



## Student Learning Outcomes for HTEC 85A

*Clinical Chemistry I Laboratory*

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### Team Members:

**Team Leader:**

Debbie Wagner (8790) in HTEC

**Other members:**

1. Doris Spanggord (x8341) BIOL

**Additional team members/notes about team:**

Margaret Yamada

**Additional Notes:**

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### Outcomes:

**Outcome 1 Phase I: Statement**

Practice proper application of OSHA standards.

**Outcome 1 Phase II: Assessment Strategy Used:**

Assessment Quarter: Winter 2010

Assessors: Debbie Wagner Margaret Yamada

Assessment Tools:

Sections being assessed: 01

**Outcome 1 Phase III: Reflect & Enhance**

**Number of people involved in Phase III:** 2

**Changes:****Methods:**

Winter 2010 – a rubric was used to observe and document students practicing universal precautions in the laboratory.

**Findings and Conclusions:**

The mean student score on this SLO was 100% 100% safety compliance is a must for anyone planning a career in the clinical laboratory.

**Enhancement (Planned Actions)****Part I:**

No enhancement is planned, however safety will still be emphasized, observed and documented throughout the course .

**Part II:**

N/a

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**Outcome 2 Phase I: Statement**

Use proper techniques to perform serial diltion.

**Outcome 2 Phase II: Assessment Strategy Used:**

Assessment Quarter: Winter 2011

Assessors: Debbie Wagner

Assessment Tools: •

Sections being assessed: 61

**Outcome 2 Phase III: Reflect & Enhance**

**Number of people involved in Phase III:** 2

**Changes:****Methods:**

Midterm laboratory practical exam, question 37, required students to perform a 3 tube 3-fold serial dilution with a total volume or 3mL, showing calculations and dilutions in each tube.

**Findings and Conclusions:**

The mean student score on this question was 86%. This question required synthesis, analysis and critical thinking in order to solve. 86% is acceptable for this SLO.

**Enhancement (Planned Actions)****Part I:**

While the class mean was 86% on this question, one student scored 0 points. The instructor gave this student individualized attention for practice on this type of exercise. Serial dilutions will continue to be introduced early in the Clinical Chemistry laboratory course with several lab assignments as practice for this SLO. The MLT curriculum will continue to include this SLO as this is a technique required for entry level employment in this field.

**Part II:**

An MLT skills lab would be an ideal place for students struggling with the theory and technique of serial dilutions could obtain extra practice.

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**Outcome 3 Phase I: Statement**

Using spectrophotometer and proper techniques, dilute a given standard to establish a calibration curve. Analyze and determine the concentration of an unknown sample using the curve.

**Outcome 3 Phase II: Assessment Strategy Used:**

Assessment Quarter: Winter 2011

Assessors: Debbie Wagner

Assessment Tools: •

Sections being assessed: 61

**Outcome 3 Phase III: Reflect & Enhance**

**Number of people involved in Phase III:** 2

**Changes:**

**Methods:**

During the midterm and final laboratory practical exam, students were asked to dilute a given standard to prepare a calibration curve and then using that curve, determine the concentration of an unknown sample. Analysis was done using a spectrophotometer.

**Findings and Conclusions:**

On the midterm exam, the students were not required to dilute the standard, just analyze the standard given to them, construct the calibration curve and analyze unknowns. The mean course score on this exercise was 78%. Based on this outcome, the students were given more opportunity to practice this exercise and tested again on the final exam. This time they were required to dilute the standard, construct the curve and analyze unknowns. Mean student score was 74%, with 12 students scoring a passing score >75% and 5 students scoring well below 75%.

**Enhancement (Planned Actions)**

**Part I:**

This SLO requires critical thinking and can be a difficult concept for students to understand. However, in order to be prepared for clinical training, the students must have a successful student learning outcome on this concept. Students need more time and opportunity to grasp this concept and practice this technique. Chemistry laboratory exercises will continue to give students the opportunity to practice, and an additional exercise will be added to the course content. If we had a skills practice lab, the students would have more opportunity to practice this technique.

**Part II:**

The chemistry lab will add an additional exercise emphasizing this SLO, however a skills laboratory would be ideal for giving students time and opportunity to practice this important course concept.

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