

Neumann University Program Assessment Plan

Program Name: CHEMISTRY MINOR
Division: ARTS AND SCIENCES

Submitted by: Science Work Group-Sarah Burke
3-Year Cycle Span: AY 2021/2022 -2023/2024

<p>Student Learning Outcome Upon successful completion of the <u>Chemistry Minor</u> Program, the student will:</p>	<p>LO 1 Demonstrate a comprehensive understanding of fundamental chemistry concepts.</p> <p>Bloom: Know, Comprehend</p>	<p>LO 2 Perform a range of laboratory procedures that includes the latest in technological advances.</p> <p>Bloom: Apply</p>	<p>LO 3 Practice the scientific method and critical thinking to solve chemical problems, both individually and collaboratively.</p> <p>Bloom: Apply & Evaluate</p>	<p>LO 4 Demonstrate effective communication skills in both written and oral formats.</p> <p>Bloom: Apply</p>
<p>Core Learning Outcome(s):</p>	<p>Comprehension</p>	<p>Comprehension</p>	<p>Comprehension Communication</p>	<p>Communication</p>
<p>Related IDEA Objective(s):</p>	<p>CHEM 108: 1 (I) CHEM 211: 1 (E) CHEM 212: 1 (E) CHEM 312: 1 (E)</p>	<p>CHEM 322: 4 (I) BIO 455: 4 (E)</p>	<p>CHEM 118: 5 (E); 13 (I) CHEM 221: 3 (E); 5 (I); 13 (E) CHEM 222: 3 (E); 5 (I); 13 (E) CHEM 312: 3 (E); 13 (I)</p>	<p>CHEM 221: 3 (E); 8 (I) CHEM 222: 3 (E); 8 (I) BIO 450: 3 (I)</p>
<p>Course Mapping:</p>	<p>Formative: CHEM 108, CHEM 211, CHEM 212</p> <p>Summative: CHEM 312</p>	<p>Formative: CHEM 322</p> <p>Summative: BIO 455</p>	<p>Formative: CHEM 118, CHEM 221, CHEM 312</p> <p>Summative: CHEM 222</p>	<p>Formative: CHEM 221</p> <p>Summative: CHEM 222, BIO 450</p>
<p>Academic Year for Assessment:</p>	<p>AY 21/22</p>	<p>AY 22/23</p>	<p>AY 22/23</p>	<p>AY 23/24</p>
<p>Formative Assessment</p>	<p><u>CHEM 108: Final Exam</u> 70% of students will score 70% or above on the total score of a cumulative final exam</p> <p><u>CHEM 211: Final Exam</u> 55% of students will score 70% or above on the total score of a cumulative final exam</p>	<p><u>CHEM 322: Final Lab Practical</u> 70% of students will score a 70% or above on the total score for the lab practical final exam</p>	<p><u>CHEM 118: Kinetic Equilibrium Experiment</u> 70% of students will score a 70% or higher on their final grade for the kinetic equilibrium experiment</p> <p><u>CHEM 221: Thin Layer Chromatography of Analgesic Drugs Experiment</u> 80% of students will correctly identify three unknown analgesics using thin layer chromatography</p>	<p><u>CHEM 221: Isolation of Caffeine from Tea Leaves Formal Lab Report</u> 60% of the students will score a 2 average (developing) or higher on the faculty-developed <i>laboratory report rubric</i> (as evaluated by one fulltime faculty rater)</p>

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<p>Formative (continued)</p>	<p><u>CHEM 212: Final Exam</u> 55% of students will score 70% or above on the total score of a cumulative final exam</p>		<p><u>CHEM 312: Problem Set #1</u> 70% of students will score 70% or above on a set of lecture-related application problems</p>	
<p>Summative Assessment</p>	<p><u>CHEM 312: Final Exam</u> 80% of students will score 70% or above on the total score of a cumulative final exam</p>	<p><u>BIO 455: Laboratory Practical Skills Test</u> 80% of students will be score a 70% or above on a psychomotor evaluation</p>	<p><u>CHEM 222: UV-Vis Spectroscopy Experiment</u> 90% of students will correctly identify three unknowns (organic acid, organic base, and neutral organic compound) using UV-Vis spectroscopy</p>	<p><u>CHEM 222: Esterification Formal Lab Report</u> 70% of the students will score a 2 average (developing) or higher on the faculty-developed <i>laboratory report rubric</i> (as evaluated by one fulltime faculty rater)</p> <p><u>BIO 450: Primary Literature Oral Presentation</u> 70% of the students will score a 3 or higher on the faculty-developed <i>oral presentation rubric</i> (as evaluated by one fulltime faculty rater)</p>
<p>Indirect Evidence:</p>	<p>Student ratings on relevant objectives will be at or above the IDEA norm.</p>	<p>Student ratings on relevant objectives will be at or above the IDEA norm.</p>	<p>Student ratings on relevant objectives will be at or above the IDEA norm.</p>	<p>Student ratings on relevant objectives will be at or above the IDEA norm.</p>

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CHEMISTRY Minor Course List and Corresponding Assessment

COURSES	FORMATIVE	SUMMATIVE	INDIRECT	LO
CHEM 108 General Chemistry II	Final Exam	N/A	IDEA	1
CHEM 118 General Chemistry II Laboratory	Kinetic Equilibrium Experiment	N/A	IDEA	3
CHEM 211 Organic Chemistry I	Final Exam	N/A	IDEA	1
CHEM 221 Organic Chemistry I Laboratory	Thin Layer Chromatography of Analgesic Drugs Experiment Isolation of Caffeine From Tea Leaves Formal Lab Report	N/A	IDEA	3, 4
CHEM 212 Organic Chemistry II	Final Exam	N/A	IDEA	1
CHEM 222 Organic Chemistry II Laboratory	N/A	UV-Vis Spectroscopy Experiment Esterification Formal Lab Report	IDEA	3, 4
CHEM 312 Biochemistry	Problem Set #1	Final Exam	IDEA	1, 3
CHEM 322 Biochemistry Laboratory	Final Lab Practical	N/A	IDEA	2
BIO 450 Clinical Biochemistry	N/A	Primary Literature Oral Presentation	IDEA	4
BIO 455 Clinical Biochemistry Laboratory	N/A	Laboratory Practical Skills Test	IDEA	2