

Weber State University  
Annual Assessment of Evidence of Learning

Cover Page

Department/Program: Zoology  
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Date Submitted: 11-15-2019  
Report author: Ron Meyers

Contact Information:  
Phone: 801-626-6170  
Email: [rmeyers@weber.edu](mailto:rmeyers@weber.edu)

**A. Brief Introductory Statement:**

Please review the Introductory Statement and contact information for your department displayed on the assessment site:

<http://www.weber.edu/portfolio/departments.html> - if this information is current, please place an 'X' below. No further information is needed. We will indicate "Last Reviewed: [current date]" on the page.

**Information is current; no changes required.**

**Information is not current; updates below.**

**B. Mission Statement**

Please review the Mission Statement for your department displayed on the assessment site: <http://www.weber.edu/portfolio/departments.html> - if it is current, please indicate as much; we will mark the web page as "Last Reviewed [current date]". No further information is needed.

If the information is not current, please provide an update:

**Information is current; no changes required.**

**Information is not current; updates below.**

**C. Student Learning Outcomes**

Please review the Student Learning Outcomes for your department displayed on the assessment site:

<http://www.weber.edu/portfolio/departments.html> - if they are current, please indicate as much; we will mark the web page as "Last Reviewed [current date]". No further information is needed.

If they are not current, please provide an update:

**Information is current; no changes required.**

**Information is not current; updates below.**

## D-1. Curriculum

Please review the Curriculum Grid for your department displayed on the assessment site: <http://www.weber.edu/portfolio/departments.html> - if it is current, please indicate as much; we will mark the web page as “Last Reviewed: [current data]”. No further information is needed.

If the curriculum grid is not current, please provide an update:

   **Information is current; no changes required.**

   **Information is not current; updates below**

**Zoology Curriculum Map: core courses required for Zoology major**  
Emphasis Ratings: I = Introduced, E = Emphasized, U = Utilized, A = Assessed Comprehensively

Number	Title	Hours	Concepts				Learning Outcomes				Competencies			
			1	2	3	4	5	6	1	2	3	4		
<b>Required courses</b>														
ZOOL 2220	Diversity of Animals	4	U	-	-	-	I	I	U	U	I	I		
ZOOL 3200	Cell Biology	4	U	A	U	-	A	E	A	A	A	-		
ZOOL 3300	Genetics	4	A	E	A	-	E	-	A	A	U	U		
ZOOL 3450	Ecology	4	I	-	-	A	-	A	U	A	A	E		
ZOOL 3600	Comparative Physiology	4	U	A	U	E	A	A	A	A	A	U		
ZOOL 3720	Evolution	3	A	-	E	E	E	-	A	I	A	A		
ZOOL 4990	Seminar	1	-	-	-	-	-	-	A	-	A	A		
<b>Elective courses (4 required)</b>														
ZOOL 3470	Zoogeography	3	U	-	-	E	-	E	A	-	A	-		
ZOOL 3500	Conservation Biology	3	U	-	I	U	I	I	I	U	U	E		
ZOOL 4050	Comparative Vertebrate Anatomy*	4	A	-	-	-	A	-	-	-	-	-		
ZOOL 4100	Vertebrate Embryology*	4	A	-	I	-	A	-	-	-	-	-		
ZOOL 4120	Histology	4	-	A	-	-	A	-	-	-	-	-		
ZOOL 4210	Advanced Human Physiology	4	-	U	I	-	A	A	A	U	A	I		
ZOOL 4220	Endocrinology	4	-	U	I	-	A	A	A	U	A	I		
ZOOL 4250	Radiation Biology*	4												
ZOOL 4500	Parasitology*	4	E	E	-	E	E	-	U	U	U	-		
ZOOL 4600	Protozoology*	4												
ZOOL 4300	Molecular Genetics	4	I	E	A	-	I	-	U	A	E	U		
ZOOL 4350	Animal Behavior	4	U	-	I	-	I	-	A	A	U	-		
ZOOL 4470	Wildlife Ecology & Management	4	E	-	-	A	-	A	A	A	A	A		
ZOOL 4480	Aquatic Ecology	4	E	-	-	A	E	A	-	A	-	E		
ZOOL 4490	Marine Ecology^	4	-	-	-	-	-	-	-	-	-	-		
ZOOL 4640	Entomology	4	I	-	-	I	A	-	-	-	-	-		
ZOOL 4650	Ichthyology	4	A	-	U	-	A	E	A	A	A	A		
ZOOL 4660	Herpetology	4	E	-	U	A	E	-	E	-	A	A		
ZOOL 4670	Ornithology	4	U	-	E	U	A	E	U	E	A	A		
ZOOL 4680	Mammalogy	4	A	-	U	-	A	-	A	A	A	A		
<b>Elective support courses</b>														
ZOOL 2100	Human Anatomy	4	-	I	-	-	I	-	-	-	-	-		

\* Course not recently taught and not currently in rotation

^ New course

**D-2. High Impact Educational Experiences in the Curriculum**

In response to the recent USHE requirement that all students have at least 1 HIEE in the first 30 credit hours and 1 HIEE in the major or minor we are asking programs to map HIEEs to curriculum using a traditional curriculum grid. This helps demonstrate how and where these goals are accomplished.

Courses	Department/Program use of High Impact Educational Experiences											
	Supplemental Instruction <sup>1</sup>	Research <sup>2</sup>	Writing <sup>3</sup>	Presentations <sup>4</sup>	In-Class Discussion <sup>5</sup>	Evidence-Based Learning <sup>6</sup>	Community Engagement <sup>7</sup>	Project-based Learning <sup>8</sup>	Techniques <sup>9</sup>	Team-based-Learning <sup>10</sup>	Internship <sup>11</sup>	Pre-Professional / Career Dev
1010 LS Animal Biology			✓				✓	✓		✓		
1020 LS Human Biology	✓	✓	✓			✓		✓		✓		
1030 LS The Nature of Sex						✓						
1110 LS Principles of Zoology	✓	✓	✓			✓		✓	✓	✓		
2220 Diversity of Animals	✓	✓	✓			✓		✓		✓		
3200 Cell Biology	✓	✓	✓	✓	✓	✓		✓	✓	✓		✓
3300 Genetics	✓	✓	✓		✓	✓		✓	✓	✓		✓
3450 Ecology		✓	✓	✓	✓	✓	✓	✓	✓	✓		
3600 Comparative Physiology	✓	✓	✓	✓	✓	✓		✓	✓	✓		
3720 Evolution			✓		✓	✓				✓		
4990 Seminar				✓	✓							
3470 Zoogeography			✓			✓				✓		
3500 Conservation Biology			✓	✓		✓				✓		
3730 Population Biology*												
4050 Comparative Vertebrate Anatomy*												
4100 Vertebrate Embryology*												

Courses	Department/Program use of High Impact Educational Experiences											
	Supplemental Instruction <sup>1</sup>	Research <sup>2</sup>	Writing <sup>3</sup>	Presentations <sup>4</sup>	In-Class Discussion <sup>5</sup>	Evidence-Based Learning <sup>6</sup>	Community Engagement <sup>7</sup>	Project-based Learning <sup>8</sup>	Techniques <sup>9</sup>	Team-based-Learning <sup>10</sup>	Internship <sup>11</sup>	Pre-Professional /Career Dev
4120 Histology			✓	✓	✓	✓				✓		✓
4210 Advanced Human Physiology		✓	✓			✓		✓		✓		
4220 Endocrinology		✓	✓			✓		✓		✓		
4300 Molecular Genetics		✓	✓	✓	✓	✓		✓	✓	✓		
4350 Animal Behavior		✓	✓	✓	✓				✓	✓		
4470 Wildlife Ecology and Management			✓	✓				✓		✓		
4480 Aquatic Ecology		✓	✓	✓				✓	✓	✓		
4490 Marine Ecology		✓	✓		✓	✓		✓	✓	✓		
4640 Entomology				✓				✓	✓			
4650 Ichthyology		✓	✓	✓		✓		✓	✓	✓		
4660 Herpetology			✓	✓		✓		✓	✓	✓		✓
4670 Ornithology		✓							✓			
4680 Mammalogy		✓	✓	✓	✓	✓		✓	✓	✓		
3099 Teaching the Human Anatomy Laboratory			✓	✓		✓	✓	✓		✓		✓
3100 Advanced Human Anatomy			✓	✓		✓	✓	✓		✓		✓
4890 Cooperative Work Experience											✓	✓
2100 Human Anatomy	✓					✓				✓		
2200 LS Human Physiology	✓		✓			✓		✓	✓	✓		

\* Not offered during the 2018/2019 report period

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- <sup>1</sup> Supplemental Instruction – Advanced/experience student(s) hold regular meetings
  - <sup>2</sup> Research – In-class research typically occurs in the laboratory, and includes data collection, hypothesis testing, exposure to literature and writing
  - <sup>3</sup> Writing – Courses may have lab reports/manuscripts; written homework; written exam questions
  - <sup>4</sup> Presentations – Students prepare and present to the class materials related to: research, discussion, and literature
  - <sup>5</sup> Discussion – Students read and discuss scientific literature
  - <sup>6</sup> Evidence-Based Learning – Classes utilize learning approaches that are “evidence-based”
  - <sup>7</sup> Community Engagement – e.g., student projects uploaded to public photo site; students lead tours of lab to local school and community groups
  - <sup>8</sup> Project-based Learning – Students engage in a project as a class, in small groups, or individually
  - <sup>9</sup> Techniques – Students learn and use scientific methodologies/techniques such as specimen cataloging, identifying animals, experimental techniques
  - <sup>10</sup> Team-based Learning – Students work in groups, collaborating on research, assignments, projects, including peer-review
  - <sup>11</sup> Students use work, volunteer, internship and externship experiences for “Zoology experience” credit

### **E. Assessment Plan**

Please update the Assessment Plan for your department displayed on the assessment site: <http://www.weber.edu/portfolio/departments.html>. Keep in mind that reporting will be done biennially instead of annually; that should be reflected in your assessment plan. Please ensure that Gen Ed courses are assessed/reported at least twice during a standard program review cycle.

A complete plan will include a list of courses from which data will be gathered and the schedule, as well as an overview of the assessment strategy the department is using (for example, portfolios, or a combination of Chi assessment data and student survey information, or industry certification exams, etc.), and plans for continuous improvement.

Assessment plan:

The plan is current.

## **F. Report of assessment results for the most previous academic year:**

There are varieties of ways in which departments can choose to show evidence of learning. This is one example. The critical pieces to include are 1) learning outcome being assessed, 2) method(s) of measurement used, 3) threshold for 'acceptable - that is, the target performance, 4) actual results of the assessment, 5) interpretation/reflection on findings 6) the course of action to be taken based upon the interpretation, and 7) how that action will be evaluated.



Evidence of Learning: **Courses within the Major**

A few courses within the major are being assessed.

I have discussed assessing courses in the major met with all faculty as a department and individually. Although it is still a challenge motivating instructors to actually follow through and assess, there has been improvement. It is also a challenge to coach them to assess in a way to produce the data as requested by the Office of Institutional Effectiveness. I am trying to figure out how I might better accomplish this goal.

**Zoology 2100 Human Anatomy – Fall 2018**

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 2100 Fall 2018; Spring 2019						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>1. EVOLUTION</b> The diversity of life is the result of mutation, adaptation, and selection pressure over time.	This outcome is not assessed for this course (see curriculum grid)					

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 2100 Fall 2018; Spring 2019						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>2. CELLULAR ORGANIZATION</b> All living things consist of one or more cells, the units of structure, function, and reproduction.	Students will demonstrate their understanding by performance answering exam questions focused on cells.	A set of multiple choice questions	At least 65% of students above 70%	72% above 70%	Threshold exceeded	Continue current practices.
		A set of 21 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 79%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 2100 Fall 2018; Spring 2019						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>3. GENETICS</b> All living things share basic genetic mechanisms, which are responsible for the organization and continuity of life.	This outcome is not assessed for this course (see curriculum grid)					

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 2100 Fall 2018; Spring 2019						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>4. ECOSYSTEMS</b> All organisms are interconnected, interacting with each other as well as with their dynamic environment.	This outcome is not assessed for this course (see curriculum grid)					

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 2100 Fall 2018; Spring 2019						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>5. STRUCTURE &amp; FUNCTION</b> There is a relationship between molecular and organismal structure and function.	Students will demonstrate their understanding by performance answering exam questions focused on structure-function relationships.	A set of multiple choice questions	At least 65% of students above 70%	65% above 70%	Threshold met	Continue current practices.
		A set of 108 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 83%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 2100 Fall 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>6. SYSTEMS REGULATION</b> Biological systems are governed by chemical transformations and homeostasis.	This outcome is not assessed for this course (see curriculum grid)					

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 2100 Fall 2018; Spring 2019						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>I. PROCESS OF SCIENCE</b> Students will use observational strategies to test hypotheses and critically evaluate experimental evidence.	This outcome is not assessed for this course (see curriculum grid)					

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 2100 Fall 2018; Spring 2019						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>II. QUANTITATIVE REASONING</b> Students will represent diverse experimental data sets graphically and apply statistical methods to them.	This outcome is not assessed for this course (see curriculum grid)					

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 2100 Fall 2018; Spring 2019						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>III. COMMUNICATION</b> Students will explain scientific concepts to different audiences and work collaboratively to explore biological problems.	This outcome is not assessed for this course (see curriculum grid)					

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 2100 Fall 2018; Spring 2019						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>IV. SCIENCE &amp; SOCIETY</b> Students will develop biological applications to evaluate and address societal problems.	This outcome is not assessed for this course (see curriculum grid)					

End of Zool 2100

**Zoology 2220 Diversity of Animals – Spring 2018**

<b><u>Evidence of Learning: Courses within the major</u></b>						
Course: ZOOL 2220 Spring 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>1. EVOLUTION</b> The diversity of life is the result of mutation, adaptation, and selection pressure over time.	Students will demonstrate their understanding by performance answering exam questions focused on evolution.	A set of 35 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 77%	Threshold exceeded	Continue current practices.

<b><u>Evidence of Learning: Courses within the major</u></b>						
Course: ZOOL 2220 Spring 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>2. CELLULAR ORGANIZATION</b> All living things consist of one or more cells, the units of structure, function, and reproduction.	This outcome is not assessed for this course (see curriculum grid)					

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 2220 Spring 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>3. GENETICS</b> All living things share basic genetic mechanisms, which are responsible for the organization and continuity of life.	This outcome is not assessed for this course (see curriculum grid)					

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 2220 Spring 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>4. ECOSYSTEMS</b> All organisms are interconnected, interacting with each other as well as with their dynamic environment.	This outcome is not assessed for this course (see curriculum grid)					



<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 2220 Spring 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>5. STRUCTURE &amp; FUNCTION</b> There is a relationship between molecular and organismal structure and function.	Students will demonstrate their understanding by performance answering exam questions focused on structure-function relationships.	A set of 35 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 78%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 2220 Spring 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>6. SYSTEMS REGULATION</b> Biological systems are governed by chemical transformations and homeostasis.	Students will demonstrate their understanding by performance answering exam questions focused on homeostasis.	A set of 13 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 77%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOO 2220 Spring 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>I. PROCESS OF SCIENCE</b> Students will use observational strategies to test hypotheses and critically evaluate experimental evidence.	Students will demonstrate their understanding by performance answering exam questions focused on how science is done.	A set of 12 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 75%	Threshold met	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOO 2220 Spring 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>II. QUANTITATIVE REASONING</b> Students will represent diverse experimental data sets graphically and apply statistical methods to them.	Students will demonstrate their understanding by performance answering exam questions focused on data sets and numerical literacy.	A set of 5 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 78%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 2220 Spring 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>III. COMMUNICATION</b> Students will explain scientific concepts to different audiences and work collaboratively to explore biological problems.	Students will demonstrate their understanding by performance answering exam questions focused on communicating information.	A set of 4 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 75%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 2220 Spring 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>IV. SCIENCE &amp; SOCIETY</b> Students will develop biological applications to evaluate and address societal problems.	Students will demonstrate their understanding by performance answering exam questions focused on science and society.	A set of 2 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 70%	Threshold met	Continue current practices.

End of Zool 2220

<b>Evidence of Learning Worksheet: Courses within the Major</b>						
<b>Course: Cell Biology Zool 3200 Fall 2018</b>						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>1. EVOLUTION</b>	Students are able to discuss how evolutionary forces have shaped animals physiology	Method 1: 4 exam questions  Method 2: Students interpret the results of a primary research article on evolution of the Zika virus by answering essay questions which are graded by a rubric	Method 1: Combined student performance of 72% or higher  Method 2: Combined student performance of 72% or higher	Method 1: Class average >78%  Method 2: Class average >82%	Threshold met  Threshold exceeded	Will discuss changing Emphasis Rating on Curriculum Grid from "Utilized" to "Emphasized" as it is not covered as much as other Learning Outcomes.
<b>2. CELLULAR ORGANIZATION</b>	Students are able to collect, analyze and/or discuss data about cellular function	Method 1: 88 exam questions	Combined student performance of 72% or higher	Method 1: Class average: 76%	Threshold met	Continue current practices.
<b>3. GENETICS</b>	Students are able to are able to collect, analyze and/or discuss data on how genetic changes/differences alter the physiology of animals	Method 1: 34 exam questions	Combined student performance of 72% or higher	Method 1: Class average:76%	Threshold met	Continue use of assessments. Will discuss changing Emphasis Rating on Curriculum Grid from "Introduced" to "Emphasized" or "Utilized" as it is covered more than other Learning Outcomes.
<b>4. ECOSYSTEMS</b>	Not assessed					

<b>Evidence of Learning Worksheet: Courses within the Major</b>						
<b>Course: Cell Biology Zool 3200 Fall 2018</b>						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>5. STRUCTURE &amp; FUNCTION</b>	Students are to collect, analyze and/or discuss data on how differences in protein expression lead to differences in cellular function which lead to differences in physiology.	Method 1: 21 exam questions	Combined student performance of 72% or higher	Method 1: Class average: 77%	Threshold met	Continue current practices.
<b>6. SYSTEMS REGULATION</b>	Students are to collect, analyze and/or discuss data on how animals maintain homeostasis despite changes in their internal or external environments.	Method 1: 14 exam questions	Combined student performance of 72% or higher	Method 1: Class average: 76%	Threshold met	Continue current practices.
<b>I. PROCESS OF SCIENCE</b>	Students are able to generate as well as test hypotheses. Students are able to collect and evaluate data as well interpret and evaluate already collected data.	Method 1: 9 exam questions  Method 2: Multi-week lab activity done in groups developing, implementing and evaluating methods to quantify the effects of cell type and temperature on cell motility. Students write a lab report graded via rubric.	Combined student performance of 72% or higher	Method 1: Class average: 88%  Method 2: Class average: 87%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning Worksheet: Courses within the Major</b>						
<b>Course: Cell Biology Zool 3200 Fall 2018</b>						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>II. QUANTITATIVE REASONING</b>	Students are able to analyze physiological data statistically and display data graphically.	Method 1: Lab activity done in groups developing, implementing and evaluating methods to quantify the effects of cell type and temperature on cell motility. Students must create graphs representing the data collected in a lab report. Graded via rubrics.	Combined student performance of 72% or higher	Method 1: Class average: 81%	Threshold exceeded	Continue current practices.
		Method 2: Students interpreted figures from a primary research article by answering essay questions which were graded with a rubric.		Method 2: 72%	Threshold met	

Evidence of Learning Worksheet: Courses within the Major						
Course: Cell Biology Zool 3200 Fall 2018						
Zoology Learning Outcome Assessed	Measurable Learning Outcome	Method of Measurement	Threshold for "Acceptable"	Results of Assessment	Interpretation of Findings	Action Plan/ Action evaluation
III. COMMUNICATION	Students can effectively communicate scientific information at different levels and can work collaboratively.	Method 1: Multi-week lab activity done in groups developing, implementing and evaluating methods to quantify the effects of cell type and temperature on cell motility. Students write a lab report graded via rubric.	Combined student performance of 72% or higher	Method 1: Class average: 91%	Threshold exceeded	Continue current practices. Will include assessment of group presentations next semester evaluated by a rubric.
		Method 2 Lab notebooks were completed for every experiment and graded 3 times by a rubric.		Method 2: Class average: 81%	Threshold exceeded	
IV. SCIENCE & SOCIETY	Not assessed					

End of Zool 3200

**Zoology 3450 Ecology – Fall 2018**

<b><u>Evidence of Learning: Courses within the major</u></b>						
Course: ZOOL 3450 Fall 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>1. EVOLUTION</b> The diversity of life is the result of mutation, adaptation, and selection pressure over time.	Students will demonstrate their understanding by performance answering exam questions focused on evolution.	A set of 6 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 98%	Threshold exceeded	Continue current practices.

<b><u>Evidence of Learning: Courses within the major</u></b>						
Course: ZOOL 3450 Fall 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>2. CELLULAR ORGANIZATION</b> All living things consist of one or more cells, the units of structure, function, and reproduction.	This outcome is not assessed for this course (see curriculum grid)					



<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 3450 Fall 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>3. GENETICS</b> All living things share basic genetic mechanisms, which are responsible for the organization and continuity of life.	Students will demonstrate their understanding by performance answering exam questions focused on genetics.	A set of 2 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 90%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 3450 Fall 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>4. ECOSYSTEMS</b> All organisms are interconnected, interacting with each other as well as with their dynamic environment.	Students will demonstrate their understanding by performance answering exam questions focused on ecosystems.	A set of 21 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 95%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 3450 Fall 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>5. STRUCTURE &amp; FUNCTION</b> There is a relationship between molecular and organismal structure and function.	This outcome is not assessed for this course (see curriculum grid)					

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 3450 Fall 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>6. SYSTEMS REGULATION</b> Biological systems are governed by chemical transformations and homeostasis.	Students will demonstrate their understanding by performance answering exam questions focused on physiology.	A set of 2 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 82%	Threshold exceeded	Continue current practices.
<b>I. PROCESS OF SCIENCE</b> Students will use observational strategies to test hypotheses and critically evaluate experimental evidence.	Students will demonstrate their understanding by performance answering exam questions focused on the process of science.	A set of 2 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 100%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 3450 Fall 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>II. QUANTITATIVE REASONING</b> Students will represent diverse experimental data sets graphically and apply statistical methods to them.	Students will demonstrate their understanding by performance answering exam questions focused on data analysis.	A set of 4 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 88%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOO 3450 Fall 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>III. COMMUNICATION</b> Students will explain scientific concepts to different audiences and work collaboratively to explore biological problems.	Students will demonstrate their understanding by performance answering exam questions focused on communicating scientific concepts.	1 multiple choice question	Combined student performance of 65% or higher	Combined student performance = 100%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOO 3450 Fall 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>IV. SCIENCE &amp; SOCIETY</b> Students will develop biological applications to evaluate and address societal problems.	Students will demonstrate their understanding by performance answering exam questions focused on science and society.	A set of 2 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 97%	Threshold exceeded	Continue current practices.

End of ZOO 3450

**Zoology 3500 Conservation Biology – Spring 2018**

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 3500 Spring 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>1. EVOLUTION</b> The diversity of life is the result of mutation, adaptation, and selection pressure over time.	Students will demonstrate their understanding by performance answering exam questions focused on evolution.	A set of 32 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 94%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 3500 Spring 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>2. CELLULAR ORGANIZATION</b> All living things consist of one or more cells, the units of structure, function, and reproduction.	This outcome is not assessed for this course (see curriculum grid)					

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 3500 Spring 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>3. GENETICS</b> All living things share basic genetic mechanisms, which are responsible for the organization and continuity of life.	Students will demonstrate their understanding by performance answering exam questions focused on genetics.	A set of 14 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 93%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 3500 Spring 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>4. ECOSYSTEMS</b> All organisms are interconnected, interacting with each other as well as with their dynamic environment.	Students will demonstrate their understanding by performance answering exam questions focused on ecology.	A set of 100 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 94%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 3500 Spring 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>5. STRUCTURE &amp; FUNCTION</b> There is a relationship between molecular and organismal structure and function.	Students will demonstrate their understanding by performance answering exam questions focused on structure and function.	A set of 13 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 86%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 3500 Spring 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>6. SYSTEMS REGULATION</b> Biological systems are governed by chemical transformations and homeostasis.	Students will demonstrate their understanding by performance answering exam questions focused on physiology.	A set of 27 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 95%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOO 3500 Spring 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>I. PROCESS OF SCIENCE</b> Students will use observational strategies to test hypotheses and critically evaluate experimental evidence.	Students will demonstrate their understanding by performance answering exam questions focused on hypothesis testing.	A set of 18 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 86%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOO 3500 Spring 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>II. QUANTITATIVE REASONING</b> Students will represent diverse experimental data sets graphically and apply statistical methods to them.	Students will demonstrate their understanding by performance answering exam questions focused on data analysis and statistics.	A set of 20 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 94%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 3500 Spring 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>III. COMMUNICATION</b> Students will explain scientific concepts to different audiences and work collaboratively to explore biological problems.	Students will demonstrate their understanding by performance answering exam questions focused on communicating scientific ideas.	A set of 84 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 94%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 3500 Spring 2018						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>IV. SCIENCE &amp; SOCIETY</b> Students will develop biological applications to evaluate and address societal problems.	Students will demonstrate their understanding by performance answering exam questions focused on society and science.	A set of 25 multiple choice 115	Combined student performance of 65% or higher	Combined student performance = 94%	Threshold exceeded	Continue current practices.

End of Zool 3500



## Zoology 3600 Comparative Physiology

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 3600 Fall 2017						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>1. EVOLUTION</b>	Students are able to discuss how evolutionary forces have shaped animals physiology	Method 1: 15 essay exam questions graded with scoring guide  Method 2: Lab activity with full lab report write up graded using a rubric	Method 1: Combined student performance of 72% or higher  Method 2: Class average Combined student performance of 72% or higher	Method 1: Class average was 85%  Method 2: Class average was 84%	Threshold exceeded  Threshold exceeded	Continue use of assessments
<b>2. CELLULAR ORGANIZATION</b>	Students are able to collect, analyze and/or discuss data about cellular function	Method 1: 16 essay exam questions graded with scoring guide  Method 2: Lab activity with full lab report write up graded using a rubric	Method 1: Combined student performance of 65% or higher  Method 2: Combined student performance of 72% or higher	Method 1: Class average was 82%  Method 2: Class average was 84%	Threshold exceeded  Threshold exceeded	Continue use of assessments
<b>3. GENETICS</b>	Students are able to are able to collect, analyze and/or discuss data on how genetic changes/differences alter the physiology of animals	Method 1: 4 essay exam questions graded with scoring guide Method 2: Lab activity with full lab report write up graded using a rubric	Method 1: Combined student performance of 72% or higher  Method 2: Class average Combined student performance of 72% or higher	Method 1: Class average was 83%  Method 2: Class average was 84%	Threshold exceeded  Threshold exceeded	Continue use of assessments
<b>4. ECOSYSTEMS</b>	Students are to collect, analyze and/or discuss data on physiological adaptations of animals to their environment and how physiology	Method 1: 11 essay exam questions graded with scoring guide	Method 1: Combined student performance of 72% or higher	Method 1: Class average was 86%	Threshold exceeded	Continue use of assessments

**Evidence of Learning: Courses within the major**

Course: ZOOL 3600 Fall 2017

<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
	determines the environments animals are able to live in	Method 2: Two lab activities with full lab report write ups graded using a rubric	Method 2: Combined student performance of 72% or higher	Method 2: Class average was 85%	Threshold exceeded	
<b>5. STRUCTURE &amp; FUNCTION</b>	Students are to collect, analyze and/or discuss data on how differences in protein expression lead to differences in cellular function which lead to differences in physiology	Method 1: 29 essay exam questions graded with scoring guide	Method 1: Combined student performance of 72% or higher	Method 1: Class average was 83%	Threshold exceeded	Continue use of assessments
		Method 2: Lab activity with full lab report write up graded using a rubric	Method 2: Class average Combined student performance of 72% or higher	Method 2: Class average was 80%	Threshold exceeded	
<b>6. SYSTEMS REGULATION</b>	Students are to collect, analyze and/or discuss data on how animals maintain homeostasis despite changes in their internal or external environments	Method 1: 38 essay exam questions graded with scoring guide	Method 1: Combined student performance of 72% or higher	Method 1: Class average was 81%	Threshold exceeded	Continue use of assessments
		Method 2: Two lab activities with full lab report write ups graded using a rubric	Method 2: Combined student performance of 72% or higher	Method 2: Class average was 82%	Threshold exceeded	
		Method 3: Two lab activities with worksheets involving data analysis and interpretation graded using a rubric	Method 3: Combined student performance of 72% or higher	Method 3: Class average was 88%	Threshold exceeded	
<b>I. PROCESS OF SCIENCE</b>	Students are able to generate as well as test hypotheses. Students are able to collect and evaluate data as well interpret and evaluate already collected data.	Method 1: 35 essay exam questions where figures had to be interpreted graded with scoring guide	Method 1: Combined student performance of 72% or higher	Method 1: Class average was 84%	Threshold exceeded	Continue use of assessments

**Evidence of Learning: Courses within the major**

Course: ZOOL 3600 Fall 2017

Zoology Learning Outcome Assessed	Measurable Learning Outcome	Method of Measurement	Threshold for "Acceptable"	Results of Assessment	Interpretation of Findings	Action Plan/ Action evaluation
		<p>Method 2: Three hypothesis driven lab activities with full lab report write ups graded using a rubric</p> <p>Method 3: Two hypothesis driven lab activities with worksheets involving data analysis and interpretation graded using a rubric</p>	<p>Method 2: Combined student performance of 72% or higher</p> <p>Method 3: Combined student performance of 72% or higher</p>	<p>Method 2: Class average was 83%</p> <p>Method 3: Class average was 88%</p>	<p>Threshold exceeded</p> <p>Threshold exceeded</p>	<p>Continue use of assessments</p> <p>Continue use of assessments</p>
<p><b>II. QUANTITATIVE REASONING</b></p>	<p>Students are able to analyze physiological data statistically and display data graphically.</p>	<p>Method 1: 20 essay exam questions where students had to calculate answers or make figures graded with scoring guide.</p> <p>Method 2: Four lab activities with full lab report write ups graded using a rubric</p> <p>Method 3: Three lab activities with worksheets involving data analysis and interpretation graded using a rubric</p>	<p>Method 1: Class average &gt;72%</p> <p>Method 2: Class average &gt;72%</p> <p>Method 3: Class average &gt;72%</p>	<p>Method 1: Class average was 78%</p> <p>Method 2: Class average was 83%</p> <p>Method 3: Class average was 88%</p>	<p>Threshold exceeded</p> <p>Threshold exceeded</p> <p>Threshold exceeded</p>	<p>Continue use of assessments</p> <p>Continue use of assessments</p> <p>Continue use of assessments</p>

**Evidence of Learning: Courses within the major**

Course: ZOOL 3600 Fall 2017

Zoology Learning Outcome Assessed	Measurable Learning Outcome	Method of Measurement	Threshold for "Acceptable"	Results of Assessment	Interpretation of Findings	Action Plan/ Action evaluation
<b>III. COMMUNICATION</b>		<p>Method 1: Three presentations with different formats graded by peer-review using a rubric</p> <p>Method 2: Lab activity where students collected data in groups and wrote a group lab report.</p>	<p>Method 1: Combined student performance of 72% or higher</p> <p>Method 2: Combined student performance of 72% or higher</p>	<p>Method 1: Class average was 92%</p> <p>Method 2: Class average was 84%</p>	<p>Threshold exceeded</p> <p>Threshold exceeded</p>	<p>Continue use of assessments</p>
<b>IV. SCIENCE &amp; SOCIETY</b>	<p>Students can effectively collect and analyze data that can be used to address a societal problem.</p>	<p>Method 1: Lab activity assessing effect of commonly consumed foods on blood glucose levels with worksheet that has essay questions about role of dietary choices on diabetes prevention/treatment. Graded using a rubric.</p>	<p>Method 1: Combined student performance of 72% or higher</p>	<p>Method 1: Class average was 90%</p>	<p>Threshold exceeded</p>	<p>Continue use of assessment</p>

\*Direct and indirect: at least one measure per objective must be a direct measure.

**Evidence of Learning: Courses within the major**

Course: ZOOL 3600 Fall 2018

<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>1. EVOLUTION</b>	Students are able to discuss how evolutionary forces have shaped animals physiology	Method 1: 12 essay exam questions graded with scoring guide Method 2: Lab activity with full lab report write up graded using a rubric	Method 1:  Class average >72%  Method 2:  Class average >72%	Method 1:  Class average was 87% Method 2:  Class average was 92%	Threshold exceeded    Threshold exceeded	Continue use of assessments
<b>2. CELLULAR ORGANIZATION</b>	Students are able to collect, analyze and/or discuss data about cellular function	Method 1: 14 essay exam questions graded with scoring guide Method 2: Lab activity with full lab report write up graded using a rubric	Method 1:  Class average >72%  Method 2:  Class average >72%	Method 1:  Class average was 84% Method 2:  Class average was 92%	Threshold exceeded    Threshold exceeded	Continue use of assessments
<b>3. GENETICS</b>	Students are able to are able to collect, analyze and/or discuss data on how genetic changes/differences alter the physiology of animals	Method 1: 5 essay exam questions graded with scoring guide Method 2: Lab activity with full lab report write up graded using a rubric	Method 1:  Class average >72%  Method 2:  Class average >72%	Method 1:  Class average was 86% Method 2:  Class average was 92%	Threshold exceeded    Threshold exceeded	Continue use of assessments
<b>4. ECOSYSTEMS</b>	Students are to collect, analyze and/or discuss data on physiological adaptations of animals to their environment and how physiology determines the environments animals are able to live in	Method 1: 18 essay exam questions graded with scoring guide Method 2: Two lab activities with full lab report write ups graded using a rubric	Method 1:  Class average >72%  Method 2:  Class average >72%	Method 1:  Class average was 84% Method 2:  Class average was 88%	Threshold exceeded    Threshold exceeded	Continue use of assessments

**Evidence of Learning: Courses within the major**

Course: ZOOL 3600 Fall 2018

<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>5. STRUCTURE &amp; FUNCTION</b>	Students are to collect, analyze and/or discuss data on how differences in protein expression lead to differences in cellular function which lead to differences in physiology	Method 1: 32 essay exam questions graded with scoring guide Method 2: Lab activity with full lab report write up graded using a rubric	Method 1:  Class average >72%  Method 2:  Class average >72%	Method 1:  Class average was 82% Method 2:  Class average was 84%	Threshold exceeded    Threshold exceeded	Continue use of assessments
<b>6. SYSTEMS REGULATION</b>	Students are to collect, analyze and/or discuss data on how animals maintain homeostasis despite changes in their internal or external environments	Method 1: 35 essay exam questions graded with scoring guide Method 2: Two lab activities with full lab report write ups graded using a rubric Method 3: Two lab activities with worksheets involving data analysis and interpretation graded using a rubric	Method 1:  Class average >72%  Method 2:  Class average >72%  Method 3:  Class average >72%	Method 1:  Class average was 82% Method 2:  Class average was 84%  Method 3:  Class average was 85%	Threshold exceeded   Threshold exceeded  Threshold exceeded	Continue use of assessments
<b>I. PROCESS OF SCIENCE</b>	Students are able to generate as well as test hypotheses. Students are able to collect and evaluate data as well interpret and evaluate already collected data.	Method 1: 31 essay exam questions where figures had to be interpreted graded with scoring guide Method 2: Three hypothesis driven lab activities with full lab report write ups graded using a rubric Method 3:	Method 1:  Class average >72%  Method 2:  Class average >72%	Method 1:  Class average was 86%  Method 2:  Class average was 86%	Threshold exceeded   Threshold exceeded	Continue use of assessments

**Evidence of Learning: Courses within the major**

Course: ZOOL 3600 Fall 2018

Zoology Learning Outcome Assessed	Measurable Learning Outcome	Method of Measurement	Threshold for "Acceptable"	Results of Assessment	Interpretation of Findings	Action Plan/ Action evaluation
		Two hypothesis driven lab activities with worksheets involving data analysis and interpretation graded using a rubric	Method 3:  Class average >72%	Method 3:  Class average was 85%	Threshold exceeded	
<b>II. QUANTITATIVE REASONING</b>	Students are able to analyze physiological data statistically and display data graphically.	Method 1: 12 essay exam questions where students had to calculate answers or make figures graded with scoring guide. Method 2: Four lab activities with full lab report write ups graded using a rubric Method 3: Three lab activities with worksheets involving data analysis and interpretation graded using a rubric	Method 1:  Class average >72%  Method 2:  Class average >72%  Method 3:  Class average >72%	Method 1:  Class average was 84% Method 2:  Class average was 83% Method 3:  Class average was 93%	Threshold exceeded  Threshold exceeded  Threshold exceeded	Continue use of assessments
<b>III. COMMUNICATION</b>	Students can effectively communicate scientific information at different levels and can work collaboratively.	Method 1: Three presentations with different formats graded by peer-review using a rubric Method 2: Lab activity where students collected data in groups and wrote a group lab report.	Method 1:  Class average >72%  Method 2:  Class average >72%	Method 1:  Class average was 84% Method 2:  Class average was 81%	Threshold exceeded  Threshold exceeded	Continue use of assessments

**Evidence of Learning: Courses within the major**

Course: ZOOL 3600 Fall 2018

<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>IV. SCIENCE &amp; SOCIETY</b>	Students can effectively collect and analyze data that can be used to address a societal problem.	Method 1: Lab activity assessing effect of commonly consumed foods on blood glucose levels with worksheet that has essay questions about role of dietary choices on diabetes prevention/treatment. Graded using a rubric.	Method 1: Class average >72%	Method 1: Class average was 92%	Threshold exceeded	Continue use of assessment

End of Zool 3600



**Zoology 4480 Aquatic Ecology - Fall 2017**

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 4480 Fall 2017						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>1. EVOLUTION</b> The diversity of life is the result of mutation, adaptation, and selection pressure over time.	Students will demonstrate their understanding by performance answering exam questions focused on evolution.	A set of 34 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 86%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 4480 Fall 2017						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>2. CELLULAR ORGANIZATION</b> All living things consist of one or more cells, the units of structure, function, and reproduction.	This outcome is not assessed for this course (see curriculum grid)					

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 4480 Fall 2017						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>3. GENETICS</b> All living things share basic genetic mechanisms, which are responsible for the organization and continuity of life.	This outcome is not assessed for this course (see curriculum grid)					

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 4480 Fall 2017						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>4. ECOSYSTEMS</b> All organisms are interconnected, interacting with each other as well as with their dynamic environment.	Students will demonstrate their understanding by performance answering exam questions focused on ecology.	A set of 133 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 88%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 4480 Fall 2017						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>5. STRUCTURE &amp; FUNCTION</b> There is a relationship between molecular and organismal structure and function.	Students will demonstrate their understanding by performance answering exam questions focused on structure-function relationships.	A set of 13 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 89%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 4480 Fall 2017						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>6. SYSTEMS REGULATION</b> Biological systems are governed by chemical transformations and homeostasis.	Students will demonstrate their understanding by performance answering exam questions focused on physiological processes.	A set of 69 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 88%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 4480 Fall 2017						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>I. PROCESS OF SCIENCE</b> Students will use observational strategies to test hypotheses and critically evaluate experimental evidence.	This outcome is not assessed for this course (see curriculum grid)					

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 4480 Fall 2017						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>II. QUANTITATIVE REASONING</b> Students will represent diverse experimental data sets graphically and apply statistical methods to them.	Students will demonstrate their understanding by performance answering exam questions focused on data analysis and statistics.	A set of 6 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 72%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 4480 Fall 2017						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>III. COMMUNICATION</b> Students will explain scientific concepts to different audiences and work collaboratively to explore biological problems.	This outcome is not assessed for this course (see curriculum grid)					

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOOL 4480 Fall 2017						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>IV. SCIENCE &amp; SOCIETY</b> Students will develop biological applications to evaluate and address societal problems.	Students will demonstrate their understanding by performance answering exam questions focused on science and society.	A set of 25 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 89%	Threshold exceeded	Continue current practices.

End of Zool 4480

**Zoology 4680 Mammalogy – Spring 2019**

<b>Evidence of Learning: Courses within the major</b>						
Course: ZOO 4680 Mammalogy Spring 2019						
<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>1. EVOLUTION</b>	Students are able to recognize, discuss and construct evolutionary relationships between mammals	Method 1: 20 essay exam questions graded with a scoring guide  Method 2: Lab activity involving phylogeny construction	Method 1:  Class average >72%  Method 2:  Class average >72%	Method 1:  Class average was 93%  Method 2:  Class average was 93%	Threshold exceeded    Threshold exceeded	Continue use of assessments
<b>2. CELLULAR ORGANIZATION</b>	This outcome is not assessed for this course (see curriculum grid)	Not evaluated	Not evaluated	Not evaluated	Not evaluated	Not evaluated
<b>3. GENETICS</b>	Students are able to discuss and utilize genetic information to explain relationships between and evolution of mammals.	Method 1: 6 essay questions graded with a scoring grid.  Method 2: Lab activity involving phylogeny construction using genetic sequences.	Method 1:  Class average >72%  Method 2:  Class average >72%	Method 1:  Class average was 93%  Method 2:  Class average was 93%	Threshold exceeded    Threshold exceeded	Continue use of assessments

**Evidence of Learning: Courses within the major**

Course: ZOOL 4680 Mammalogy Spring 2019

<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>4. ECOSYSTEMS</b>	Students are able to recognize, discuss and evaluate the role of mammals in ecosystems	Method 1: 13 essay exam questions graded with a scoring guide  Method 2: Multi-week lab activity developing, implementing and evaluating methods to quantify the density and diversity or behavior of mammals in Northern UT	Method 1:  Class average >72%  Method 2:  Class average >72%	Method 1:  Class average was 94%  Method 2:  Class average was 94%	Threshold exceeded    Threshold exceeded	Continue use of assessments
<b>5. STRUCTURE &amp; FUNCTION</b>	Students are able to recognize structural differences between mammals and discuss the functional consequences.	Method 1: 19 essay exam questions graded with a scoring guide  Method 2: Lab activities involving specimen identification using dichotomous keys with worksheets graded using a rubric  Method 3: Multi-week lab project digitizing mammal collection graded using self and peer-review rubrics	Method 1:  Class average >72%  Method 2:  Class average >72%  Method 3:  Class average >72%	Method 1:  Class average was 92%  Method 2:  Class average was 98%  Method 3:  Class average was 98%	Threshold exceeded    Threshold exceeded    Threshold exceeded	Continue use of assessments

**Evidence of Learning: Courses within the major**

Course: ZOO 4680 Mammalogy Spring 2019

<b>Zoology Learning Outcome Assessed</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>6. SYSTEMS REGULATION</b>	Students are able to discuss how mammals maintain homeostasis despite changes to their internal and external environments.	Method 1: 9 essay exam questions graded with a scoring guide	Method 1:  Class average >72%	Method 1:  Class average was 94%	Threshold exceeded	Continue use of assessments
<b>I. PROCESS OF SCIENCE</b>	Students are able to pose hypotheses, develop methods to test hypotheses, troubleshoot methodological challenges and analyze and interpret data.	Method 1: Multi-week lab activity developing, implementing and evaluating methods to quantify the density and diversity or behavior of mammals in Northern UT and peer-review	Method 1:  Class average >72%	Method 1:  Class average was 94%	Threshold exceeded	Continue use of assessments
<b>II. QUANTITATIVE REASONING</b>	Students are able to collect, analyze and display data in figures.	Method 1: Multi-week lab activity developing, implementing and evaluating methods to quantify the density and diversity or behavior of mammals in Northern UT	Method 1:  Class average >72%	Method 1:  Class average was 94%	Threshold exceeded	Continue use of assessments



**Evidence of Learning: Courses within the major**

Course: ZOO 4680 Mammalogy Spring 2019

Zoology Learning Outcome Assessed	Measurable Learning Outcome	Method of Measurement	Threshold for "Acceptable"	Results of Assessment	Interpretation of Findings	Action Plan/ Action evaluation
<p><b>III. COMMUNICATION</b></p>	<p>Students can effectively communicate scientific information at different levels and can work collaboratively.</p>	<p>Method 1: Three presentations with different formats graded by peer-review using a rubric.</p> <p>Method 2: Multi-week lab activity developing, implementing and evaluating methods to quantify the density and diversity or behavior of mammals in Northern UT</p>	<p>Method 1: Class average &gt;72%</p> <p>Method 2: Class average &gt;72%</p>	<p>Method 1: Class average was 96%</p> <p>Method 2: Class average was 94%</p>	<p>Threshold exceeded</p> <p>Threshold exceeded</p>	<p>Continue use of assessments</p>
<p><b>IV. SCIENCE &amp; SOCIETY</b></p>	<p>Students are able to collaboratively work to collect data for dissemination to community partners.</p>	<p>Method 1: Multi-week lab activity developing, implementing and evaluating methods to quantify the density and diversity or behavior of mammals in Northern UT</p> <p>Method 2: Multi-week lab project digitizing mammal collection to create a digital collection that could be accessed by outside groups graded using self and peer-review rubrics</p>	<p>Method 1: Class average &gt;72%</p> <p>Method 2: Class average &gt;72%</p>	<p>Method 1: Class average was 94%</p> <p>Method 2: Class average was 98%</p>	<p>Threshold exceeded</p> <p>Threshold exceeded</p>	<p>Continue use of assessments</p>

Evidence of Learning: Overall Major

Course: Seminar Zool 4990

Additional narrative:

During spring semester 2016 zoology majors enrolled in Zool 4990 participated in the Collegiate Learning Assessment (CLA) test. The CLA test evaluates critical-thinking and written-communication skills of college students. It measures analysis and problem-solving, scientific and quantitative reasoning, critical reading and evaluation, and critiquing argument, in addition to writing mechanics and effectiveness. Over 700 institutions—both in the United States and internationally—have used the CLA to benchmark value-added growth in student learning at their college or university compared to that of other institutions.

Results for the 12 zoology majors taking the test indicated a total score mean of 1110.25, which was below the campus-wide average of 1122.09. According to the CLA test criteria this indicates a score of “basic” to “proficient” on scale from “below basic” to “basic” to “proficient” to “advanced”.

**Zoology 1010 Animal Biology**

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1010						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Nature of Science.</b> Scientific knowledge is based on evidence that is repeatedly examined, and can change with new information. Scientific explanations differ fundamentally from those that are not scientific.	Students will demonstrate their understanding by performance answering exam questions focused on the nature of science.	A set of 14 multiple choice questions	Combined student performance of 65% or higher	No data this year		

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1010						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Integration of Science</b> All natural phenomena are interrelated and share basic organizational principles. Scientific explanations obtained from different disciplines should be cohesive and integrated.	Students will demonstrate their understanding by performance answering exam questions focused on the integration of science.	A set of 10 multiple choice questions	Combined student performance of 65% or higher	No data this year		

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOO 1010						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Science and Society</b> The study of science provides explanations that have significant impact on society, including technological advancements, improvement of human life, and better understanding of human and other influences on the earth's environment.	Students will demonstrate their understanding by performance answering exam questions focused on science and society.	A set of 4 multiple choice questions	Combined student performance of 65% or higher	No data this year		

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOO 1010						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Problem Solving &amp; Data Analysis</b> Science relies on empirical data, and such data must be analyzed, interpreted, and generalized in a rigorous manner.	Students will demonstrate their understanding by performance answering exam questions focused on problem solving and data analysis.	This goal was not assessed.		No data this year		

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOO 1010						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Levels of Organization</b> All life shares an organization that is based on molecules and cells and extends to organisms and ecosystems.	Students will demonstrate their understanding by performance answering exam questions focused on levels of organization.	A set of 18 multiple choice questions	Combined student performance of 65% or higher	No data this year		

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOO 1010						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Metabolism and homeostasis:</b> Living things obtain and use energy, and maintain homeostasis via organized chemical reactions known as metabolism.	Students will demonstrate their understanding by performance answering exam questions focused on metabolism and homeostasis.	A set of 14 multiple choice questions	Combined student performance of 65% or higher	No data this year		

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOO 1010						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Genetics and evolution:</b> Shared genetic processes and evolution by natural selection are universal features of all life	Students will demonstrate their understanding by performance answering exam questions focused on genetics and evolution.	A set of 38 multiple choice questions	Combined student performance of 65% or higher	No data this year		

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOO 1010						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Ecological interactions:</b> All organisms, including humans, interact with their environment and other living organisms.	Students will demonstrate their understanding by performance answering exam questions focused on ecological interactions.	A set of 29 multiple choice questions	Combined student performance of 65% or higher	No data this year		

End of Zool 1010

**Zoology 1020 Human Biology – Fall 2017 & Spring 2018**

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1020 – Fall & Spring 2017-18, two sections combined; Fall 2018 (one section), Spring 2019 (two sections)						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Nature of Science.</b> Scientific knowledge is based on evidence that is repeatedly examined, and can change with new information. Scientific explanations differ fundamentally from those that are not scientific.	Students will demonstrate their understanding by performance answering exam questions focused on the nature of science.	A set of 21 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 76%	Threshold exceeded	Continue current practices.
		A set of multiple choice questions	At least 70% of students above 70%	73% above 70%	Threshold exceeded	Continue current practices.
				77% above 70%		
82% above 70%						

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1020 – Fall & Spring 2017-18, two sections combined; Fall 2018 (one section), Spring 2019 (two sections)						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Integration of Science</b> All natural phenomena are interrelated and share basic organizational principles. Scientific explanations obtained from different disciplines should be cohesive and integrated.	Students will demonstrate their understanding by performance answering exam questions focused on the integration of science.	A set of 40 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 72%	Threshold exceeded	Continue current practices.
		A set of multiple choice questions	At least 70% of students above 70%	83% above 70%	Threshold exceeded	Continue current practices.
				77% above 70%		
86% above 70%						

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1020 – Fall & Spring 2017-18, two sections combined; Fall 2018 (one section), Spring 2019 (two sections)						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Science and Society</b> The study of science provides explanations that have significant impact on society, including technological advancements, improvement of human life, and better understanding of human and other influences on the earth’s environment.	Students will demonstrate their understanding by performance answering exam questions focused on science and society.	A set of 42 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 83%	Threshold exceeded	Continue current practices.
		A set of multiple choice questions	At least 70% of students above 70%	89% above 70%	Threshold exceeded	Continue current practices.
				81% above 70%		
				93% above 70%		

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1020 – Fall & Spring 2017-18, two sections combined; Fall 2018 (one section), Spring 2019 (two sections)						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Problem Solving &amp; Data Analysis</b> Science relies on empirical data, and such data must be analyzed, interpreted, and generalized in a rigorous manner.	Students will demonstrate their understanding by performance answering exam questions focused on problem solving and data analysis.	A set of 10 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 75%	Threshold exceeded	Continue current practices.
		A set of multiple choice questions	At least 70% of students above 70%	86% above 70%	Threshold exceeded	Continue current practices.
				88% above 70%		
				96% above 70%		



<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1020 – Fall & Spring 2017-18, two sections combined; Fall 2018 (one section), Spring 2019 (two sections)						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Levels of Organization</b> All life shares an organization that is based on molecules and cells and extends to organisms and ecosystems.	Students will demonstrate their understanding by performance answering exam questions focused on levels of organization.	A set of 72 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 74%	Threshold exceeded	Continue current practices.
		A set of multiple choice questions	At least 70% of students above 70%	78% above 70%	Threshold exceeded	Continue current practices.
				85% above 70%		
82% above 70%						

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1020 – Fall & Spring 2017-18, two sections combined; Fall 2018 (one section), Spring 2019 (two sections)						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Metabolism and homeostasis:</b> Living things obtain and use energy, and maintain homeostasis via organized chemical reactions known as metabolism.	Students will demonstrate their understanding by performance answering exam questions focused on metabolism and homeostasis.	A set of 24 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 76%	Threshold exceeded	Continue current practices.
		A set of multiple choice questions	At least 70% of students above 70%	86% above 70%	Threshold exceeded	Continue current practices.
				88% above 70%		
86% above 70%						

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1020 – Fall & Spring 2017-18, two sections combined; Fall 2018 (one section), Spring 2019 (two sections)						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Genetics and evolution:</b> Shared genetic processes and evolution by natural selection are universal features of all life	Students will demonstrate their understanding by performance answering exam questions focused on genetics and evolution.	A set of 42 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 80%	Threshold exceeded	Continue current practices.
				A set of multiple choice questions		
				85% above 70%		
				93% above 70%		

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1020 – Fall & Spring 2017-18, two sections combined; Fall 2018 (one section), Spring 2019 (two sections)						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Ecological interactions:</b> All organisms, including humans, interact with their environment and other living organisms.	Students will demonstrate their understanding by performance answering exam questions focused on ecological interactions.	A set of 28 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 87%	Threshold exceeded	Continue current practices.
				A set of multiple choice questions		
				96% above 70%		
				96% above 70%		

End of Zool 1020

**Zoology 1030 Nature of Sex**

<b><u>Evidence of Learning: General Education, Life Science Courses</u></b>						
Course: ZOOL 1030 – Summer, Fall, & Spring 2017-2018						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Nature of Science.</b> Scientific knowledge is based on evidence that is repeatedly examined, and can change with new information. Scientific explanations differ fundamentally from those that are not scientific.	Students will demonstrate their understanding by performance answering exam questions focused on the nature of science.	A set of 13 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 80%	Threshold exceeded	Continue current practices.
				Combined student performance = 83%		
				Combined student performance = 81%		

<b><u>Evidence of Learning: General Education, Life Science Courses</u></b>						
Course: ZOOL 1030 – Summer, Fall, & Spring 2017-2018						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Integration of Science</b> All natural phenomena are interrelated and share basic organizational principles. Scientific explanations obtained from different disciplines should be cohesive and integrated.	Students will demonstrate their understanding by performance answering exam questions focused on the integration of science.	A set of 7 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 87%	Threshold exceeded	Continue current practices.
				Combined student performance = 88%		
				Combined student performance = 85%		

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1030 – Summer, Fall, & Spring 2017-2018						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Science and Society</b> The study of science provides explanations that have significant impact on society, including technological advancements, improvement of human life, and better understanding of human and other influences on the earth’s environment.	Students will demonstrate their understanding by performance answering exam questions focused on science and society.	A set of 6 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 82%	Threshold exceeded	Continue current practices.
				Combined student performance = 81%		
				Combined student performance = 84%		

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1030 – Summer, Fall, & Spring 2017-2018						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Problem Solving &amp; Data Analysis</b> Science relies on empirical data, and such data must be analyzed, interpreted, and generalized in a rigorous manner.	Students will demonstrate their understanding by performance answering exam questions focused on problem solving and data analysis.	A set of 16 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 82%	Threshold exceeded	Continue current practices.
				Combined student performance = 83%		
				Combined student performance = 84%		

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOO 1030 – Summer, Fall, & Spring 2017-2018						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Levels of Organization</b> All life shares an organization that is based on molecules and cells and extends to organisms and ecosystems.	Students will demonstrate their understanding by performance answering exam questions focused on levels of organization.	A set of 5 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 78%	Threshold exceeded	Continue current practices.
				Combined student performance = 84%		
				Combined student performance = 78%		

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOO 1030 – Summer, Fall, & Spring 2017-2018						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Metabolism and homeostasis:</b> Living things obtain and use energy, and maintain homeostasis via organized chemical reactions known as metabolism.	Students will demonstrate their understanding by performance answering exam questions focused on metabolism and homeostasis.	A set of 9 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 88%	Threshold exceeded	Continue current practices.
				Combined student performance = 89%		
				Combined student performance = 89%		

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1030 – Summer, Fall, & Spring 2017-2018						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Genetics and evolution:</b> Shared genetic processes and evolution by natural selection are universal features of all life	Students will demonstrate their understanding by performance answering exam questions focused on genetics and evolution.	A set of 20 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 82%	Threshold exceeded	Continue current practices.
				Combined student performance = 82%		
				Combined student performance = 83%		

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1030 – Summer, Fall, & Spring 2017-2018						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for “Acceptable”</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Ecological interactions:</b> All organisms, including humans, interact with their environment and other living organisms.	Students will demonstrate their understanding by performance answering exam questions focused on ecological interactions.	A set of 8 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 80%	Threshold exceeded	Continue current practices.
				Combined student performance = 80%		
				Combined student performance = 78%		

End of Zool 1030

**Zoology 1110 Principles of Zoology**

<b><u>Evidence of Learning: General Education, Life Science Courses</u></b>						
Course: ZOOL 1110 Spring 2019						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Nature of Science.</b> Scientific knowledge is based on evidence that is repeatedly examined, and can change with new information. Scientific explanations differ fundamentally from those that are not scientific.	Students will demonstrate their understanding by performance answering exam questions focused on the nature of science.	A set of 92 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 85%	Threshold exceeded	Continue current practices.

<b><u>Evidence of Learning: General Education, Life Science Courses</u></b>						
Course: ZOOL 1110 Spring 2019						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Integration of Science</b> All natural phenomena are interrelated and share basic organizational principles. Scientific explanations obtained from different disciplines should be cohesive and integrated.	Students will demonstrate their understanding by performance answering exam questions focused on the integration of science.	A set of 86 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 74%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1110 Spring 2019						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Science and Society</b> The study of science provides explanations that have significant impact on society, including technological advancements, improvement of human life, and better understanding of human and other influences on the earth's environment.	Students will demonstrate their understanding by performance answering exam questions focused on science and society.	A set of 143 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 82%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1110 Spring 2019						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Problem Solving &amp; Data Analysis</b> Science relies on empirical data, and such data must be analyzed, interpreted, and generalized in a rigorous manner.	Students will demonstrate their understanding by performance answering exam questions focused on problem solving and data analysis.	A set of 122 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 85%	Threshold exceeded	Continue current practices.



<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1110 Spring 2019						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Levels of Organization</b> All life shares an organization that is based on molecules and cells and extends to organisms and ecosystems.	Students will demonstrate their understanding by performance answering exam questions focused on levels of organization.	A set of 44 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 84%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1110 Spring 2019						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Metabolism and homeostasis:</b> Living things obtain and use energy, and maintain homeostasis via organized chemical reactions known as metabolism.	Students will demonstrate their understanding by performance answering exam questions focused on metabolism and homeostasis.	A set of 102 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 80%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1110 Spring 2019						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Genetics and evolution:</b> Shared genetic processes and evolution by natural selection are universal features of all life	Students will demonstrate their understanding by performance answering exam questions focused on genetics and evolution.	A set of 27 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 82%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1110 Spring 2019						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Ecological interactions:</b> All organisms, including humans, interact with their environment and other living organisms.	Students will demonstrate their understanding by performance answering exam questions focused on ecological interactions.	A set of 111 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 81%	Threshold exceeded	Continue current practices.

End of Zool 1110

**Botany/Microbiology/Zoology 1370 Principles of Life Science Spring 2018**

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1370 Spring 2018						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Nature of Science.</b> Scientific knowledge is based on evidence that is repeatedly examined, and can change with new information. Scientific explanations differ fundamentally from those that are not scientific.	Students will demonstrate their understanding by performance answering exam questions focused on the nature of science.	A set of 27 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 72%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1370 Spring 2018						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Integration of Science</b> All natural phenomena are interrelated and share basic organizational principles. Scientific explanations obtained from different disciplines should be cohesive and integrated.	Students will demonstrate their understanding by performance answering exam questions focused on the integration of science.	A set of 17 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 72%	Threshold exceeded	Continue current practices.

**Evidence of Learning: General Education, Life Science Courses**

Course: ZOOL 1370 Spring 2018

<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Science and Society</b> The study of science provides explanations that have significant impact on society, including technological advancements, improvement of human life, and better understanding of human and other influences on the earth's environment.	Students will demonstrate their understanding by performance answering exam questions focused on science and society.	A set of 66 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 72%	Threshold exceeded	Continue current practices.

**Evidence of Learning: General Education, Life Science Courses**

Course: ZOOL 1370 Spring 2018

<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Problem Solving &amp; Data Analysis</b> Science relies on empirical data, and such data must be analyzed, interpreted, and generalized in a rigorous manner.	Students will demonstrate their understanding by performance answering exam questions focused on problem solving and data analysis.	A set of 244 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 72%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1370 Spring 2018						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Levels of Organization</b> All life shares an organization that is based on molecules and cells and extends to organisms and ecosystems.	Students will demonstrate their understanding by performance answering exam questions focused on levels of organization.	A set of 72 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 76%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1370 Spring 2018						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Metabolism and homeostasis:</b> Living things obtain and use energy, and maintain homeostasis via organized chemical reactions known as metabolism.	Students will demonstrate their understanding by performance answering exam questions focused on metabolism and homeostasis.	A set of 137 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 68%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1370 Spring 2018						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Genetics and evolution:</b> Shared genetic processes and evolution by natural selection are universal features of all life	Students will demonstrate their understanding by performance answering exam questions focused on genetics and evolution.	A set of 364 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 69%	Threshold exceeded	Continue current practices.

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 1370 Spring 2018						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Ecological interactions:</b> All organisms, including humans, interact with their environment and other living organisms.	Students will demonstrate their understanding by performance answering exam questions focused on ecological interactions.	A set of 45 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 74%	Threshold exceeded	Continue current practices.

End of Zool 1370

**Zoology 2200 Human Physiology Fall 2017**

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 2200 Fall 2017						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Nature of Science.</b> Scientific knowledge is based on evidence that is repeatedly examined, and can change with new information. Scientific explanations differ fundamentally from those that are not scientific.	Students will demonstrate their understanding by performance answering exam questions focused on the nature of science.	<b>Online section:</b> A set of 53 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 89%	Thresholds exceeded	Continue current practices.
		<b>Face-to-face section:</b> A set of 38 multiple choice questions		Combined student performance = 79%		

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 2200 Fall 2017						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Integration of Science</b> All natural phenomena are interrelated and share basic organizational principles. Scientific explanations obtained from different disciplines should be cohesive and integrated.	Students will demonstrate their understanding by performance answering exam questions focused on the integration of science.	<b>Online section:</b> A set of 59 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 88%	Thresholds exceeded	Continue current practices.
		<b>Face-to-face section:</b> A set of 113 multiple choice questions		Combined student performance = 86%		

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 2200 Fall 2017						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Science and Society</b> The study of science provides explanations that have significant impact on society, including technological advancements, improvement of human life, and better understanding of human and other influences on the earth's environment.	Students will demonstrate their understanding by performance answering exam questions focused on science and society.	<b>Online section:</b> A set of 37 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 91%	Thresholds exceeded	Continue current practices.
		<b>Face-to-face section:</b> A set of 52 multiple choice questions		Combined student performance = 85%		

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 2200 Fall 2017						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Problem Solving &amp; Data Analysis</b> Science relies on empirical data, and such data must be analyzed, interpreted, and generalized in a rigorous manner.	Students will demonstrate their understanding by performance answering exam questions focused on problem solving and data analysis.	<b>Online section:</b> A set of 78 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 89%	Thresholds exceeded	Continue current practices.
		<b>Face-to-face section:</b> A set of 66 multiple choice questions		Combined student performance = 84%		



<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 2200 Fall 2017						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Levels of Organization</b> All life shares an organization that is based on molecules and cells and extends to organisms and ecosystems.	Students will demonstrate their understanding by performance answering exam questions focused on levels of organization.	<b>Online section:</b> A set of 60 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 89%	Thresholds exceeded	Continue current practices.
		<b>Face-to-face section:</b> A set of 107 multiple choice questions		Combined student performance = 84%		

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 2200 Fall 2017						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Metabolism and homeostasis:</b> Living things obtain and use energy, and maintain homeostasis via organized chemical reactions known as metabolism.	Students will demonstrate their understanding by performance answering exam questions focused on metabolism and homeostasis.	<b>Online section:</b> A set of 90 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 89%	Thresholds exceeded	Continue current practices.
		<b>Face-to-face section:</b> A set of 199 multiple choice questions		Combined student performance = 83%		

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 2200 Fall 2017						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Genetics and evolution:</b> Shared genetic processes and evolution by natural selection are universal features of all life	Students will demonstrate their understanding by performance answering exam questions focused on genetics and evolution.	<b>Online section:</b> A set of 32 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 90%	Thresholds exceeded	Continue current practices.
		<b>Face-to-face section:</b> A set of 15 multiple choice questions		Combined student performance = 78%		

<b>Evidence of Learning: General Education, Life Science Courses</b>						
Course: ZOOL 2200 Fall 2017						
<b>Gen Ed Learning Goal</b>	<b>Measurable Learning Outcome</b>	<b>Method of Measurement</b>	<b>Threshold for "Acceptable"</b>	<b>Results of Assessment</b>	<b>Interpretation of Findings</b>	<b>Action Plan/ Action evaluation</b>
<b>Ecological interactions:</b> All organisms, including humans, interact with their environment and other living organisms.	Students will demonstrate their understanding by performance answering exam questions focused on ecological interactions.	<b>Online section:</b> A set of 20 multiple choice questions	Combined student performance of 65% or higher	Combined student performance = 91%	Thresholds exceeded	Continue current practices.
		<b>Face-to-face section:</b> A set of 44 multiple choice questions		Combined student performance = 83%		

End of Zool 2200

## Appendix A

Most departments or programs receive a number of recommendations from their Five/Seven-Year Program Review processes. This page provides a means of updating progress towards the recommendations the department/program is acting upon.

Date of Program Review: 2 December 2013	Recommendation	Progress Description
Recommendation 1	Strategic shifting of course options to meet student demand	This is occurring
Recommendation 2	Maintenance of a diversity of upper-division offerings	This is occurring
Recommendation 3	Continued support of faculty interest in upper-division courses	This is occurring
Recommendation 4	Continued support of faculty interest in interdisciplinary efforts	This is occurring
Recommendation 5	Continued support of faculty interest in undergraduate research	This is occurring

## Appendix B

Please provide the following information about the full-time and adjunct faculty contracted by your department during the last academic year (summer through spring). Gathering this information each year will help with the headcount reporting that must be done for the final Five Year Program Review document that is shared with the State Board of Regents.

Faculty Headcount	2017-18	2018-19
With Doctoral Degrees (Including MFA and other terminal degrees, as specified by the institution)		12
Full-time Tenured	10	10
Full-time Non-Tenured (includes tenure-track)		10
Part-time and adjunct	2	2
With Master's Degrees	3	3
Full-time Tenured	0	0
Full-time Non-Tenured	0	1
Part-time and adjunct	2	2
With Bachelor's Degrees		0
Full-time Tenured		0
Full-time Non-tenured		0
Part-time and adjunct		0
Other		0
Full-time Tenured		0
Full-time Non-tenured		0
Part-time		0
<b>Total Headcount Faculty</b>	<b>15</b>	<b>17</b>
Full-time Tenured	10	10
Full-time Non-tenured	0	2
Part-time	4	5



**Appendix C** – alternative format for Evidence of Learning Reporting; N/A

Course:

Program Outcome 1	
Aligned Course Outcome(s):	
Method(s) of measurement:	
Target Performance:	
Actual Performance:	
Interpretation/Reflection on findings:	
Action Plan/Use of Results:	
Intended evaluation of plan (closing the loop):	

**Please respond to the following questions.**

- 1) First year student success is critical to WSU's retention and graduation efforts. We are interested in finding out how departments support their first-year students. Do you have mechanisms and processes in place to identify, meet with, and support first-year students? Please provide a brief narrative focusing on your program's support of new students:
  - a. Any first-year students taking courses in your program(s).

Yes. First-year students are supportive in that (1) first-year classes have supplemental instructors, and students are encouraged to attend; (2) we utilize STARFISH to target students who are having difficulties; (3) all faculty in the department hold regular office hours and encourage students to visit; (4) Brian Pilcher, an Instructor in the department is a "Learning Strategist" and holds regular study skills/time management sessions is available for one-on-one meetings.
  - b. Students declared in your program(s), whether or not they are taking courses in your program(s)

All students must meet with a zoology advisor before declaring their zoology major; they then get information on the correct sequence of classes and specific advisors to contact depending on their career interests. In addition, all declared majors receive a "welcome" e-mail at the beginning of the semester, which contains links to zoology major information such as our social media content, departmental clubs, majors' room access, and how to subscribe to the departmental newsletter.
  
- 2) A key component of sound assessment practice is the process of 'closing the loop' – that is, following up on changes implemented as a response to your assessment findings, to determine the impact of those changes/innovations. It is also an aspect of assessment on which we need to improve, as suggested in our NWCCU mid-cycle report. Please describe the processes your program has in place to 'close the loop'.

Evaluation of our assessment data indicates that we are meeting our learning objectives. Students are meeting or exceeding the thresholds set for these classes. We further interpret this to mean that faculty are achieving their pedagogical goals and should be encouraged to keep up their good work. In those instances where the threshold was not met, the chair will meet with faculty teaching those classes and discuss ways to facilitate changes to teaching strategies that will provide better success at meeting learning outcomes. Future assessment will determine the efficacy of those pedagogical changes.

## Glossary

### Student Learning Outcomes/Measurable Learning Outcomes

The terms ‘learning outcome’, ‘learning objective’, ‘learning competency’, and ‘learning goal’ are often used interchangeably. Broadly, these terms reference what we want students to be able to do AFTER they pass a course or graduate from a program. For this document, we will use the word ‘outcomes’. Good learning outcomes are specific (but not too specific), are observable, and are clear. Good learning outcomes focus on skills: knowledge and understanding; transferrable skills; habits of mind; career skills; attitudes and values.

- Should be developed using action words (if you can see it, you can assess it).
- Use compound statements judiciously.
- Use complex statements judiciously.

### Curriculum Grid

A chart identifying the key learning outcomes addressed in each of the curriculum’s key elements or learning experiences (Suskie, 2019). A good curriculum:

- Gives students ample, diverse opportunities to achieve core learning outcomes.
- Has appropriate, progressive rigor.
- Concludes with an integrative, synthesizing capstone experience.
- Is focused and simple.
- Uses research-informed strategies to help students learn and succeed.
- Is consistent across venues and modalities.
- Is greater than the sum of its parts.

### Target Performance (previously referred to as ‘Threshold’)

The level of performance at which students are doing well enough to succeed in later studies (e.g., next course in sequence or next level of course) or career.

### Actual Performance

How students performed on the specific assessment. An average score is less meaningful than a distribution of scores (for example, 72% of students met or exceeded the target performance, 5% of students failed the assessment).

### Closing the Loop

The process of following up on changes made to curriculum, pedagogy, materials, etc., to determine if the changes had the desired impact.



### Continuous Improvement

An idea with roots in manufacturing, that promotes the ongoing effort to improve. Continuous improvement uses data and evidence to improve student learning and drive student success.

### Direct evidence

Evidence based upon actual student work; performance on a test, a presentation, or a research paper, for example. Direct evidence is tangible, visible, and measurable.

### Indirect evidence

Evidence that serves as a proxy for student learning. May include student opinion/perception of learning, course grades, measures of satisfaction, participation. Works well as a complement to direct evidence.

### HIEE – High Impact Educational Experiences

Promote student learning through curricular and co-curricular activities that are intentionally designed to foster active and integrative student engagement by utilizing multiple impact strategies.