

Core Course Assessment Plan, 2021
Element 6: Natural Sciences

Please complete all sections; do not delete section information. Submit to Pilot when complete.

SECTION 1: GENERAL INFORMATION

Course Dept. Prefix: CHM Course #: 1210

Semester when assessment will occur: Spring Summer Fall Year: 2021

Course Title: General Chemistry I

Section Types and number of sections offered in Spring 2021. Complete all that apply.

<u>1</u> Dayton face-to-face	<u> </u> Lake face-to-face
<u>1</u> Dayton online	<u> </u> Lake online
<u> </u> Dayton Honors	<u> </u> Lake Honors

Attributes: Integrative Writing in Core
 Multicultural Competency in Core
 Service Learning in Core

Dept. Core Assessment Lead: Audrey McGowin audrey.mcgowin@wright.edu
Name email

List at least two assessors; this may include course instructor only if there are multiple sections and multiple instructors of the course. Note - The instructor may not assess his/her students' papers.

Michelle Newsome	Basil Naah
Rachel Aga	

SECTION 2: ASSESSMENT PLAN

It is preferable to have the assessment plan for all sections of a course. If not feasible, please complete an assessment plan for separate sections.

Course Outcomes. Check here if Outcomes have been modified.

The course must address all 5 outcomes but must assess a minimum of 1 outcome. Highlight in yellow the outcome(s) you will assess. If you have modified the outcomes, please insert here in place of standard outcomes.

1. Understand the nature of scientific inquiry;
2. Critically apply knowledge of scientific theory and methods of inquiry to evaluate information from a variety of sources;
3. Distinguish between science and technology and recognize their roles in society;
4. Demonstrate an awareness of theoretical, practical, creative and cultural dimensions of scientific inquiry; and
5. Discuss fundamental theories underlying modern science.

Assignments. Select **one** of the options below for assessment of one or more outcomes

“ Written assignment(s) that addresses/address outcome(s). Include outcome #, title and description for each assignment.

Outcome #: _____ Title:

Description of assignment:

“ Essay question(s). Provide the question(s) and outcome(s) below.

1. Outcome #: _____ Essay Question: _____
2. Outcome #: _____ Essay Question: _____
3. Outcome #: _____ Essay Question: _____

“ Pilot asynchronous written discussion that addresses outcome(s). Provide the outcome # and question(s).

1. Outcome #: _____ Discussion Question: _____
2. Outcome #: _____ Discussion Question: _____
3. Outcome #: _____ Discussion Question: _____

X Multiple Choice or T/F Marker questions – 3 to 4 questions per outcome. List the outcome and question numbers. A rubric is not used for Marker questions. “All the above” should not be used as the correct answer more than once. **Courses that are IW or SRV/SRVI must use written assignments for those attributes.** Complete the benchmark: We expect 50% of students to answer 75% of the question(s) correctly.

1. Outcome #: 2
 - a) Question: ACS 2015 First-Term General Chemistry #22 Grey /#21 Yellow
 - b) Question: ACS 2015 First-Term General Chemistry #30 Grey/#32 Yellow
 - c) Question: ACS 2015 First-Term General Chemistry #48 Grey/#51 Yellow
 - d) Question: ACS 2015 First-Term General Chemistry #58 Grey/#56 Yellow
2. Outcome #: _____
 - a) Question: _____
 - b) Question: _____
 - c) Question: _____
 - d) Question: _____
3. Outcome #: _____
 - a) Question: _____
 - b) Question: _____
 - c) Question: _____
 - d) Question: _____

Collecting and submitting the student assignment(s)

_____ Will upload assignment(s) to Pilot _____ Will give access to assignment(s) on Pilot

Other: _____ Email _____

SECTION 3: UCRC COMMITTEE REVIEW ONLY. DO NOT delete this section.

Item	Complete / NA / Revision Requested	Comments
Learning Outcomes for Element 6 Natural Science	Complete	
Assignments matched to Element 6 LOs	Complete	
Rubric for LOs	N/A	
Rubric for IW Attribute	N/A	
Assigned Approved Reviewers	Complete	

Committee Review Completed Committee Chair Signature Dr. Anne M. Bowling Date December 2018

Note: Report Template will be added to each of the individualized assessment plans to facilitate having one final document (assessment and report) for each course.

SECTION 4: ASSESSMENT REPORT

A separate report needs to be submitted for each assessment plan approved by the Undergraduate Core Oversight Committee (UCOC).

Element: Core Element 6 – Natural Science**Academic Year: Element 6 – Spring 2021****Dates: Spring 2021 Data Submitted****Course and Sections Assessed:****General Chemistry I CHM 1210-01 and 02 Spring 2021**

Describe the final assessment plan that was implemented and explain any changes made to the approved plan.

I. Core Learning Outcomes Assessed (list):

Critically apply knowledge of scientific theory and methods of inquiry to evaluate information from a variety of sources;

II. Procedures Used for Assessment

The ACS 2015 General Chemistry I Exam was administered to all students in person, Spring 2021. The committee chose 4 questions to evaluate Outcome #2.

III. Summary of Assessment Results:

All students were given the ACS First Term General Chemistry Exam in person on Wednesday, April 28, 2021.

Sample Size: 27 yellow, 28 grey

The results meet the benchmark (50% of the students will get 75% questions correct) set for Outcome #2

Question	ACS Grey (Percentage Correct)	ACS Yellow (Percentage Correct)
#22 Grey /#21 Yellow	81.48	85.19
#30 Grey /#32 Yellow	18.52	14.81
#48 Grey /#51 Yellow	77.78	77.78
#58 Grey /#56 Yellow	85.19	62.96

Clearly the topic in the second question set needs to be revisited and new instruction added to the curriculum.

ACS GREY	ACS YELLOW
53.5% of students achieved 75% correct	55.6% of students achieved 75 % correct

Benchmark Met Yes or No

If not met, please identify conditions (if any) that may have impacted these findings.

IV. ACTIONS TAKEN/PLANNED TO IMPROVE STUDENT LEARNING

Information was shared via email to all other CHM 1210 Instructors. The findings direct us all to explore why the material in #30/32 is not being understood by most students. This will direct our teaching. It is our goal to continually improve on the success rate for these four questions. ALEKS has been adopted and will be used by all instructors in the future semesters. The department has agreed to use an ALEKS PREP assignment to make sure students are properly placed in chemistry courses. We have also reduced course enrollments to make student/teacher interactions more possible. Research drives this change.

Assessment Administration Feedback

The assessment of the courses was part of the Core assessment cycle. The assessment plan was reviewed and approved by the UCOC. The UCOC provided a presentation on tools available to assist with the assessment, including Watermark Aqua.

Please describe any changes you recommend about the oversight of the assessment process by the UCOC and the Academic Affairs office.

UCOC Report Review

Item	Complete/NA	Revision Requested	Comments
Identified Outcome Assessed	XX		
Identified Procedure for Assessment	XX		
Summary of Results	XX		
Results Shared with Instructor, Dept Curriculum Committee, etc.	XX		
Plan for Improvements	XX		

Committee Review Completed XXX

Committee Chair Signature Dr. Anne M. Bowling Date 2/11/2022