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: X Spring  □ Summer  ___Fall  Year: 2021
Course Title: General Chemistry I

Section Types and number of sections offered in Spring 2021. Complete all that apply.
___1___ Dayton face-to-face  ______ Lake face-to-face
___1___ Dayton online  ______ Lake online
______ Dayton Honors  ______ 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.

<table>
<thead>
<tr>
<th>Item</th>
<th>Complete / NA / Revision Requested</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Outcomes for Element 6 Natural Science</td>
<td>Complete</td>
<td></td>
</tr>
<tr>
<td>Assignments matched to Element 6 LOs</td>
<td>Complete</td>
<td></td>
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<tr>
<td>Rubric for LOs</td>
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<tr>
<td>Rubric for IW Attribute</td>
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<tr>
<td>Assigned Approved Reviewers</td>
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Committee Review Completed ☐

Committee Chair Signature __________________________ Date __________

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
<table>
<thead>
<tr>
<th>Question</th>
<th>ACS Grey (Percentage Correct)</th>
<th>ACS Yellow (Percentage Correct)</th>
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<tbody>
<tr>
<td>#22 Grey/#21 Yellow</td>
<td>81.48</td>
<td>85.19</td>
</tr>
<tr>
<td>#30 Grey/#32 Yellow</td>
<td>18.52</td>
<td>14.81</td>
</tr>
<tr>
<td>#48 Grey/#51 Yellow</td>
<td>77.78</td>
<td>77.78</td>
</tr>
<tr>
<td>#58 Grey/#56 Yellow</td>
<td>85.19</td>
<td>62.96</td>
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</table>

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

<table>
<thead>
<tr>
<th>ACS GREY</th>
<th>ACS YELLOW</th>
</tr>
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<tbody>
<tr>
<td>53.5% of students achieved 75% correct</td>
<td>55.6% of students achieved 75 % correct</td>
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</table>

Benchmark Met  x 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

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<tbody>
<tr>
<td>Identified Outcome Assessed</td>
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<td>Identified Procedure for Assessment</td>
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<td>Summary of Results</td>
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<tr>
<td>Results Shared with Instructor, Dept Curriculum Committee, etc.</td>
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<tr>
<td>Plan for Improvements</td>
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**Committee Review Completed XXX**

Committee Chair Signature ___

Date __2/11/2022_________