

**Minor in Applied Genomics and Biotechnology  
Assessment of Student Learning Plan  
Kansas State University**

**A. College, Department, and Date**

College: *College of Agriculture*  
 Department: *Department of Plant Pathology*  
 Date: *09/02/2009*

**B. Contact Person(s) for the Assessment Plans**

*Richard Todd, Assistant Professor*

**C. Degree Program**

Applied Genomics and Biotechnology Minor

**D. Assessment of Student Learning Three-Year Plan**

**1. Student Learning Outcome(s)**

**a. List (or attach a list) all of the student learning outcomes for the program.**

*[List at least 2-5 learning outcomes that will be assessed by the unit over the next three years. Each unit will select which of its learning outcomes to assess.]*

**SLO1:** *Students who earn the Applied Genomics and Biotechnology minor will **have developed a basic understanding** of genomics, molecular genetic analysis and biotechnology and their applications.*

**SLO2:** *Students who earn the Applied Genomics and Biotechnology minor will **have an awareness** of approaches to solving problems using genomics and molecular biotechnology tools.*

**b. Identify outcomes that will be assessed in the first three years of the plan.**

**SLO1, SLO2**

Special rationale for selecting these learning outcomes (optional):

*[If applicable, provide a brief rationale for the learning outcomes that were selected]*

N/A

Relationship to K-State Student Learning Outcomes (insert the program SLOs and check all that apply):

Program SLOs	University-wide SLOs (Undergraduate Programs)					Program SLO is conceptually different from university SLOs
	Knowledge	Critical Thinking	Communication	Diversity	Academic / Professional Integrity	
1. SLO1	X	X				No
2. SLO2	X					No
3.						
4.						
5.						

Program SLOs	University-wide SLOs (Graduate Programs)			Program SLO is conceptually different from university SLOs
	Knowledge	Skills	Attitudes and Professional Conduct	
1. N/A				
2.				
3.				
4.				
5.				

**2. How will the learning outcomes be assessed? What groups will be included in the assessment?**

*[Briefly describe the assessment tools, measures, or forms of evidence that will be utilized to demonstrate students' accomplishment of the learning outcomes selected in the three-year plan. Also indicate whether each measure is direct or indirect. If you are unsure, then write "Unsure of measurement type". There is an expectation that **half of the assessment methods/measures will be direct measures** of student learning (see **Measures, Rubrics, & Tools for Assessing Student Learning Outcomes** on the APR website for examples of direct and indirect measures).]*

**SLO1: Students who earn the Applied Genomics and Biotechnology minor will have developed a basic understanding of genomics, molecular genetic analysis and biotechnology and their applications.** *This SLO will be assessed using both a DIRECT and an INDIRECT measure. A pre-test and post-test DIRECT measure covering key knowledge areas will be administered at the start of PLPTH 610 Biotechnology and at the end of PLPTH 613 Bioinformatics Applications, capstone courses for the minor that will likely be taken at the start of the minor and at completion of the minor, respectively. All students enrolled in PLPTH 610 Biotechnology and PLPTH 613 Bioinformatics Applications will be tested. An exit interview INDIRECT measure will be conducted with graduating seniors earning the Applied Genomics and Biotechnology minor. In this interview the students will be asked a standard set of questions where they will relate their program experience and their perceived understanding of genomics, molecular genetic analysis and biotechnology and its applications.*

**SLO2: Students who earn the Applied Genomics and Biotechnology minor will have an awareness of approaches to solving problems using genomics and molecular biotechnology tools.** *This SLO will be assessed using a DIRECT measure. A pre-test and post-test DIRECT measure covering key knowledge areas will be administered at the start of PLPTH 610 Biotechnology and at the end of PLPTH 613 Bioinformatics Applications, capstone courses for the minor that will likely be taken at the start and at completion of the minor, respectively. All students enrolled in PLPTH 610 Biotechnology and PLPTH 613 Bioinformatics Applications will be tested.*

**3. When will these outcomes be assessed? When and in what format will the results of the assessment be discussed?**

*[Briefly describe the timeframe over which your unit will conduct the assessment of the learning outcomes selected for the three-year plan. For example, provide a layout of the semesters or years (e.g., year 1, year 2, and year 3), list which outcomes will be assessed, and which semester/year the results will be discussed and used to improve student learning (e.g., discussed with faculty, advisory boards, students, etc.)]*

<b>Assessment (SLO)</b>	<b>Mechanism</b>	<b>Timeline</b>
Direct assessment (SLO1)	Pre-test (PLPTH610)	Starting Fall 2009
Direct assessment (SLO1)	Post-test (PLPTH613)	Starting Spring 2010
Indirect assessment (SLO1)	Exit interview	As students complete the minor
Direct assessment (SLO2)	Pre-test (PLPTH610)	Starting Fall 2009
Direct assessment (SLO2)	Post-test (PLPTH613)	Starting Spring 2010

The results of the assessment outcome measures will be discussed by faculty members involved in teaching the Applied Genomics and Biotechnology Minor and by faculty members of the Plant Pathology ad hoc teaching committee.

**4. What is the unit's process for using assessment results to improve student learning?**

*[Briefly describe your process for using assessment data to improve student learning.]*

- a. The assessment outcome results will be tabulated by the Applied Genomics and Biotechnology Minor Coordinator following the post-test and exit interviews at the end of the Spring semester.
- b. The Minor Coordinator will identify poorly performing areas.
- c. The assessment outcome results and identified poorly performing areas will be distributed and reviewed by the Minor teaching faculty.
- d. The Minor teaching faculty will meet over the summer to discuss content or structural modification to the program/courses to improve weak areas.
- e. Modifications will be implemented by the faculty, as deemed necessary, in the following relevant semester.
- f. The effect on the program SLOs of modifications to the courses/program will be monitored by the assessment outcome results.