

Neumann University Assessment Plan

Program Name: BIOLOGY	Submitted by: Science Work Group, Sarah Burke Program Director: Patti Strobl, Department Head
Division: ARTS AND SCIENCES	3-Year Cycle Span: AY 2021/2022 -2023/2024

Student Learning Outcome Upon successful completion of the <u>Biology Program</u> , the student will:	LO 1 Describe the key concepts of biological and natural sciences. Bloom: Know	LO 2 Perform a range of laboratory procedures that includes the latest in technological advances. Bloom: Apply	LO 3 Practice the processes of science including using the scientific method, conducting literature searches, and writing reviews on scientific topics. Bloom: Apply & Evaluate	LO 4 Demonstrate effective communication skills in both written and oral formats. Bloom: Apply	LO 5 Select appropriate test methods and solve problems using critical thinking skills related to the life sciences. Bloom: Evaluate	LO 6 Demonstrate professional and ethical attitudes required of scientists including exploration of career opportunities and benefits of continuing education. Bloom: Apply & Evaluate
Core Learning Outcome(s)	Comprehension	Comprehension	Comprehension Communication	Communication	Comprehension	Conscience Contemplation
Related IDEA Objective(s)	BIO 107: 1 (E) BIO 108: 1 (E) BIO 233: 1 (E) BIO 325: 1 (E) PHY 108: I (E)	BIO 117: 4 (E) BIO 280/285: 3 (E); 4 (E) BIO 340: 3 (E); 4 (E) PHY 118: 3 (E); 4 (I)	BIO 118: 9 (E) BIO 232: 9 (I) BIO 458: 9 (E) BIO 459: 9 (E)	BIO 243: 8 (I) BIO 330: 8 (I) BIO 458: 8 (I)	BIO 290: 3 (E); 9 (I) BIO 335: 3 (E); 9 (I) BIO 459: 3 (I) ; 4 (E); 13 (E)	INT 101: 12 (I) BIO 242: 4 (I) BIO 495: 4 (E); 10 (E)
Course Mapping	Formative: BIO 107, BIO 108, PHY 108 Summative: BIO 325	Formative: BIO 117, BIO 280/285, PHY 118 Summative: BIO 340	Formative: BIO 118, BIO 232 Summative: BIO 458, BIO 459	Formative: BIO 243, BIO 330 Summative: BIO 458	Formative: BIO 290, BIO 335 Summative: BIO 459	Formative: INT 101, BIO 242 Summative: BIO 495
Academic Year for Assessment	AY 23/24	AY 23/24	AY 21/22	AY 21/22	AY 22/23	AY 22/23

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Formative Assessment	<p>BIO 107: Foundation Exam 50% of students will score 70% or higher on a test of basic cellular molecular concepts (Unit 4 Exam)</p> <p>BIO 108: Final Exam 60% of the students will score 70% or higher on the total score for a cumulative final exam</p> <p>BIO 233: Final Exam 65% of the students will score a 70% or higher for the total score for a cumulative final exam</p> <p>PHY 108: Final Exam 65% of the students will score a 70% or higher for the total score for a cumulative final exam</p>	<p>BIO 117: Microscopic Skills 70% of students will score a 2 or higher (out of 5) on the <i>Microscope Rubric Checklist</i></p> <p>BIO 280/285: PHAGE Project Oral Presentation 70% of students will score a 2.5 (between accomplished and developing) or above on relevant line items on the <i>PHAGE Oral Presentation Rubric</i></p> <p>PHY 118: Current Electricity Lab Report 75% of students will score a 70% or higher on the Current Electricity Lab Report</p>	<p>BIO 118: Poster Presentation of a Primary Science Paper 70% of students will score 70% online items 6 and 7 (reading and interpreting the paper, 150 points) on the <i>Presentation of a Primary Science Paper Rubric</i></p> <p>BIO 232: Primary Paper Review 70% of the students will score a 70% or higher on the <i>Primary Paper Review Rubric</i></p>	<p>BIO 243: Oral Presentation 70% of students will score a 70% or higher on the <i>Oral Presentation Rubric</i></p> <p>BIO 330: Literature Review Power Point Presentation: 70% of the students will score a 70% or higher on the <i>Power Point Oral Presentation Rubric</i></p>	<p>BIO 290: Final Poster Project 60% of students will score 70% or higher on the <i>Poster Presentation Rubric</i></p> <p>BIO 335: Identification of Unknown Microorganisms 70% of the students will select the appropriate laboratory tests 70% of the time to correctly identify the microorganisms in unknown specimens</p>	<p>INT 101: Reflection Paper 70% of the students will score a 70% or higher on the <i>Final Reflection Paper Rubric</i></p> <p>BIO 242: Service-Learning Project Reflection Paper 85% of the students will score an 80% or higher on the <i>Service-Learning Project Reflection Paper Rubric</i></p>

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<p>Student Learning Outcome Upon successful completion of the <u>Biology Program</u>, the student will:</p>	<p>LO 1 Describe the key concepts of biological and natural sciences.</p> <p>Bloom: Know</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 processes of science including using the scientific method, conducting literature searches, and writing reviews on scientific topics.</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>LO 5 Select appropriate test methods and solve problems using critical thinking skills related to the life sciences.</p> <p>Bloom: Evaluate</p>	<p>LO 6 Demonstrate professional and ethical attitudes required of scientists including exploration of career opportunities and benefits of continuing education.</p> <p>Bloom: Apply & Evaluate</p>
<p>Summative Assessment</p>	<p>BIO 325: Final Exam 70% of the students will score 70% or higher on the total score for a cumulative final exam</p>	<p>BIO 340: Lab Practical Final Exam 65% of students will score a 70% or higher on the Lab Practical Final Exam</p>	<p>BIO 458: Literature Review Paper 70% of the students will score a 3 or higher (by two fulltime faculty raters) on the <i>Literature Review Rubric</i></p> <p>BIO 459: Research Poster 70% of the students will score a 3 or higher (by two fulltime faculty raters) on related line items from the <i>Poster Assessment Rubric</i></p>	<p>BIO 458: Oral Presentation of Three Primary Literature Articles 70% of students will score a 3 or higher (by two fulltime faculty raters) on the <i>Power Point Oral Presentation Rubric</i></p> <p>BIO 458: Literature Review Paper 70% of the students will score a 3 or higher (by two fulltime faculty raters) on the <i>Literature Review Rubric</i></p>	<p>BIO 459: Research Poster 80% of the students will score a 3 or higher on relevant line items on the <i>Poster Assessment Rubric</i></p>	<p>BIO 495: Field Paper 80% of the students will score an 80% or higher on the <i>Field Paper Rubric</i></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>	<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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BIOLOGY Program Course List and Corresponding Assessment

COURSES	FORMATIVE	SUMMATIVE	INDIRECT	LO
INT 101	Reflection Paper	NA	IDEA	6
BIO 107 GENERAL BIO I	Foundation Exam	NA	IDEA	1
BIO 117 GENERAL BIO I LAB	Microscopic Skills	NA	IDEA	2
BIO 108 GENERAL BIO II	Final Exam	NA	IDEA	1
BIO 118 GENERAL BIO II LAB	Poster Presentation of a Primary Science Paper	NA	IDEA	3
BIO 232 GENETICS	Primary Paper Review	NA	IDEA	3
BIO 242 GENETICS LAB	Service Learning Project Reflection Paper	NA	IDEA	6
BIO 233 ECOLOGY	Final Exam	NA	IDEA	1
BIO 243 ECOLOGY LAB	Oral Presentation	NA	IDEA	4
BIO 280/285	PHAGE Project Oral Presentation	NA	IDEA	2
BIO 290	Final Poster Project	NA	IDEA	5
BIO 325 MICROBIOLOGY	NA	Final Exam	IDEA	1
BIO 335 MICROBIOLOGY LAB	Identification of Unknown Microorganisms	NA	IDEA	5
BIO 330 CELL MOL	Literature Review Power Point Presentation	NA	IDEA	4
BIO 340 CELL MOL LAB	NA	Lab Practical Final Exam	IDEA	2
BIO 458 SENIOR CAPSTONE I	NA	-Literature Review Paper -Oral Presentation of Three Primary Literature Articles	IDEA	3, 4
BIO 459 SENIOR CAPSTONE II	NA	Research Poster	IDEA	3, 5
BIO 495	NA	Field Paper	IDEA	6
PHY 108 PHYSICS II	Final Exam	NA	IDEA	1
PHY 118	Current Electricity Lab Report	NA	IDEA	2