needed
STANDARD 10 – RELATE TO STUDENT INTEREST AND DAILY LIFE		
2 KPTP Task 2	No education students	No action needed

Unit Plan		
STANDARD 11 – VARIETY OF TEACHING METHODS		
4 KPTP Task 3 Teaching	No education students	No action needed
STANDARD 12 – LEARNING ENVIRONMENT AND LAB SAFETY		
5F ED 406 Safety Plan	No education students	Assessment (particularly the rubric) needs to be modified for collection of data specifically for this standard.
1a Praxis II Sub-score VII	No education students	No action needed
STANDARD 13 – ONGOING PROFESSIONAL PRACTICE		
8 KPTP Task 4 Reflection	No education students	No action needed

Documentation of Department Discussions

Strengths of the Program

The program meets all standards.

Areas to Improve

For Standard 4, Assessment 6 (especially the rubric) needs to be modified to address the candidates' "understanding of the nature of inquiry and the ability to help students do scientific inquiry".

For Standard 5, the Natural Science Methods course (ED406) needs to include a specific rubric to sufficiently assess the required technology plan that will address Standard 5.

5E should be deleted as an assessment for Standard 7.

For Standard 12, the Natural Science Methods course (ED406) needs to include a specific rubric to sufficiently assess the required safety plan that will address this standard.

Changes / Updates / Topics for Discussion

(syllabi, college catalog, curriculum, specific courses, specific assessments, etc.)

For Standard 4 the syllabus (including the rubric) for Assessment 6 has been modified to address the candidates' "understanding of the nature of inquiry and the ability to help students do scientific inquiry". The pertinent modified parts of the syllabus are at the end of this document.

For Standards 5 and 12, the rubrics need to be modified to adequately assess the standards.

Partial Modified Syllabus for Senior Research Project (For Assessment 6 for Standard4)

Project Objectives: This project is designed for students to gain direct experience in the process of scientific inquiry. The project will involve students designing a research experiment to address a meaningful scientific question. To successfully complete the project the student must have a clear understanding of the process of scientific inquiry and be able to apply this understanding to the appropriate design of an actual experiment. The research findings will be presented to the class in the format of a scientific presentation.

Assignment description: Present an oral or poster presentation to the class and invited guests in the format of a scientific presentation. The presentation should focus on your research project and include these elements:

Title: The title should concisely convey the main focus of your research project.

Authors: What individuals contributed to conducting the experiment and analyzing the data?

Introduction: Include some background information related to the general topic that you are studying. This section must answer the questions: 1) What scientific question did you study? 2) Why is this an important question to study? 3) What was your hypothesis?

Methods: Explain in detail what you did for the experiment. This section should provide sufficient detail so that another scientist could replicate your experiment.

Answer the what, where, when, & how questions in this section. For example: What was your treatment? What was your control? How long did the experiment run? What was your sample size? What outcomes did you measure? How did you measure these outcomes? How did you analyze the data? What types of statistical tests did you run?

Results: The results section should explain the main findings of the experiment. A good results section should include several graphs or figures that show your results. Make sure and include a graph of your findings in the results section. The results section should avoid interpretation of the results (save this for the discussion) and should not report the same data in multiple ways. For instance, having a table and a graph that show the same data is redundant.

Discussion: The discussion section should include the following: What do your results mean? Explain the implications of your findings for the broader scientific community and provide a comparison of how your findings are similar/different than what other literature has reported. In addition, the discussion section can include the following: Should you support or reject your hypothesis? Why do you think the experiment turned out this way? What other related scientific questions arise from your findings?

These guidelines should be useful for writing scientific papers and also for preparing oral or poster presentations. Please follow these guidelines closely when preparing your final presentation for the course.

Project Presentation Grading Rubric:

1. Scientific inquiry (20 points out of 60 possible for the project)

20 points = Clear understanding of the nature of scientific inquiry and the ability to successfully perform scientific inquiry as evidenced by an appropriate experimental design, correct method of data analysis, and logical conclusions based on the experimental results.

10 points = Partial understanding of the nature of scientific inquiry and the ability to perform scientific inquiry as evidenced by either minor shortcomings in the experimental design, inadequate proposed methods of data analysis for one part of the experiment, or some of the conclusions not being fully supported by experimental results.

5 points = Lack of understanding of the nature of scientific inquiry and the ability to perform scientific inquiry as evidenced by an experimental design that is inadequate to address the experimental question, lack of proposed methods for analysis, or conclusions that are not at all supported by the results.