

**Electrical and Computer Engineering Graduate Degree Program  
Assessment of Student Learning Plan  
Kansas State University**

APR 13 2005  
BY: \_\_\_\_\_

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

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

College: College of Engineering  
Department: Electrical and Computer Engineering  
Date: October 28, 2004

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

Don M. Gruenbacher, Associate Professor and Graduate Program Coordinator  
Anil Pahwa, Professor and Head

**C. Degree Program**

Ph.D. in Electrical Engineering

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

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

Graduates of the graduate program in electrical and computer engineering will have:

1. Ability to solve advanced electrical engineering problems using appropriate skills in mathematics, science, computation, and analysis.
2. Ability to communicate effectively in both written and oral forms.
3. Understanding of the ethical, social, safety, economic, and environmental factors required for professional engineering practice.

These outcomes were based on the graduate program outcomes approved November 13, 2003 for both degree programs.

Relationship to K-State Student Learning Outcomes:

Program SLOs	University-wide SLOs ( <u>Graduate Programs</u> )			Program SLO is conceptually different from university SLOs
	Knowledge	Skills	Attitudes and Professional Conduct	
1. Ability to solve advanced electrical engineering problems	X	X		
2. Ability to communicate effectively		X		
3. Understanding of the ethical, social, safety, economic, and environmental factors			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	
1. Ability to solve advanced electrical engineering problems	EECE 830 exams and projects			All students enrolled in the class
	EECE 840 projects			All students enrolled in the class
	EECE 841 exams and projects			All students enrolled in the class
	EECE 861 exams and projects			All students enrolled in the class
2. Ability to communicate effectively	EECE 830 project reports			All students enrolled in the class
	EECE 840 project reports			All students enrolled in the class
	EECE 841 project reports			All students enrolled in the class
	EECE 861 project reports			All students enrolled in the class
	EECE 896 Seminar Presentations			All students in their last semester
3. Understanding of the ethical, social, safety, economic, and environmental factors	EECE 841 Project reports			All students enrolled in the class
		EECE 896 Surveys		All students each semester

**3. 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	
1. Ability to solve advanced electrical engineering problems	EECE 840, 841 Spring semester EECE 830, 861 Fall semester	EECE 840, 841 Spring semester EECE 830, 861 Fall semester	EECE 840, 841 Spring semester EECE 830, 861 Fall semester	3 year baseline as of 2007
2. Ability to communicate effectively	EECE 840, 841 Spring semester EECE 830, 861 Fall semester	EECE 840, 841 Spring semester EECE 830, 861 Fall semester	EECE 840, 841 Spring semester EECE 830, 861 Fall semester	3 year baseline as of 2007
	EECE 896 both semesters	EECE 896 both semesters	EECE 896 both semesters	3 year baseline as of Spring 2007
3. Understanding of the ethical, social, safety, economic, and environmental factors	EECE 841 Spring semester	EECE 841 Spring semester	EECE 841 Spring semester	3 year baseline as of Spring 2007
	EECE 896 both semesters	EECE 896 both semesters	EECE 896 both semesters	3 year baseline as of Spring 2007

The results of the assessment will be presented in the format that characterizes the results for each outcome in three categories: Outstanding; Satisfactory, and Unsatisfactory. The student outcomes in each category would be presented in a percentage format.

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

The table below summarizes the process for reviewing the assessment results. If the results imply that changes are required, then the graduate affairs committee will be tasked with proposing necessary revisions to the program. Action on any proposed revisions will first be taken by the graduate faculty in the department, and then proceed to the appropriate higher entity involved in the approval process.

Learning Outcomes	Improvement Process
1. Ability to solve advanced electrical engineering problems	The department graduate affairs committee will review data each semester. If changes are indicated, the proposed revisions will be taken to the graduate faculty for action.
2. Ability to communicate effectively	The department graduate affairs committee will review data each semester. If changes are indicated, the proposed revisions will be taken to the graduate faculty for action.
3. Understanding of the ethical, social, safety, economic, and environmental factors	The department graduate affairs committee will review data each semester. If changes are indicated, the proposed revisions will be taken to the graduate faculty for action.