



State University of New York
College of Environmental Science and Forestry

Department of Environmental Resources and Forest Engineering

To: ERFEG Faculty
From: Chuck Kroll, Undergraduate Curriculum Coordinator
Subject: Summary of 2006/2007 Assessment Activities
Date: September 27, 2007

ERFEG Faculty:

The enclosed pages summarize the SUNY ESF Department of Environmental Resources and Forest Engineering's (ERFEG's) assessment activities for the 2006/2007 academic year. Included in the full report is information regarding the remapping and results of old assessments, current course assessment activities, student learning outcomes, and results of the 2006/2007 assessments. Here we present only the results of the 2006/2007 assessment, but discuss these additional activities.

One challenge we undertook was the remapping of our past and present assessment activities to ABET Criteria a – k. In the past our assessment activities were mapped to our program outcomes. This new mapping will make the relationship between our assessment activities and ABET's requirements easier to understand. During the 2006/2007 academic year, 7 of the 11 ABET criteria were assessed. The action items resulting from these 7 assessments indicated only minor course changes were necessary, and that no curricular changes were required.

Below I briefly summarize the materials included with this summary:

- 1) Remapping and Results of Old Assessments

This section presents results from old assessment activities. Included in this section are two items. The first is a remapping of old assessment to ABET Criteria a-k. This table includes past assessment activities as well as the performance criteria employed. The second item presents results of past assessments that were reported in our reaccreditation Self Study. Included in this table are the metric/trigger for response, results of prior assessments, assessment response, and potential changes for the future. This information was useful when developing new assessment activities.

2) Current Course Assessment Activities

This section contains the relationship between the 2006 Criteria for Accrediting Engineering Programs and our course activity. Members of the ERFEG faculty identified which of the a – k criteria their required undergraduate courses satisfied with Depth (D), Exposure (E), and Familiarity (F). Enclosed in this section are four documents: a summary table of proposed assessment activities based on courses with depth, a blank course hierarchy table (for future faculty use), an example of the course hierarchy for FEG430: Engineering Decision Analysis (a required senior level course), and an advanced proposed assessment summary. The proposed courses were chosen to distribute the responsibility of direct assessment throughout the faculty. In addition, the summary contains other courses that were identified as having depth for a particular criterion. This exercise needs to be revisited, especially given our changing curriculum and new faculty members. The advanced assessment proposal was done as an academic exercise to identify courses at different levels within the curriculum that could be used for assessment.

3) Student Learning Outcomes

The third section contains the Student Learning Outcome tables for all our proposed direct assessment activities. In addition, a blank student learning outcome table, a glossary of terms, an additional example, and links to critical thinking scoring rubrics are included. These additional materials were obtained from the ABET internet site, and were of particular use when developing Learning Outcome tables. We have developed these tables for all criteria except criterion e (which we will add in the future). Many of the faculty attempted to develop these tables such that the performance criteria reflected back on Bloom's Taxonomy levels.

4) Results of 2006/2007 Assessments

The fourth and final section contains the results of the 2006/2007 assessments. This includes a summary table of results, as well as all the individual results collected from ERFEG faculty. In 2006/2007 we performed assessments for 7 of the 11 ABET criteria. This table includes action items for each of the criteria assessed.

Based on these materials, the following activities are recommended:

- 1) We should consider ways to make assessments more standardized across the faculty, which will allow them to be understood and summarized more easily in the future.
- 2) As a Faculty, ERFEG needs to review these assessment results and make recommendations as to needed actions.
- 3) We need catalogue assessment results and activities. This document provides one method for doing this. We need to also consider documenting raw

assessment results while keeping confidential information about individual students.

- 4) As we have decided as a Faculty to perform direct assessment activities on at most a 2-year interval, it is vital that we address assessment of the 4 ABET criteria that were not assessment during the 2006/2007 academic year. Efforts should be made for continued assessment of all ABET criteria.
- 5) With our new faculty and curriculum, we should revisit the relationship between the 2006 Criteria for Accrediting Engineering Programs and our current course activity.
- 6) A redistribution of responsibilities for direct assessments is necessary so that all faculty members are involved with assessment activities.

The results collected from the ERFEG faculty are excellent. I personally feel we are on the right track with our assessment efforts, and are developing a structured program of assessment that will satisfy both our needs and ABET's requirements. I would like to thank all of the ERFEG Faculty for their efforts in developing our assessment protocols. We are clearly on a path of continued success within our Faculty, and time, effort, and attention we put on assessment activities during the 2006/2007 academic year will aid in that success. Please advise me of any changes, corrections, or additions that are needed in this annual assessment summary.

Sincerely,



Chuck Kroll

ERFEG Undergraduate Curriculum Coordinator

Results of 2006/2007 Assessments

	Criteria	06/07 Assessment	Class/ Activity	Collection Agent	Action Item
a.	An ability to apply knowledge of mathematics, science and engineering	No			
b.	An ability to design and conduct experiments, as well as to analyze and interpret data	Yes	FEG350	Mountrakis	No trigger. Only minor course changes are recommended.
c.	An ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability	Yes	FEG340	Endreny	1 trigger (student failed course). Provide students with more details on how to evaluate their designs
		Yes	FEG489	Daley	Service learning design projects must be smaller in scope and located in proximity of campus. Consider economics earlier
d.	An ability to function on multi-disciplinary teams	Yes	FEG489	Daley	Need continued formative assessment and intervention with teams and individuals not functioning to fullest potential.
e.	An ability to identify, formulate, and solve engineering problems	No			
f.	An understanding of professional and ethical responsibility	Yes	FEG489	Daley	Strengthen consideration of sustainability as a design consideration.
g.	An ability to communicate effectively: Overall	Yes	FEG489	Daley	No trigger. Not a systematic problem with overall communication skills.
	An ability to communicate effectively: Oral	Yes	FEG489	Daley	Some individuals need extra work on this. Consider more structured oral presentations in other classes or earlier in FEG489.

	An ability to communicate effectively: Written	Yes	FEG430	Kroll	No trigger. Only minor course changes are recommended.
	An ability to communicate effectively: Graphically	Yes	ERE371	Quackenbush	No trigger. Only minor course changes are recommended.
h.	The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.	No			
i.	A recognition of the need for, and an ability to engage in life-long learning	No			
j.	A knowledge of contemporary issues	Yes	FEG489	Daley	No action needed
k.	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.	Yes	FEG340	Endreny	1 trigger (student failed course). Provide students with more details on how to develop design flowcharts