

Course Outcomes Guide (COG)

Directions: Please complete this form to document your progress toward improving student learning. For each item, indicate your progress and your anticipated next steps. Thank you!

Course Title: CHM 103

Date: May 2012

Course Team: Veronica Stein

Expected Learning Outcomes

1. Apply quantitative thinking processes and reasoning skills to physical laws, stoichiometry, and atomic and molecular structure.
2. Communicate core course concepts in writing while using appropriate technology
3. Solve quantitative chemistry problems and demonstrate reasoning clearly and completely. Integrate multiple ideas in the problem solving process. Check results to make sure they are physically reasonable.
4. Collect, analyze, and evaluate empirical data to substantiate chemical concepts.
5. Relate chemical concepts to real life scenarios

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

A Nationalized Final Exam written by the American Chemical Society (ACS) for the first semester of General Chemistry is used as the final exam for CHM 103.

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

We compare our students to the national average of the ACS exam.

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

Our students usually achieve the mean or higher for the national ACS exam in the last two years.

CHM 103		
Semester	n	mean
05/FA	51	33.7
06/SP	13	36.5
06/SU	5	56.4
06/FA	42	42.5

CHM 103			
07/SP	21	37.6	
07/SU	7	42.57	
07/FA	53	38.21	
08/SP	19	40.05	
08/SU	7	43.29	
08/FA	54	42.67	
09/SP	25	39.08	
09/Su	11	38.73	
National 2002 version	2616 from 32 colleges	41.03	out of 70 questions

CHM 103			
Semester	n	mean	
09/FA	58	41.1	
10/SP	23	34.6	
10/SU	10	46.7	
10/FA	74	39.8	
11/SP	31	35.7	
11/SU	23	41.0	
11/FA	52	40.9	
12/SP	34	37.1	
National 2009 version	3827 from 34 colleges	37.13	out of 70 questions

Follow-up (How have you used or how will you use the data to improve student learning?)
 In addition to determining the average, we perform an item analysis on the questions. From the item analysis, topic areas which are weak are determined and address in changing lecture material or lab experiments to better cover that concept.

Budget Justification (What resources are necessary to improve student learning?)
 Continue to purchase updated ACS exams.