



State University of New York
College of Environmental Science and Forestry

Department of Environmental Resources and Forest Engineering

To: ERFEG Faculty
From: Chuck Kroll, Chair of ERFEG
Subject: 2007/2008 Assessment Report
Date: September 28, 2008

ERFEG Faculty:

The following provides a summary of SUNY ESF Department of Environmental Resources and Forest Engineering's (ERFEG's) assessment activities for the 2007/2008 academic year. During the 2007/2008 academic year, 9 of the 11 ABET outcomes were assessed. The initial section of this report provides a summary of those assessments, and a discussion of past and future assessment activities. The following sections outline: 1) responses to 2006/2007 recommended actions, 2) results from 2007/2008 assessments, 3) 2007/2008 recommended actions, and 4) concluding remarks.

Responses to 2006/2007 Recommended Actions

The 2006/2007 Annual Assessment Report was the first annual assessment report produced by ERFEG. The 2006/2007 Report was distributed and reviewed by the ERFEG faculty, and it was concluded that such reports were paramount to our continued success in program outcome assessment. The 2006/2007 assessment report contained a number of recommended actions. Below responses to each recommended action are discussed:

Recommended Action 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.

Response 1: While the ERFEG faculty has in general done a good job standardizing assessments, there are still a number of faculty members who are not following the protocol that was previously agreed upon. In the future we will strive for every assessment to begin with a short summary of the:

- Learning Outcome
- Context for Assessment
- Activity
- Assessment Method
- Time of data collection
- Collection Agent
- Responding Agent

This will be followed by a more thorough discussion of the:

Quantitative rubric
Response to past assessment
Outcome Triggers
Results of Assessment
Conclusions

This section should be followed by the raw data results of the assessment. In addition, a number of faculty members included a copy of the assessment assignment with their annual assessments, which is recommended in the future. Another suggestion the ERFEG might consider is also including examples of student output employed in the assessment, as this would provide further information for assessing our assessment activities.

In response to the needs to standardize assessments, a Guide to Assessment Handbook is being produced by ERFEG. This Guide will provide discussion of our assessment activities as well as provide guidance as to how best to standardize, present, and document our ongoing assessment activities.

Recommended Action 2: As a Faculty, ERFEG needs to review these assessment results and make recommendations as to needed actions.

Response 2: The ERFEG faculty reviewed the 2006/2007 report, and recommended that such reports be produced in the future. The ERFEG faculty has biannual Faculty Retreats, during which review of ongoing assessment activities are an agenda item.

Recommended Action 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.

Response 3: As our Annual Assessment Report is for internal purposes and ABET review, we have decided to include raw assessment results within the annual assessment produced by the faculty. While the 2006/2007 report provides some documentation of our assessment activities, we need to produce electronic backups of all ongoing assessment activities as well as produce efficient ways to catalogue these activities (such as producing files within the ERFEG Chair's office which contains this information).

Recommended Action 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.

Response 4: While we are following at least a 2-year interval for all assessments, in general we are providing a direct assessment of all ABET outcomes on an annual basis. Most faculty are including assessment activities within their normal course activities, which provides efficiency and effectiveness to the assessment process. An annual assessment also provides a more thorough review of program activities and outcomes.

Recommended Action 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.

Response 5: During the 2007/2008 academic year, new faculty members who were teaching required courses where past assessments had been performed were mentored and produced direct assessments. As our new curriculum is being phased in, we must pay close attention to avoiding any gaps in our assessment protocol. During the fall of 2008 we are reconstructing our Course Hierarchies to ensure that effective assessment activities are planned.

Recommended Action 6: A redistribution of responsibilities for direct assessments is necessary so that all faculty members are involved with assessment activities.

Response 6: We continue to believe that all ERFEG faculty members should share the responsibilities for direct assessments. This not only educates them on our ongoing assessment activities, but also provides a way for newer faculty members to better understand the ERFEG curriculum and program outcomes. As part of the Course Hierarchies discussed in Response 5 above, we will ensure that all ERFEG faculty members are involved with direct assessment activities.

Results from 2007/2008 Assessments

The table following this cover letter contains a summary of the 2007/2008 direct assessment activities. In general, there were only minor triggers that required small changes in course materials. Unfortunately, there was also one major trigger for which curriculum changes are recommended. The pass rate of ERFEG students on the 2007 and 2008 spring Fundamental of Engineering (FE) exam was less than the national average. We employ the FE exam results to assess ABET Outcome a: An ability to apply knowledge of mathematics, science and engineering. Potential reasons for this result include the following:

- 1) The Forest Engineering Club, a student run organization, is responsible for organizing FE exam review sessions. For the past 2 years it appears that students have been poorly organized, and many review sessions were not performed or poorly presented.
- 2) Many students have not been attending FE exam review sessions. In the past, attendance to review sessions was not mandatory.
- 3) Many students were not familiar with the FE exam structure, review materials, and exam booklet. For instance, many students appeared unaware of which FE exam afternoon session they should take.
- 4) Students may be poorly prepared for the FE exam due to improper training within the ERFEG curriculum.

We believe that the reason for this assessment outcome trigger is due to reasons 1), 2), and 3) (and not 4)). As such ERFEG will request all students graduating in the spring or following fall to take a 1 credit FE review course for a grade. The goals of this course will be to:

- 1) Educate ERFEG students about the content and structure of the FE exam.
- 2) Present FE exam review materials and the FE exam booklet so that students can familiarize themselves with these materials.
- 3) Identify subject area strengths and weaknesses, and provide a more thorough review of areas identified as weaknesses. This information may be obtained by having students take an exam at the beginning of the semester, which in itself may provide a direct assessment.

In addition to these activities, it is important for the ERFEG faculty to reflect back on their ongoing assessment activities and determine if they are thorough enough to identify areas of weakness, produce triggers identifying areas of weakness in a timely and accurate manner, and provide feedback loops to address areas of weakness that produced triggers.

2007/2008 Recommended Actions

Based on the results of the 2007/2008 direct assessments and ongoing assessment activities, the following recommended actions have been identified:

- 1) The Guide to Assessment Handbook needs to be completed and distributed to the ERFEG faculty. This handbook should accurately describe the context, background, layout (i.e. who does what when), and cataloguing of our assessment activities. It should also summarize our ongoing direct and indirect assessment activities, and provide a standardize format for all direct and indirect assessments.
- 2) Indirect assessment activities for all ABET outcomes must be identified and documented. This will strengthen our current assessments.
- 3) We should continue to reflect on our current and future assessment needs, using the Annual Assessment Report, newly constructed Course Hierarchies, and assessment reviews and updates at faculty meeting and retreats to improve our assessment activities.
- 4) We should develop a new 1 credit course which provides a review of FE exam structure and materials.

Concluding Remarks

The assessment results collected from the ERFEG faculty continue to be 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. We are clearly on a path of continued success within our Faculty, and the time, effort, and attention we put on assessment activities during the 2007/2008 academic year aids this success. Please advise me of any changes, corrections, or additions that are needed in this annual assessment report.

Sincerely,



Chuck Kroll
Chair ERFEG

Results of 2007/2008 Assessments

	Criteria	07/08 Assessment	Class/ Activity	Collection Agent	Action Item
a.	An ability to apply knowledge of mathematics, science and engineering	Yes	ERE371	Quackenbush	No trigger. No action needed
		Yes	FE Exam Results	Hassett	Trigger. Pass rate for exam less than national average. Remedial plan developed, including curriculum changes
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	No trigger. Only minor course changes are recommended.
d.	An ability to function on multi-disciplinary teams	No			
e.	An ability to identify, formulate, and solve engineering problems	Yes	ERE351	Im	No trigger. No action needed
f.	An understanding of professional and ethical responsibility	No			
g.	An ability to communicate effectively: Overall (using multiple measures together)	No			
	An ability to communicate effectively: Oral	No			
	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.

Results of 2007/2008 Assessments (continued)

	Criteria	07/08 Assessment	Class/ Activity	Collection Agent	Action Item
h.	The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context.	Yes	ERE351	Im	Minor trigger. Noncompliance with assignment.
i.	A recognition of the need for, and an ability to engage in life-long learning	Yes	FEG300	Daley	Minor trigger. Noncompliance with assignment.
j.	A knowledge of contemporary issues	No			
k.	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.	Yes	FEG340	Endreny	1 trigger. Corrective plan dedicated to model work flow diagrams will be implemented.