

**Revised Template
Degree Program
Assessment of Student Learning Plan
Kansas State University**

FEB 17 2005

received

- Check the box if your program's student learning outcomes have been modified since November 2003. If so, please email (apr@ksu.edu) or attach a hard copy to this document.

A. College, Department, and Date

College: Agriculture
Department: Horticulture, Forestry and Rec. Resources
Date: October 25, 2004

B. Contact Person(s) for the Assessment Plans

C. B. Rajashekar, Professor, Graduate Program director

C. Degree Program

Ph .D. in Horticulture

D. Assessment of Student Learning Three-Year Plan

1. Student Learning Outcome(s)

Students are able to demonstrate

- Their knowledge and competence in specific areas, issues, and problems in Horticulture.
- Their knowledge in allied and relevant areas of Horticulture to foster creativity and problem solving skills.
- Ability for critical and independent thinking in analyzing information and identify valid scientific problems.
- Ability to plan, design and develop strategies to solve problems using sound scientific methodologies.
- Ability to conduct scientific investigation to solve problems and accomplish the set objectives.
- Ability to effectively communicate in various formats and settings.
- An awareness of ethical and professional conduct and responsibility to profession and community.

Special rationale for selecting these learning outcomes (optional):

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

Program SLOs	University-wide SLOs (Graduate Programs)			Program SLO is conceptually different from university SLOs
	Knowledge	Skills	Attitudes and Professional Conduct	
1. Knowledge in Horticulture	X			
2. Knowledge in allied and related areas of Horticulture	X			
3. Ability for critical thinking and problem identification	X	X		
4. Ability to plan, design and develop strategies to solve problems using scientific methodologies	X	X		
5. Ability to conduct scientific investigation and accomplish goals	X	X		
6. Ability to effectively communicate		X		
7. Awareness of ethical and professional conduct and responsibility to profession and community			X	

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

Learning Outcomes	Measures*			Who will be assessed?
	Direct	Indirect	Not sure	
Knowledge in Horticulture	Rubrics on knowledge (attached) evaluation at the thesis defense and preliminary exam – evaluated by the Graduate Supervisory Committee			All graduating students
Knowledge in allied and related areas of Horticulture	Rubrics on knowledge (attached) evaluation at the thesis defense and preliminary exam- evaluated by the Graduate Supervisory Committee and M. S. Research (Hort 999)			All graduating students
Ability for critical thinking and problem identification	Rubrics on critical thinking (attached)-evaluation at Graduate Seminar (Hort 951), thesis defense and preliminary exam- by Graduate Supervisory Committee			All graduating students
Ability to plan, design and develop strategies to solve problems using scientific methodologies	Rubrics on ability to conduct research (attached)- evaluated at thesis defense by Graduate Supervisory Committee			All graduating students
Ability to conduct scientific investigation and accomplish goals	Rubrics on ability to conduct research (attached)- evaluated at thesis defense by Graduate Supervisory Committee			All graduating students
Ability to effectively communicate	Rubric on communication- verbal and written (attached)- Graduate Seminar (Hort 951) and			All students

	thesis defense, preliminary exam and dissertation-evaluated by Graduate Supervisory Committee			
Awareness of ethical and professional conduct and responsibility to profession and community		Students awareness ratings		All graduating students

*As thesis defense is a single comprehensive instrument, which reflects students overall accomplishments in acquiring knowledge in horticulture and related areas, ability to critically think, solve, and design strategies to solve problems, and to effectively communicate, is used to measure many of our outcomes. Preliminary exam offers an excellent opportunity to evaluate many of the attributes listed above as it includes both written and oral forums. In addition, we use Graduate Seminars and defense seminar to assess the oral communication skills and critical thinking. Appropriate rubrics to measure these will be used by the Graduate Supervisory Committee and the major adviser during final thesis defense and Graduate seminars. Student's awareness of ethics and professional conduct will be assessed by self-assessment at the final thesis defense. Thus, it gives the opportunity to evaluate our students on a number of occasions, such as at seminars, preliminary exams and final thesis defense to develop baseline data and plan for improvement.

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

Learning Outcomes	Timetable for Assessment Learning Outcomes			Baseline Created?
	2005	2006	2007	
Knowledge in Horticulture	Prelim and thesis defense	Prelim and thesis defense	Prelim and thesis defense	3-year baseline data created after 2007 fall semester
Knowledge in allied and related areas of Horticulture	Prelim and thesis defense	Prelim and thesis defense	Prelim and thesis defense	3-year baseline data created after 2007 fall semester
Ability for critical thinking and problem identification	Graduate Seminars (Hort 951), prelim, and thesis defense	Graduate Seminars (Hort 951), prelim and thesis defense	Graduate Seminars (Hort 951), prelim and thesis defense	2008—Baseline created
Ability to plan, design and develop strategies to solve problems using scientific methodologies	Thesis defense	Thesis defense	Thesis defense	3-year baseline data created after 2007 fall semester
Ability to conduct scientific investigation and accomplish goals	Thesis defense	Thesis defense	Thesis defense	2008—Baseline created
Ability to effectively communicate	Graduate Seminars (Hort 951), prelim and thesis defense	Graduate Seminars (Hort 951), prelim and thesis defense	Graduate Seminars (Hort 951), prelim and thesis defense	2008—Baseline created
Awareness of ethical and professional conduct and responsibility to profession and community	Thesis defense	Thesis defense	Thesis defense	2008—Baseline created

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

Learning Outcomes	Improvement plan
Knowledge in Horticulture	After collecting baseline data, if there is deficiency in the knowledge base in horticulture, the horticulture course requirements may have to be revised. Preliminary exam gives an opportunity to assess in mid-course and to make necessary changes.
Knowledge in allied and related areas of Horticulture	The allied courses are vital for students to develop problem solving skills and to understand issues and problems in horticulture. The course requirements outside our department have to be strengthened.
Ability for critical thinking and problem identification	This is basically assessed by student's ability to identify and solve problem as it pertains to thesis research. We hope with strong student's knowledge in the specific and related areas in horticulture they are able to think critically to solve problems. The emphasis will be on the approach the major advisors take in allowing students to independently think in solving research problems as they arise during the course of their research.
Ability to plan, design and develop strategies to solve problems using scientific methodologies	Based on our baseline data, the graduate faculty may have to set guidelines in encouraging faculty to promote independent planning, designing and developing methodology to tackle problems and issues.
Ability to conduct scientific investigation and accomplish goals	Here again the major adviser's role will have to be considered in developing strong research skills among students, which may include sound methodologies and rigorous and careful experimentation in accomplishing the research goals
Ability to effectively communicate	Graduate students enroll in 2 credits of Graduate Seminar (Hort 951) which includes oral and poster presentations to the faculty and students. In addition, they also present their thesis seminar as a part of thesis defense. In the event that there are deficiencies, more opportunities for students to present in the class room as well as at professional meetings need to be considered. In addition, Hort 951 may have to be revised to strengthen instruction and hands-on training. If a need exists to improve written communication skills, some additional courses in writing technical matter and hands-on training in development of research proposals, abstracts, and manuscripts will be considered.
Awareness of ethical and professional conduct and responsibility to profession and community	This is a self-assessment done during the thesis defense. If improvement in the practice and awareness of professional responsibilities and ethics is needed, greater involvement in professional activities, mentoring by the graduate adviser would be considered.