

Chemistry
FELO Data for 1e: FA2020-SP2021

Learning Outcome: FELO 1e. Quantitative Reasoning

Students will be able to solve problems that are quantitative in nature.

Outcome Measure: Problems on the final exam that are quantitative in nature.

CHE101 / 1001 Chemistry and Society

CHE103 / 1003 Introduction to General, Organic, and Biological Chemistry

CHE152 / 1052 General Chemistry I

PSC110 Physical Science (chemistry portion)

PSC111 / 1014 Physical Science for Teachers (chemistry portion)

Criteria for Success: At least 70% of students will score 3 or higher.

Longitudinal Data:**CHE1001 (formerly CHE101)**

Assessment Data for FELO 1e. Quantitative Reasoning								
	Spring 2017	Spring 2018	Fall 2018	Spring 2019	Fall 2019	Spring 2020	Fall 2020	Spring 2021
Number of students	n=17	n=19	n=20	n=20	n=19	n=20	n=18	n=19
Percentage	88.2%	57.9%	50.0%	55.0%	47.4%	75.0%	77.8%	55.0%

CHE1003 (formerly CHE103)

Assessment Data for FELO 1e. Quantitative Reasoning									
	Spring 2017	Fall 2017	Spring 2018	Fall 2018	Spring 2019	Fall 2019	Spring 2020	Fall 2020	Spring 2021
Number of students	n=20	n=30	n=20	n=40	NA	n=29	n=20	n=33	n=19
Percentage	85.0%	86.7%	65.0%	90.0%	NA	89.7%	90.0	90.9%	47.4%

*No assessment data for FELO 1e in CHE103 Spring 2019, due to changes made to final exam.

CHE1052 (formerly CHE152)

		Assessment Data for FELO 1e. Quantitative Reasoning						
		Fall 2014	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020
Number of students		n=40	n=48	n=55	n=51	n=52	n=48	n=47
Percentage		80.0%	79.2%	89.1%	84.3%	96.2%	83.0%	76.6%

PSC1014 (formerly PSC110 & PSC111)

		Assessment Data for FELO 1e. Quantitative Reasoning							
		Fall 2015	Spring 2016	Fall 2016	Spring 2017	Fall 2017	Fall 2018	Fall 2019	Fall 2020
Number of students		n=20	n=20	n=20	n=18	n=20	n=19	n=20	n=20
Percentage		55.0%	95.0%	95.0%	94.4%	90.0%	63.2%	85.0%	70.0%

Conclusions Drawn from Data: FELO 1e (quantitative reasoning) is assessed in 4 of our 5 chemistry FE courses. For General Chemistry I (CHE 1052), our criteria for success were met with ease (average 84% over 7 years) however, for Chemistry and Society (CHE 1001), the criteria for success (70%) were only met for only 3 out of 8 times. This is concerning and we believe that part of the lack of success can be attributed to the adjunct teaching the course and part of it could be due to the assessment tool we used. Regarding PSC 1014 and CHE 1003, the criteria for success were met 75% of the time which is fairly good but could be improved.

Changes to be Made Based on Data: The chemistry department will meet at the beginning of the Fall 2021 semester to discuss how we assess our FE courses and whether or not the tools we are using are appropriate.

Rubric Used: The following scale was used.

	4	3	2	1
% of points earned on quantitative problems	80 – 100%	60 – 79%	40 – 59%	39% or lower