

Department: College of Agriculture
Program: Masters of Science in Agriculture with several options
Date: May 2007
Updated: _____

Check List:

Introduction Completed _____ Page _____

Chapter 1

1.1.a. Developed Program Objective #1 Completed _____, Chapter _____, Page _____

1.1.b Student Learning Outcomes For Program Objective #1

- Developed three to five “measurable” student learning outcomes (SLO).
 - For May 2007 Date Completed _____: Chapter _____, Page; _____
 - For May 2008 Date Completed _____ Chapter _____, Page; _____
 - For May 2009 Date Completed _____ Chapter _____, Page; _____

1.2 Student Learning Outcome –Curriculum Alignment Matrix For Program Objective #1

- For May 2007 Developed a course alignment matrix for each SLO.
Completed _____ Chapter _____, Page; _____

1.3 Assessment Tools/Performance Criteria/ Targets for Program Objective #1

- For May 2007 Developed an assessment plan for each SLO
Completed _____ Chapter _____, Page; _____

1.4 Results/Analysis/ Recommendations for Program Objective #1

- For May 2007 Developed results, analysis and recommendations for each SLO
Completed _____ Chapter _____, Page; _____

1.5 Curricular Improvements for Program Objective #1

- For May 2007 Circular process initiated---measure, evaluate, improve, measure
Completed _____ Chapter _____, Page; _____

1.6 Other Forms of Assessment for Program Objective #1

- For May 2007 Developed an assessment plan using other criteria of student performance
Completed _____ Chapter _____, Page; _____

Chapter 2

2.1.a Developed Program Objective #2 Completed _____, Chapter ____,
Page _____

2.1.b Student Learning Outcomes For Program Objective #2

- Developed three to five “measurable” student learning outcomes (SLO).
 - For May 2007 Date Completed _____ : Chapter _____, Page; _____
 - For May 2008 Date Completed _____ Chapter _____, Page; _____
 - For May 2009 Date Completed _____ Chapter _____, Page; _____

2.2 Student Learning Outcome –Curriculum Alignment Matrix for Program Objective #2

- For May 2007 Developed a course alignment matrix for each SLO.
Completed _____ Chapter _____, Page; _____

2.3 Assessment Tools/Performance Criteria/ Targets for Program Objective #2

- For May 2007 Developed an assessment plan for each SLO
Completed _____ Chapter _____, Page; _____

2.4 Results/Analysis/ Recommendations for Program Objective #2

- For May 2007 Developed results, analysis and recommendations for each SLO
Completed _____ Chapter _____, Page; _____

2.5. Curricular Improvements for Program Objective #2

- For May 2007 Circular process initiated---measure, evaluate, improve, measure
Completed _____ Chapter _____, Page; _____

2.6 Other Forms of Assessment for Program Objective #2

- For May 2007 Developed an assessment plan using other criteria of student
performance
Completed _____ Chapter _____, Page; _____

Reminder:

Progress report deadlines – March 15

April 15

Final plan due – May 15

Key Definitions and Purpose of this Document.

The CSU system is requiring development of Student Learning Outcome (SLO) Assessment as part of the larger picture of 5-Year Program Review. SLO Assessment is to be conducted every year as part of the yearly curricular process of:

Fall, Winter and Spring quarters	gather data for assessment measures, analyze data, determine recommendations for curricular changes
Following Fall quarter	review Expanded Course Outlines to determine where needed curricular changes should be incorporated, develop new curriculum package of curricular changes
Winter quarter	submit curriculum package of changes to College, receive College approval, send approved curriculum package through University cycle

Traditionally Program Assessment has been the equivalent of 5-Year Program Review based on:

A. Broad Program Goals: Comprehensive and inclusive statements about what the program will do, not what the graduates will achieve. They are not measurable.

B. Outcome Measures: Outcome measures are aligned with a Program Goal and are measurable. These measures are data showing graduation rates or completion rates, achievement of students after graduation, etc.

This Document represents the current view of Student Learning Outcome Assessment as part of 5-Year Program Review which focuses on what students learn, the measurement of that learning and the development of a plan to improve the methods (curriculum) and level of student learning.

C. Program Student Objective or Goal: Similar to program goal but focused on what graduates have achieved from their progress through a curriculum of study.

D. Student Learning Outcomes: These are aligned under the Program objective and are measurable. These are measurements of performance of skills, demonstration of knowledge linked to the Program Objective.

The following template you will complete is not a one-time report.

Introduction to the Program and the Assessment Plan

In this section it is important to give an overview description of your academic program so the reader can understand what your program is all about. Keep in mind you will be updating each section every year and will add the information as is outlined below. (The items in parentheses below are examples of how the document will be added to each year but will not be completed by May 2007.)

A. Program Mission/Vision as applicable –

1. as of May 2007 -

The mission of the Masters of Science in Agriculture is to graduate students who have sound fundamental understanding of the contribution of research to development of current theory and practice in Plant, Nutrition, Food, Animal and Agricultural Sciences.

The College of Agriculture (CoA) currently supports six graduate programs housed in four departments – Animal and Veterinary Science (AVS), Agricultural Science (AGS), Human Nutrition and Food Science (HNFS) and Irrigation Science (ISC), Horticulture/Plant & Soil Science (HPSS) which is changing its name to Plant Science (PLT) from Fall 2007. These departments offer a M.S. Degree in Agricultural Sciences with the following options: (1) Agriculture, (2) Agricultural Science, (3) Animal Science, (4) Irrigation Science, (5) Nutrition and Food Science, and (6) Plant Science. The CoA also offers a post graduate Dietetic Internship program which prepares students for certification as a Registered Dietitian. A 5 year profile of the CoA post graduate programs show an average 61% of the M.S. students are full time and 39% are part time. Internship students average about 15 students a year and make up about 28% of the post graduate programs.

(2. as of May 2008 – indicate any changes or additions in May 2008)

The Irrigation Science option will be merged with the Plants Science option.

B. Describe briefly the curriculum and instructional methods your program uses to accomplish your program objectives (i.e. Internships; capstone courses, course sequences, research projects, independent study, service learning etc). –

a. as of May 2007 -

A new core course sequence has been established since Fall 2007 for all options. The se courses introduce each graduate student to the scientific database and peer-reviewed publications in each student's fields. The student also gets introduced to experimental design and data analyses. In addition to the core all options have advanced topics pertinent to that field which includes, theory practicum and discussion sections.

Instructional methods in the core and option courses include lectures, readings short oral and written presentations, assignments, data analysis, field work, teaching, and attending regional and national professional meetings. Thesis track students carry out a research project involving experimental design, data collection, statistical analysis and scientific interpretation.

(b. as of May 2008 – to be added in May 2008)

C. Describe briefly the status of your current updates as a result of your previous assessment cycle

New, N/A

a. as of May 2007 for any previously completed student learning outcome assessment during the 2006-2007 academic year -

None

(b. as of May 2008 for May 2007 cycle – to be added in May 2008)

CHAPTER 1. Program Objective #1 and Student Learning Outcomes (SLO)

Identify 2 program objectives that should probably be unique to your subject matter/discipline – 1 for Chapter 1 and 1 for Chapter 2. For the Program Objective below, identify 3-5 Student Learning Outcomes for each of the next 3 years. For subsequent years some of the same SLOs from May 2007 may be measured again in 2008 and 2009 or they may be measured every other year or every third year – each program will have to determine what is appropriate for their program and customize this listing for their program.

1.1.a Program Objective #1

Locate, retrieve, and understand data that either refutes current theory in appropriate field of study.

1.1.b.1. Student Learning Outcomes for Program Objective #1 – as of May 2007

a. Student Learning Outcome #1

Cal Poly Pomona Program Learning Outcome Assessment Plans College of Agriculture

Students will be able to locate a current peer-reviewed scientific manuscript to specifically answer a question or solve a problem.

b. Student Learning Outcome #2

Students will be able to identify and interpret graphical and tabular data that demonstrate a concept ie. Interaction.

c. Student Learning Outcome #3

Students will be able to interpret the data relative to current advances in their respective fields of study.

d. Student Learning Outcome #4

e. Student Learning Outcome #5

1.1.b.2. Student Learning Outcomes for Program Objective #1 – as of May 2008

a. Student Learning Outcome #1

b. Student Learning Outcome #2

c. Student Learning Outcome #3

d. Student Learning Outcome #4

e. Student Learning Outcome #5

1.1.b.3. Student Learning Outcomes for Program Objective #1 – as of May 2009

a. Student Learning Outcome #1

Cal Poly Pomona Program Learning Outcome Assessment Plans College of Agriculture

b. Student Learning Outcome #2

c. Student Learning Outcome #3

d. Student Learning Outcome #4

e. Student Learning Outcome #5

1.2 Student Learning Outcome-Curriculum Alignment Matrix for Program Objective #1 – as of May 2007

For each SLO identify in which courses are the SLOs introduced, practiced and mastered.

I = outcome is introduced **P** = outcome is practiced **M** = Outcome is Mastered

Course (number and title)	SLO #1: (Students will be able to locate a current peer- reviewed scientific manuscript to specifically answer a question or solve a problem)	SLO #2: (Students will be able to identify and interpret graphical and tabular data that demonstrate a concept ie. Interaction)	SLO #3: (Students will be able to interpret the data relative to current advances in their respective fields of study)	SLO #4: (write out SLO)	SLO#5: (write out SLO)
AG 500	I, P	I	I, P		
AG 510	P	I, P	P		
AG 520	P	I, P	P		
AG 530 Thesis Only	M	M	P, M		
FN 533	P, M	I, P	P, M		
FN 535 AGB 550, AGR 550, HOR 550, SS 550	M	M	P, M		

Cal Poly Pomona Program Learning Outcome Assessment Plans College of Agriculture

(Subsequent year alignment matrices will be inserted here.)

1.3. Assessment Tools/ Performance Criteria/ Targets for Program Objective #1 - as of May 2007

The Assessment Plan will include the following for items for each SLO:

a. identification of what kinds of assessment tools (i.e., exam questions, project rubrics, oral presentation rubrics, etc.) are going to be used to collect DATA measuring student performance of the outcome

b. identification of performance criteria (i.e. particular knowledge, or skill or demonstration of concepts, etc.)

c. identification of the target of expected performance (as an example to include such things as-----

1. Suggested level of achievement-----

- mastered = 90% performance

- intermediate = 80-89%

- novice = 70 – 79%

- unacceptable = less than 70%

Each program needs to identify a value that indicates an expected level of achievement for each individual

2. Target of achievement for the class could be----

- mean of the entire class will be _____

Or - a % target such as 75% of the class will achieve mastery of the SLO and less than 1% will earn unacceptable scores)

d. notes/justification (additional information that would give the reader a better understanding of how decisions for a, b and c were arrived at)

Complete the following information for each SLO for Program Objective #1:

1.3.1.a. SLO #1 – as of May 2007

a. assessment tools: Assign very specific search topic (i.e. scavenger hunt) as an out of class assignment.

b. performance criteria: Bringing in the exact paper addressing the search topic

c. target of expected performance: 100%

d. notes/justification: The search must be for a specific target so students become more familiar with scientific databases, journals and develop good search techniques ie. Search terms.

(1.3.1.b. SLO #1 – as of May 2008)

1.3.2.a. SLO #2 – as of May 2007

a. assessment tools: Exam, essay question and short answers.

b. performance criteria: Students will correctly identify data to its purpose or write a clear description of what all the data presented shows.

c. target of expected performance: 90% will meet the intermediate guidelines and 75% should master

d. notes/justification: Show actual data, (a). write a results section, (b). state or match data to its proper interpretation

(1.3.2.b. SLO #2 – as of May 2008)

1.3.3.a. SLO #3 – as of May 2007

a. assessment tools; Exam, take-home project.

b. performance criteria: Students should be able to write a discussion that summarizes current data with what is known. Students will also know the basic components of a research paper, introduction, methods, results, discussion/conclusion and references.

c. target of expected performance: 90% or over.

d. notes/justification: Highlight data and results which students will be able to link data with the results section. They should be able to find any major findings in the paper which were not introduced in the introduction section relate to the particular paper.

(1.3.3.b. SLO #3 – as of May 2008)

1.3.4.a. SLO #4 – as of May 2007

a. assessment tools

b. performance criteria

c. target of expected performance

d. notes/justification

(1.3.4.b. SLO #4 – as of May 2008)

1.3.5.a. SLO #5 – as of May 2007

a. assessment tools

b. performance criteria

c. target of expected performance

d. notes/justification

(1.3.5.b. SLO #5 – as of May 2008)

1.4. Results, Analysis and Recommendations for Program Objective #1 – as of May 2007

Provide the measurable results (data), an analysis (interpretations) and recommendations for general curricular changes (continue data collection, change matrices, develop new course, etc.) related to each SLO for data collected during 2006-2007. (Specific changes to be recorded in Section 1.5)

1.4.1.a SLO #1 – as of May 2007

a. results: To be done Fall 2007, Winter and Spring 2008 (AY 2007-08)

b. analysis

c. recommendations

(1.4.1.b SLO #1 – as of May 2008)

1.4.2.a SLO #2– as of May 2007

a. results

b. analysis

c. recommendations

(1.4.2.b SLO #2– as of May 2008)

1.4.3.a SLO #3– as of May 2007

a. results

b. analysis

c. recommendations

(1.4.3.b SLO #3– as of May 2008)

1.4.4.a SLO #4– as of May 2007

a. results

b. analysis

c. recommendations

(1.4.4.b SLO #4– as of May 2008)

1.4.5.a SLO #5– as of May 2007

a. results

b. analysis

c. recommendations

(1.4.5.b SLO #5– as of May 2008)

1.5. Curricular Changes for Program Objective #1 – as of May 2007

Describe the curricular changes you will be making in specific courses related to each SLO:

1.5.1.a SLO #1 – as of May 2007

(1.5.1.b SLO #1 – as of May 2008)

1.5.2.a SLO #2 – as of May 2007

(1.5.2.b SLO #2 – as of May 2008)

1.5.3.a SLO #3 – as of May 2007

(1.5.3.b SLO #3 – as of May 2008)

1.5.4.a SLO #4 – as of May 2007

(1.5.4.abSLO #4 – as of May 2008)

1.5.5.a SLO #5 – as of May 2007

(1.5.5.b SLO #5 – as of May 2008)

1.6 Other Forms of Assessment for Program Objective #1 – as of May 2007

Describe any other forms of assessment that you are using to validate any of your SLOs:

1.6.1.a. SLO #1 – as of May 2007

(1.6.1.b SLO #1 – as of May 2008)

1.6.2.a SLO #2 – as of May 2007

(1.6.2.b SLO #2 – as of May 2008)

1.6.3.a SLO #3 – as of May 2007

(1.6.3.b SLO #3 – as of May 2008)

1.6.4.a SLO #4 – as of May 2007

(1.6.4.b SLO #4 – as of May 2008)

1.6.5.a SLO #5 – as of May 2007

(1.6.5.b SLO #5 – as of May 2008)

CHAPTER 2. Program Objective #2 and Student Learning Outcomes (SLO)

Identify 2 program objectives that should probably be unique to your subject matter/discipline – 1 for Chapter 1 and 1 for Chapter 2. For the Program Objective below, identify 3-5 Student Learning Outcomes for each of the next 3 years. For subsequent years some of the same SLOs from May 2007 may be measured again in 2008 and 2009 or they may be measured every other year or every third year – each program will have to determine what is appropriate for their program and customize this listing for their program.

2.2.a Program Objective #2

Have a basic knowledge of statistical approaches used to analyze and report data

2.2.b.1. Program Objective #2 – as of May 2007

a. Student Learning Outcome #1

Students will know the definition of null and alternative hypothesis as a part of hypothesis driven research including the selection of dependent and independent variables.

b. Student Learning Outcome #2

Students will have a basic understanding of statistical models in designing experiments.

c. Student Learning Outcome #3

Students will be able to choose the appropriate statistical model.

d. Student Learning Outcome #4

Students will be able to calculate the level of power of an experiment, select the right level of significance and be able to calculate the type I and type II errors in an experiment.

e. Student Learning Outcome #5

2.2.b.2. Program Objective #2 – as of May 2008

a. Student Learning Outcome #1

b. Student Learning Outcome #2

c. Student Learning Outcome #3

d. Student Learning Outcome #4

e. Student Learning Outcome #5

2.2.b.3. Program Objective #2 – as of May 2009

a. Student Learning Outcome #1

b. Student Learning Outcome #2

c. Student Learning Outcome #3

d. Student Learning Outcome #4

e. Student Learning Outcome #5

2.2 SLO-Curriculum Alignment Matrix for Program Objective #2 – as of May 2007

For each SLO identify in which courses are the SLOs introduced, practiced and mastered.

I = outcome is introduced **P** = outcome is practiced **M** = Outcome is Mastered

Course (number and title)	SLO #1: (Students will know the definition of null and alternative hypothesis as a part of hypothesis driven research including the selection of dependent and independent variables)	SLO #2: (Students will have a basic understanding of statistical models in designing experiments)	SLO #3: (Students will be able to choose the appropriate statistical model)	SLO #4: (Students will be able to calculate the level of power of an experiment, select the right level of significance and be able to calculate the type I and type II errors in an experiment)	SLO#5: (write out SLO)
AG 500	I	I	I		
AG 510	P, M	P, M	P, M	I, P, M	
AG 520	P, M	P, M	P, M	P, M	
AG 530	M	M	M	M	

Cal Poly Pomona Program Learning Outcome Assessment Plans College of Agriculture

2.3. Assessment Tools/ Performance Criteria/ Targets/ for Program Objective #2 - as of May 2007

The Assessment Plan will include the following for items for each SLO:

a. identification of what kinds of assessment tools (i.e., exam questions, project rubrics, oral presentation rubrics, etc.) are going to be used to collect DATA measuring student performance of the outcome

b. identification of performance criteria (i.e. particular knowledge, or skill or demonstration of concepts, etc.)

c. identification of the target of expected performance (as an example to include such things as-----

1. Suggested level of achievement-----

- mastered = 90% performance
- intermediate = 80-89%
- novice = 70 – 79%
- unacceptable = less than 70%

Each program needs to identify a value that indicates an expected level of achievement for each individual

2. Target of achievement for the class could be----

- mean of the entire class will be _____

Or - a % target such as 75% of the class will achieve mastery of the SLO and less than 1% will earn unacceptable scores)

d. notes/justification (additional information that would give the reader a better understanding of how decisions for a, b and c were arrived at)

Complete the following information for each SLO for Program Objective #2:

2.3.1.a. SLO #1 – as of May 2007

a. assessment tools: Exams

b. performance criteria: Definitions, applications and readings.

c. target of expected performance: 90% or more students should master the objective

d. notes/justification

(2.3.1.b. SLO #1 – as of May 2008)

2.3.2.a. SLO #2 – as of May 2007

a. assessment tools: Take-home exam, home work assignments, lab projects, activities.

b. performance criteria: Appropriately choosing the model and apply it in practice.

c. target of expected performance: 90% or more students should master the objective

d. notes/justification

(2.3.2.b. SLO #2 – as of May 2008)

2.3.3.a. SLO #3 – as of May 2007

- a. assessment tools: Take-home exam, home work assignments, lab projects, activities
- b. performance criteria: Should be able to choose the right statistical model.
- c. target of expected performance: 90% or more students should master the objective
- d. notes/justification

(2.3.3.b. SLO #3 – as of May 2008)

2.3.4.a. SLO #4 – as of May 2007

- a. assessment tools: Exam, calculate the power of an experiment, knowing the difference between α and type I and type II errors.
- b. performance criteria:
- c. target of expected performance
- d. notes/justification

(2.3.4.b. SLO #4 – as of May 2008)

2.3.5.a. SLO #5 – as of May 2007

- a. assessment tools
- b. performance criteria
- c. target of expected performance
- d. notes/justification

(2.3.5.b. SLO #5 – as of May 2008)

2.4. Results, Analysis and Recommendations for Program Objective #2 – as of May 2007

Provide the measurable results (data), an analysis (interpretations) and recommendations for general curricular changes (continue data collection, change matrices, develop new course, etc.) related to each SLO for data collected during 2006-2007. (Specific changes to be recorded in Section 2.5)

2.4.1.a SLO #1 – as of May 2007

- a. results
- b. analysis
- c. recommendations

(2.4.1.b SLO #1 – as of May 2008)

2.4.2.a SLO #2– as of May 2007

- a. results
- b. analysis
- c. recommendations

(2.4.2.b SLO #2– as of May 2008)

2.4.3.a SLO #3– as of May 2007

- a. results
- b. analysis
- c. recommendations

(2.4.3.b SLO #3– as of May 2008)

2.4.4.a SLO #4– as of May 2007

- a. results
- b. analysis
- c. recommendations

(2.4.4.b SLO #4– as of May 2008)

2.4.5.a SLO #5– as of May 2007

- a. results
- b. analysis
- c. recommendations

(2.4.5.b SLO #5– as of May 2008)

2.5. Curricular Changes for Program Objective #2 – as of May 2007

Describe the curricular changes you will be making in specific courses related to each SLO:

2.5.1.a SLO #1 – as of May 2007

(2.5.1.b SLO #1 – as of May 2008)

2.5.2.a SLO #2 – as of May 2007

(2.5.2.b SLO #2 – as of May 2008)

2.5.3.a SLO #3 – as of May 2007

(2.5.3.b SLO #3 – as of May 2008)

2.5.4.a SLO #4 – as of May 2007

(2.5.4.abSLO #4 – as of May 2008)

2.5.5.a SLO #5 – as of May 2007

(2.5.5.b SLO #5 – as of May 2008)

2.6 Other Forms of Assessment for Program Objective #2 – as of May 2007

Describe any other forms of assessment that you are using to validate any of your SLOs:

2.6.1.a. SLO #1 – as of May 2007

(2.6.1.b SLO #1 – as of May 2008)

2.6.2.a SLO #2 – as of May 2007

(2.6.2.b SLO #2 – as of May 2008)

2.6.3.a SLO #3 – as of May 2007

(2.6.3.b SLO #3 – as of May 2008)

2.6.4.a SLO #4 – as of May 2007

(2.6.4.b SLO #4 – as of May 2008)

2.6.5.a SLO #5 – as of May 2007

(2.6.5.b SLO #5 – as of May 2008)

**CHAPTER 3. Program Objective #3 and
Student Learning Outcomes (SLO)**

*-Additional chapters to be added over time as additional
program objectives/SLOs are developed)*