

Cleveland State University
Department of Electrical and Computer Engineering

Master of Science in Electrical Engineering (MSEE)

Assessment, Assessment Report, and Suggestions

Academic Year 2008/2009

Dan Simon
Professor and Graduate Program Director
Department of Electrical and Computer Engineering

Table of Contents	Page
I. Overview	2
II. Goals, Objectives and Outcomes	3
III. Academic Achievement Assessment Strategies	5
III.1. Assessment Methods.....	5
III.2. Outcomes/Assessment Matrix	7
IV. Assessment of Outcomes	8
V. Summary of Assessment Results	14
VI. Conclusions and Recommendations	15

Appendices

1. Exit Survey Results for Current Academic Year	16
2. Thesis Defense Questionnaire Results for Current Academic Year	18

I. Overview

The Department of Electrical and Computer Engineering (ECE) has two assessment strategies: an exit survey which is completed by graduating students, and a thesis defense questionnaire which is completed by faculty. Below is a list showing how many survey responses we received over the past few years.

- 2004/05 – 47 student surveys and 59 faculty thesis surveys
- 2005/06 – 39 student surveys and 45 faculty thesis surveys
- 2006/07 – 5 student surveys and 19 faculty thesis surveys
- 2007/08 – 24 student surveys and 28 faculty thesis surveys
- 2008/09 – 10 student surveys and 10 faculty thesis surveys

In 2008/09 we had 26 graduates but received only 10 student surveys and 10 faculty thesis surveys. These numbers indicate that we need a more reliable method of data collection.

In 2008 we received feedback from the Assessment Office, but no action was taken because of a change in the Graduate Program Director and a subsequent lack of communication. Below are the issues that the Assessment Office raised about our 2007/08 report, and proposed plans to address them in fall 2009.

- (1) Assessment Office: “Program objectives should be more closely tied to goals and outcomes.” We have addressed this by creating a matrix that links goals, objectives, and outcomes in Section II of this report. This needs to be modified and agreed upon by the ECE faculty in fall 2009.
- (2) “Establish benchmark scores for acceptable performance for each outcome.” This will be discussed by the ECE faculty in fall 2009.

Additional actions for the near future are recommended in Section VI of this report.

Recent Program Improvements

In recent years we improved the MSEE program based on feedback from the assessment study. For example, we changed the program structure to include four specializations (control, communication, power, and computers) which were approved by the faculty in spring 2007. This is particularly useful for non-thesis students, who previously were not guided well in their plan of study.

The five-year Bachelor’s/Master’s Accelerated Program officially began in spring 2008. An information session for new MSEE students has been held every semester since spring 2007. An outstanding thesis/dissertation award was approved by the faculty in fall 2007 and the first award was given in spring 2008. While we have numerous awards for undergraduate students, we previously did not have any awards for graduate students. Some graduate students felt incorrectly felt that the faculty did not care about them. Additionally, we are considering: (1) creating a way for graduate students to officially speak out about our program and their concerns, and (2) developing a method and process by which our goals and outcomes are modified as a result of assessment.

II. Goals, Objectives, and Outcomes

Program Goals

The goals of the MSEE program are to provide students with an educational experience that helps them:

- (1) Lead fulfilling and productive lives.
- (2) Assume leading professional roles in industry.
- (3) Improve their employment and/or career possibilities as engineers upon graduation
- (4) Continue their formal education in doctoral programs.
- (5) Participate in lifelong learning.

Program Objectives

The objectives of MSEE program are to:

- (1) Offer an MSEE curriculum that is a balance between theory and practice.
- (2) Offer an MSEE curriculum that meets the current needs of industry.
- (3) Obtain teaching and research assistantships for qualified students.
- (4) Offer an MSEE curriculum that allows students to improve their employment possibilities after graduation.
- (5) Offer an MSEE curriculum that allows students to enter doctoral programs after graduation.
- (6) Secure an adequate budget for the department.
- (7) Maintain an adequate level of student enrollment.
- (8) Promote faculty research.
- (9) Promote faculty teaching effectiveness.
- (10) Recruit and retain qualified faculty.

Outcomes

The MSEE program is designed to help students to acquire:

- (a) A knowledge of advanced engineering analysis and design tools.
- (b) The ability to use advanced engineering analysis and design tools to design practical systems.
- (c) The ability to access and use the literature in one's field.
- (d) The ability to communicate effectively.

The purpose of assessment is to measure how well we are achieving the four outcomes listed above. The following table shows how the program outcomes are linked to the goals and objectives. Note that not all goals and objectives are directly linked to student learning outcomes.

Goals and Objectives		Outcomes			
		(a) Knowledge of advanced engineering analysis and design	(b) Ability to use advanced engineering analysis and design tools to design practical systems	(c) Ability to access and use the literature in one's field	(d) Ability to communicate effectively
Goals	1. Lead fulfilling and productive lives.				
	2. Assume leading professional roles in industry.				√
	3. Improve employment and/or career possibilities as engineers upon graduation			√	
	4. Continue formal education in doctoral programs.	√			
	5. Participate in lifelong learning.		√		
Objectives	1. Offer an MSEE curriculum that is a balance between theory and practice.		√		
	2. Offer an MSEE curriculum that meets the current needs of industry.		√		
	3. Obtain teaching and research assistantships for qualified students.				
	4. Offer an MSEE curriculum that allows students to improve their employment possibilities after graduation.		√		√
	5. Offer an MSEE curriculum that allows students to enter doctoral programs after graduation.	√			√
	6. Secure an adequate budget for the department.				
	7. Maintain an adequate level of student enrollment.				
	8. Promote faculty research.	√			√
	9. Promote faculty teaching effectiveness.	√	√	√	√
	10. Recruit and retain qualified faculty.	√		√	

III. Student Academic Achievement Assessment Strategies

According to ABET EC2000, the assessment process should be an on-going process that accomplishes the following:

- (1) Starts with the definition of objectives and outcomes, and:
- (2) Continues with annual assessment of the status of meeting the objectives and outcomes with all educational means, mainly the offering of courses, and:
- (3) Concludes with the adjustment of educational practice, based on the assessment findings, to better meet the objectives and outcomes.

This process continues in a spiral manner in the sense that each iteration of the process is designed to result in a higher quality of education for our students.

III.1 Assessment Methods

The assessment instruments considered by the Fenn College of Engineering are:

- (1) Student exit questionnaire
- (2) Thesis defense questionnaire for thesis committee faculty
- (3) Project presentation questionnaire for project faculty
- (4) Exit exam
- (5) Employer survey and Alumni survey.

In this year's assessment study (2008/2009), the Department of Electrical and Computer Engineering (ECE) used two assessment strategies, the same as in the previous five years:

- Exit survey, completed by students
- Thesis defense questionnaire, completed by faculty

However, we are considering the use of other strategies in the future. For example, a project presentation questionnaire could be employed by providing an appropriate form to faculty who teach graduate courses involving class projects. Employer survey and alumni survey are more difficult to use but may be considered. (Note that some of our students work on internships during the summers.)

This point was raised in previous assessment reports also. However, since it has not been discussed among the faculty, new assessment strategies have not yet been adopted.

Assessment strategy #1: Student Exit Questionnaire

Student exit questionnaires are distributed at the end of each semester. Each graduating MSEE student is asked to fill out a Student Exit Survey form (see below). The forms are distributed and collected by the department secretary. In Part I, the student is asked to answer six general questions about quality of the academic program, the courses, and the faculty. For these six questions, a score from 0 to 5 is selected by the student, with 0 for "poor" and 5 for "excellent." In Part II, the student is asked to answer six questions regarding whether the outcomes of the curriculum were met. For these six questions, a score from 0 to 5 points is selected by the student, with 5 for "strongly agree," 1 for "strongly disagree," and 0 for "no basis for judgment." At the end of the questionnaire,

the student is asked to comment on the strengths and weaknesses of the MSEE program, and on how the MSEE program could be improved.

The student exit survey questions include the following.

Part I:

1. The MSEE program promotes excellence in teaching.
2. The MSEE program promotes excellence in research.
3. The MSEE program provides the best qualified faculty and promotes their development.
4. The MSEE program encourages the faculty to obtain funds for research and to maintain state-of-the-art laboratories.
5. The MSEE program awards teaching assistantships to the most qualified students.
6. The MSEE program awards research assistantships to the most qualified students.

Part II:

1. The MSEE student developed a deeper understanding of the principles underlying a particular field of study, as well as those underlying other fields.
2. The MSEE student developed a knowledge of advanced methods of analysis and synthesis that are more powerful and more generally applicable than those taught at the undergraduate level.
3. The MSEE student developed the ability to independently read and understand classical and contemporary works that contribute to advancements in the chosen field.
4. The MSEE student developed insight into the significance and the limitations of available results and methods, as well as their relationships to each other.
5. The MSEE student developed the capacity, imagination, and courage to contribute to the advancement of the electrical engineering field.
6. The MSEE student developed the ability to make quality written and oral presentations to technically literate audiences.

Part III: Comments on what you feel strongly about the program.

Assessment strategy #2: Thesis Defense Questionnaire

Each member of the student's thesis committee will fill out a questionnaire immediately after the defense. It asks the faculty to rate the following qualities related to the student's thesis and presentation.

1. Knowledge of advanced engineering analysis and design tools
2. The ability to use advanced engineering analysis and design tools to design practical systems
3. The ability to access and use the literature in one's field
4. The ability to communicate effectively
 - a. Quality of the writing style
 - b. Organization of the written these
 - c. Organization of the presentation
 - d. Clarity of language usage
 - e. Quality of slides

III.2 Outcome/Assessment Matrix

The assessment tools (strategies) include a student exit survey and a thesis defense questionnaire. The outcomes and the assessment strategies for outcomes are summarized in the following table. This mapping matrix was proposed in 2006 and has not been discussed among the faculty. A better mapping matrix may be proposed in the future based on feedback from the faculty.

Assessment Tools \ Outcomes		Outcomes			
		(a) Knowledge of advanced engineering analysis and design tools	(b) Ability to use advanced engineering analysis and design tools to design practical systems	(c) Ability to access and use the literature in one's field	(d) Ability to communicate effectively
Student Exit Survey (Part II)	1. The MSEE student developed a deeper understanding of the principles underlying a particular field of study, as well as those underlying other fields.	√			
	2. The MSEE student developed a knowledge of advanced methods of analysis and synthesis that are more powerful and more generally applicable than those taught at the undergraduate level.	√			
	3. The MSEE student developed the ability to independently read and understand classical and contemporary works that contribute to advancements in the chosen field.			√	
	4. The MSEE student developed an insight into the significance and the limitations of available results and methods, as well as their relationships to each other.		√		
	5. The MSEE student developed the capacity, imagination, and courage to contribute to the advancement of the electrical engineering field.		√		
	6. The MSEE student developed the ability to make quality written and oral presentations to technically literate audiences.				√
Thesis Defense Questionnaire	1. Knowledge of advanced engineering analysis and design tools	√			
	2. The ability to use advanced engineering analysis and design tools to design practical systems		√		
	3. The ability to access and use the literature in one's field			√	
	4. The ability to communicate effectively				√

IV. Assessment of Outcomes

In the academic year 2003/2004, assessment result based on the exit and defense surveys generally showed more than satisfactory outcomes, but the number of participants was so small that we could not make general conclusions. In 2004/2005, a method was employed to encourage students and faculty to participate in the surveys. The number of exit surveys increased from 10 to 47 and the number theses defense surveys increased from 21 to 59. In the academic year 2005/2006, there were 39 exit surveys and 45 defense surveys. These numbers decreased to 5 exit surveys and 19 defense surveys in 2006/07, and increased to 24 and 28 respectively in 2007/08. In 2008/09 we received 10 exit surveys and 10 defense surveys.

The following table presents a summary of the overall average scores of all outcomes. The overall average score is an average of scores obtained by various assessment tools during two semesters. Scores are percentages that are obtained by normalizing scores to their maximums. The designations are as follows. A score of 90 to 100 indicates excellent, 80 to 90 indicates very good, 70 to 80 indicates good, 60 to 70 indicates satisfactory, and less than 60 indicates unsatisfactory.

Outcome	Designation 08-09	Overall average score (percent)					
		08-09	07-08	06-07	05-06	04-05	03-04
(a) Knowledge of advanced engineering analysis and design tools	Good	78	72	79	79	80	86
(b) Ability to use advanced engineering analysis and design tools to design practical systems	Good	77	76	73	79	80	87
(c) Ability to access and use the literature in one's field	Very Good	81	76	73	78	74	82
(d) Ability to communicate effectively	Very Good	81	78	76	79	83	87

The scores have been fairly consistent over the past six years. Scores for all four outcomes are good or very good. However, it should be noted that faculty opinions as shown in the thesis surveys are consistently better than student exit surveys. Faculty thesis surveys averaged 86% in 2008/09 while student exit surveys averaged 69%. This may be due to the fact that thesis students receive the most attention from the faculty and are typically better students than non-thesis students. In any case, we need to address the low ratings seen in the student exit surveys. This will be discussed on a case-by-case basis in the following pages of this report.

In the following we present detailed scores for each outcome. If an assessment instrument is not used, no entry is entered in the score table. Then we present conclusions based on the scores, and we described actions that we recommend or actions that we have already taken.

Outcome (a): Knowledge of advanced engineering analysis and design tools

This outcome is to be realized by all EEC courses and is evaluated based on items 1 and 2 in part II of the exit survey, and item 1 of the thesis survey.

Assessment strategy	Designation 08-09	Average overall score (percent)					
		08-09	07-08	06-07	05-06	04-05	03-04
Exit questionnaire part II #1 The MSEE students developed a deeper understanding of the principles underlying a particular field of study, as well as those underlying other fields	Good	72	71	72	77	81	92
Exit questionnaire part II #2 The MSEE students developed a knowledge of advanced methods of analysis and synthesis that are more powerful and more generally applicable than those taught at the undergraduate level.	Good	73	60	72	78	79	90
Thesis survey #1 Knowledge of advanced engineering analysis and design tools	Very good	88	84	92	80	79	77
Overall average	Good	78	72	79	79	80	86

Conclusions and Actions:

The overall average score is “good” so this outcome has been met. The scores from the exit survey (72 and 73) are very different from thesis survey (88). The scores from the exit surveys, which reflect the perception of our graduates about their own knowledge, is not very high. This pattern is consistent with previous years. The score from the thesis surveys are high, which reflects the fact that our students’ theses have met this outcome well. One possible reason behind the difference is that students who choose to write a thesis are generally more motivated than non-thesis students. Another possible reason is that the exit surveys are done by students but the thesis surveys are done by the faculty. Students believe they did not achieve this outcome but the faculty believe otherwise.

One way to improve student scores in this area is to include more projects in MSEE courses. This will result in more student involvement in advanced engineering work, which will in turn motivate them to delve into advanced principles and tools, similar to thesis work.

Outcome (b): Ability to use advanced engineering analysis and design tools to design practical systems

This outcome is to be realized by all EEC courses and is evaluated based on items 4 and 5 in part II of the exit survey, and item 2 of the thesis survey.

Assessment strategy	Designation 08-09	Average overall score (percent)					
		08-09	07-08	06-07	05-06	04-05	03-04
Exit questionnaire part II #4 The MSEE students developed an insight into the significance and the limitations of available results and methods, as well as the relationships with each other.	Satisfactory	68	72	64	76	78	84
Exit questionnaire part II #5 The MSEE students developed the capacity, imagination, and courage to contribute to the advancement of the electrical engineering field.	Satisfactory	66	68	68	77	81	90
Thesis survey #2 The ability to use advanced engineering analysis and design tools to design practical systems	Very good	89	89	92	84	81	87
Overall average	Good	74	76	73	79	80	87

Conclusions and Actions:

The overall average score is “good” so this outcome has been met. However, as with outcome (a), the student exit survey results are much lower than the faculty thesis survey results. The discussion under outcome (a) on the previous page, including the suggestion for improvement, applies here as well.

Outcome (c): Ability to access and use the literature in one’s field

This outcome is to be realized by all EEC courses and is evaluated based on item 3 in part II of the exit survey and item 3 in the thesis survey.

Assessment strategy	Designation 08-09	Average overall score (percent)					
		08-09	07-08	06-07	05-06	04-05	03-04
Exit questionnaire part II #3 The MSEE students developed the ability to independently read and understand the classical and contemporary works that contribute to advancements in the chosen field.	Good	78	73	60	81	79	88
Thesis survey #3 The ability to access and use the literature in one’s field	Good	79	79	85	74	70	75
Overall average	Good	79	76	73	78	74	82

Conclusions and Actions:

The overall average score is “good” so this outcome has been met. The scores from the student exit surveys and the faculty thesis surveys are very close to each other.

Outcome (d): Ability to communicate effectively

This outcome is to be realized by all EEC courses and is evaluated based on item 6 of part II in the exit survey and items 4a–4e in the thesis survey.

Assessment strategy	Designation 08-09	Average overall score (percent)					
		08-09	07-08	06-07	05-06	04-05	03-04
Exit questionnaire part II #6 The student developed the ability to make quality written and oral presentations to technically literate audiences	Good	72	72	64	77	83	90
Thesis survey #4 The ability to communicate effectively	Very good	83	85	88	82	84	84
Overall average	Good	78	78	76	79	83	87

Conclusions and Actions:

The overall average score is “good” so this outcome has been met. However, as with outcome (a), the student exit survey results are much lower than the faculty thesis survey results, consistent with previous years. Faculty evaluations should be considered accurate because they are based on thesis presentations. However, faculty evaluations are made only for thesis students, which indicates, that thesis students are learning to communicate more effectively than non-thesis students.

The discussion under outcome (a) on page 9 therefore applies here as well. If students can be involved in more project work in their graduate courses, including oral and written reports, then they will be more likely develop good communication skills and rate themselves accordingly.

In order to see the details of the outcomes for communication skills, we next analyze item 4 of the thesis surveys, which consists of five sub-questions. The first two (items 4a and 4b) are related to written communication skills, while the last three (items 4c, 4d and 4e) are related to oral communication skills.

Assessment strategy Thesis survey #4	Designation 08-09	Average overall score (percent)					
		08-09	07-08	06-07	05-06	04-05	03-04
Written communication a. Quality of the writing style b. Organization of the written thesis	Very good	84 10*	85 0*	83 0*	75 12*	84 2*	82
Oral communication c. Organization of presentation d. Clarity of language usage e. Quality of slides	Very good	83 0*	84 5*	92 5*	86 1*	83 5*	85
Overall average	Very good	83	84	88	81	83	84

* The second number in each cell indicates the percentage of “unsatisfactory” grades.

As evident from the table, the faculty are generally satisfied with the students’ writing and presentation skills. One out of 10 survey results was rated “unsatisfactory” for item 4b (organization of the written thesis). However, the averages are consistent across the last few years.

V. Summary of Assessment Results

The following table summarizes the MSEE assessment results.

Assessment Tools		Outcomes				Average for 2008/09 (07/08, 06/07, 05/06, 04/05)
		(a) Knowledge of advanced engineering analysis and design tools	(b) Ability to use advanced engineering analysis and design tools to design practical systems	(c) Ability to access and use the literature in one's field	(d) Ability to communicate effectively	
Student Exit Survey (Part II)	1. The student developed a deeper understanding of the principles underlying a particular field of study, as well as those underlying other fields.	√				72 (71, 72, 77, 81)
	2. The student developed a knowledge of the advanced methods of analysis and synthesis that are more powerful and more generally applicable than those taught at the undergraduate level.	√				73 (60, 72, 78, 79)
	3. The student developed the ability to independently read and understand the classical and contemporary works that contribute to advancements in the chosen field.			√		78 (73, 60, 81, 79)
	4. The student developed an insight into the significance and the limitations of the available results and methods, as well as the relationships of each other.		√			68 (72, 64, 76, 78)
	5. The student developed the capacity, imagination, and courage to contribute to the advancement of the electrical engineering field.		√			66 (68, 64, 77, 81)
	6. The student developed the ability to make quality written and oral presentations to technically literate audiences.				√	72 (72, 64, 77, 83)
Thesis Defense Questionnaire	1. Knowledge of advanced engineering analysis and design tools	√				88 (84, 92, 80, 79)
	2. Ability to use advanced engineering analysis and design tools to design practical systems		√			96 (89, 92, 8, 81)
	3. The ability to access and use the literature in one's field			√		84 (79, 85, 74, 70)
	4. The ability to communicate effectively				√	83 (85, 88, 82, 84)
Averages: 2008/09		78	77	81	81	
2007/08		72	76	76	78	
2006/07		79	73	73	76	
2005/06		79	79	78	79	
2004/05		80	80	74	83	

VI. Conclusions and Recommendations

From the above assessment results and analysis, we can conclude that our MSEE program met all desired outcomes in the academic year 2008/09. Scores of outcomes are generally “good” or “very good.”

In past years there may have been some confusion in the student exit survey form. For example, some students complained about the assistantships in the comment section but gave scores of 1 or 2 (good) in the corresponding questions (questions 5 and 6 in part I). Also, some students mentioned that the program offers excellent courses but gave scores of 5 or 6 (poor) in the corresponding questions (question 1 in part I). Future work will therefore involve clarifying the score system of the student exit survey form.

All areas in the student exit survey should be improved. As discussed in this report, these areas can be improved by integrating project work in graduate courses, especially in the 600-level courses.

Data collection needs to be more systematic. This year we received only 10 student surveys and 10 thesis surveys out of 26 graduates.

One important observation made in previous years was that we need to take a close look at how to assess thesis students compared to non-thesis students. Are they different or similar? One way to assess the differences is to add an item on the student exit survey form asking them to identify themselves as either a thesis student or a non-thesis student.

As the CSU Assessment Office suggested on our 2003/2004 assessment report, we only employ indirect measures for non-thesis students (i.e., the student exit survey) so more measures are needed to assess them. One way that we can use to assess non-thesis students is to collect forms similar to the faculty thesis defense questionnaire for non-thesis students. We can call this a “project questionnaire” and distribute it to the faculty of courses where project reports and presentations are given by the students.

The CSU Assessment Office recommended that we consider establishing benchmark scores for acceptable performance for each outcome. This will be discussed by the ECE faculty in fall 2009.

Appendix 1. Exit Survey Results, Fall 2008-Spring 2009

Outcomes/Criteria for Evaluation	Score*						Average**
	1	2	3	4	5	6	
Part I							
1. The MSEE program promotes excellence in teaching.	1	6	2	0	1	0	72
2. The MSEE program promotes excellence in research.	2	2	3	1	1	1	67
3. The MSEE program provides best qualified faculty and promotes their development.	2	5	2	0	0	1	80
4. The MSEE program encourages faculty to obtain funds for research and to maintain state of the art laboratories.	0	3	3	2	0	2	63
5. The MSEE program awards teaching assistantships to the most qualified students.	1	2	2	2	1	2	60
6. The MSEE program awards research assistantships to the most qualified students.	1	1	3	1	1	3	60
Part II							
1. The MSEE students developed a deeper understanding of the principles underlying a particular field of study, as well as those underlying other fields	3	4	0	2	1	0	72
2. The MSEE students developed a knowledge of the advanced methods of analysis and synthesis that are more powerful and more generally applicable than those taught at the undergraduate level	2	5	0	1	1	1	73
3. The MSEE students developed the ability to independently read and understand the classical and contemporary works that contribute to advancements in the chosen field	2	5	2	1	1	0	78
4. The MSEE students developed an insight into the significance and the limitations of the available results and methods, as well as the relationships of each other	2	4	0	4	0	0	68
5. The MSEE students developed the capacity, imagination, and courage to contribute to the advancement of the electrical engineering field	3	2	2	1	2	0	66
6. The MSEE students developed the ability to make quality written and oral presentations to technically literate audiences	2	5	1	1	1	0	72

* Scores: 1 = Strongly agree, 5 = strongly disagree, 6 = no knowledge

** In calculating the averages, a score of 1 is considered as 100 points, a score of 2 as 80, a score of 3 as 60, a score of 4 as 40, and a score of 5 as 20. A score of 6 is not counted in the average.

Student Exit Survey, Part III Comments

2008-09

- Need more power system courses. None of the faculty encouraged me in my field.
- The program should have a transparent procedure of graduate assistantship assignments. Courses should be not be canceled.
- Some of the professors don't understand the students' questions. Some professors do not encourage students to take out-of-department courses even after degree requirements are completed. Assistantships are given on the basis of recommendations rather than student competence.

2007-08

- Need more pressure during the semester, not at the end of the semester
- Need more CE courses
- Need 2- or 3-credit courses
- More research opportunities
- Excellent (2)
- Better than earlier
- Good 500-level courses but not many advanced courses
- Liked hands-on experience
- TAs and RAs are not well assigned
- Enhanced my analytical thinking
- Flow of course infrastructure was not well organized
- Need more assistantships

2006-07

- Thanks for professors and staff
- Professors do not take thesis defense seriously. I did the work for nothing.

2005-06

- Need more computer network courses, Need more power system courses (2), Need more courses like VLSI, Need more advanced courses, Need more software courses, Need more courses
- Thanks for professors and staff
- No idea which research is going on in the department (need mini-conference)
- MSEE program is good (3), The program is very helpful to build skills in EE, Appreciate faculty's commitment in teaching and research, Professors are highly qualified

2004-2005

- Need more advanced courses (3), Need more digital/computer engineering courses, Need more courses in communication field, More computer engineering courses than necessary (2)
- Should have a greater research collaboration with local companies, Want to see more research works on software field, Need better equipment for research, More technical seminars
- Program is good, Learned a lot (5), Teachers are always ready to help, Evening classes are good for working students (2)

Of the 10 questionnaires returned in 2008/09, only three students gave written comments. Two of these three students complained about the apparent unfairness in the assignment of graduate assistantships. If the assistantship assignments were more open and transparent, we could alleviate some of that criticism.

Appendix 2. Thesis Defense Questionnaire Results, Fall 2008-Spring 2009

Objectives/Criteria for Evaluation	Exemplary	Satisfactory	Unsatisfactory	Averages*	
				2008/09	2007/08
1. Knowledge of advanced engineering analysis and design tools	7	3		88	84
2. Ability to use advanced engineering analysis and design tools to design practical systems	9	1		96	89
3. The ability to access and use the literature in one's field	6	4		84	79
4. The ability to communicate effectively					
a. Quality of the writing style	7	3		88	84
b. Organization of the written dissertation	6	3	1	80	86
c. Organization of the presentation	7	3		88	83
d. Clarity of language usage	6	4		84	89
e. Quality of slides	4	6		76	81

* In calculating the averages, Exemplary is considered as 100, Satisfactory as 60, and Unsatisfactory as 20.

We see that the 2008/09 averages are slightly better than last year, although the averages for the two years are quite similar.

Out of 80 individual responses this year on the faculty thesis survey forms, only one was “unsatisfactory.” However, there is no reason for a faculty to give an “unsatisfactory” evaluation. If the faculty believes that the written thesis or oral defense is not satisfactory, then the faculty has the prerogative to ask for a revision before signing the thesis approval form. In the future the department can emphasize the faculty’s responsibility in this area in order to raise the quality of the thesis material.