

Course Outcomes Guide (COG)

Course Title: PHR 102, Pharmaceutical Calculations

Date: 8/25/2012

Course Team: Elaine Ashby

Expected Learning Outcomes:

- a. Accurately determine the correct amounts of ingredients required for a compounded product.
- b. Solve mathematical problems using Roman numerals, Arabic numerals, fractions, apothecary symbols, and decimals
- c. Solve mathematical problems involving conversion of weights and measures and direct ratio and proportion, using the techniques presented in class.
- d. Solve problems involving specific gravity, percent strength, weight-in-volume, weight-in-weight, and volume-in-volume conversions.
- e. Perform the mathematical steps required to solve problems involving ratio strength calculations for pharmaceutical preparations.
- f. Given mathematical problems involving dilution and concentration, perform the mathematical steps to solve for the correct answer.
- g. Use the alligation and/or algebraic method to solve problems involving dilution and concentrations.
- h. Students will accomplish objectives mandated by ASHP for accredited pharmacy technician programs.** (See attached)

Assessment (How do or will students demonstrate achievement of each outcome? Please attach a copy of your assessment electronically.)

See attached cumulative final*

Validation (What methods have you used or will you use to validate your assessment?)

- Student success on National Certification Exams for Pharmacy Technicians will be compared to success on the final exam questions.
- See attached

Results (What do your assessment data show? If you have not yet assessed student achievement of your learning outcomes, when is assessment planned?)

- Data was collected each semester comparing exam results and final grade for the course from Sp10 – Sp 12. Initial analysis of SP10- SP11 showed that students consistently passed the final with a 65 or higher and passed the class or did not pass either. This correlated with 100% pass rate of students taking the National PTCB exam.
- After analyzing results from the final in the fall of 2011, I noted that almost a third of students failed to earn a passing grade on the cumulative final, and this did not correlate to pass or fail for the class. Possible reasons for this low score were:
 - The exam had become a “low stakes exam”, because it was given at the end of finals week and students had earned most of their grade, even a failing score did not prevent them from passing.

- Students were not retaining material learned earlier in the semester.

Follow-up (How have you used or how will you use the data to improve student learning?)

- In the spring of 2012, the course policy was changed to turn the exam into a “high stakes exam”. The course syllabus now states, “. The final exam covers concepts necessary to pass the National Pharmacy Technician Certification Examination and will, therefore, be **cumulative** over the entire semester. Anyone who fails the final exam will be offered a second attempt. If they can not pass on the second attempt, they will earn a D or F for the class (depending on overall class results).”
- The change in policy seemed to increase student retention and final exam results. Two students were allowed to take the second exam twice with mixed success.

Budget Justification (What resources are necessary to improve student learning?)

- The pharmacy technician classes need to have a full-time program coordinator to focus on outcomes for all pharmacy technician courses and help students to succeed.



Pharmacy Technician Certification Board

2009 Annual Pharmacy Technician Training Report of the Pharmacy Technician Certification Examination for the Hagerstown Community College, 5353

Summary Results for Hagerstown Community College

Table with 2 columns: Metric and Value. Rows include: Number of Candidates Tested: 3; Number of Candidates Passed: 3; Percent Passing: 100.00%; Number of Candidates Failed: 0; Percent Failing: 0.00%.

Table with 6 columns: Exam Function, Maximum Scaled Scores, Range of Scaled Scores (Minimum, Maximum), Average Scaled Scores, Standard Deviation. Rows include: Assisting the Pharmacist Serving Patients; Maintain Medication and Inventory Control Systems; Administration and Pharmacy Practice; TOTAL:.

Candidates must obtain a total scaled score of at least 650 to pass the examination.



Pharmacy Technician Certification Board

2010 Annual Pharmacy Technician Training Report of the Pharmacy Technician Certification Examination for the Hagerstown Community College, 5353

Summary Results for Hagerstown Community College

Table with 2 columns: Metric and Value. Rows include: Number of Candidates Tested: 4; Number of Candidates Passed: 4; Percent Passing: 100.00%; Number of Candidates Failed: 0; Percent Failing: 0.00%.

Table with 5 columns: Exam Function Areas, Maximum Scaled Scores, Range of Scaled Scores (Minimum, Maximum), Average Scaled Scores, Standard Deviation. Rows include: Assisting the Pharmacist in Serving Patients; Maintain Medication and Inventory Control Systems; Administration and Management Pharmacy Practice; TOTAL:.

Candidates must obtain a total scaled score of at least 650 to pass the examination.