Undergraduate Assessment Yearly Report

Environmental Science B.S. Degree
Fall 2006-Spring 2007

I. **Assessment Activities:**

Component Area Goals: Environmental Science is a BS Degree Program within the Department of Integrated Science and Technology. This Degree Program has as its primary goals the education of undergraduates with sufficient in field knowledge and technical skills so as to be meaningfully employed in the assessment and management of environmental resources or to qualify for admission into elite environmental programs. Students must first meet General Education requirements for the university, college, and department, must complete a five course core of IST environmental studies courses, must complete a set of environmental electives, and must finally complete 16 hours of 300-400 level natural science courses. Because ES (undergraduate) students (1) share over ¾'s of their curriculum with students achieving an IST degree and (2) because they share completely with IST students the curriculum and learning experiences that are to be assessed, the ES assessment annual report is identical to the one submitted for IST.

Learning Outcomes/Competencies & Data Collection: The Integrated Science and Technology faculty have attempted several strategies to develop meaningful assessment tools that link learning outcomes and competencies to the IST and ES goals stated above. We have an extensive chronology of attempts to find meaningful measures and benchmarks that truly assess learning outcomes. To date we have no consistent record of choosing, developing, and following through on assessing learning outcomes. The difficulties in part have been associated with the diversity of our students and faculty (e.g., general technology, computer IT, biotechnology, environmental studies) and also the wide range of learning experiences of our students. Course work and student activities cover such topics as DNA forensics, medically related diagnostics, environmental planning, or assessing stream structure. Specific content or intellectual skills for these activities are quite diverse. However, in a recent discussion with Dr. Reynolds a set of learning outcomes became apparent that first fit the "goals" outlined above, second are applicable to the wide range of students identified in this text, and third are compatible with the current assessment structure. This assessment strategy will focus on one of our activities that we do best, i.e. focusing students on planning, developing, and completing research and development projects. Our efforts in this area include four courses that are required in this area …IST 120 Connections I, IST 220 Connections II, IST 490 Senior Project I, and IST 491 Senior Project II. Because students expand their knowledge from this course sequence to a variety of internships, research studies, and product development projects and because these are directly related to measurable levels of performance this seems to be potentially a productive area of assessment of learning outcomes. We will be using Assessment Day this April to identify Learning Outcomes, Competencies, and Attributes for Data Collection relative to this focus area of IST.

Complete the Assessment of Student Outcomes Chart as a summary table.

A. **Results:** Chart will be revised and developed during April Assessment Day. **The results should be displayed in chart form (see attached) in addition to a brief narrative.**
   1. This is the primary goal of Assessment Day April 2007.

I. **Senate Bill 653 Compliance:** Our focus on student research and development will actually enable us to comply with Senate Bill 653 more easily. We will review and assess what courses in our four course sequence and what activities in supervised student research and project development enhance student …skills in reading, oral and written communications, mathematics, critical thinking, science and technology, research and human relations."

A. **Plans for the current year:** Our primary goal for the current year has been achieved and that is to identify and clarify the components critical to a good assessment plan. Those are stated above. Our next goal is to more effectively implement this basic plan.

B. **How do you hope to meet these goals/plans?** A critical factor has been a lack of personnel

resource to effectively develop a good assessment plan. The irony is that working intensively with large numbers of undergraduates in research and development projects often leaves little time to effectively work this activity into assessment documentation. To address this issue, Mr. Brian Morgan has agreed to work as the IST Assessment Director. Brian's work developing MUBERT and chairing the University Curriculum Committee have demonstrated his organizational, analytical, and technical skills.

C. What are your goals/plans for the current year?

1. Clearly state our objective of focusing our four course sequence for research and development activities for assessment

2. Identify a functional set of learning outcomes

3. Connect these learning outcomes to

D. What things will you do differently?

1. Basically we need to totally restructure; what is obvious now (and should have been obvious before) is that we have continuously reformed our assessment so that it measures only student outcomes beyond the university, e.g. their employment and capacity to apply what they learn post graduation. What we should have assessed is the efficiency of what we do relative to that learning.

E. What activities will you add/delete?

1. Looking more carefully at our previous efforts and the committee's response, we essentially need to start from "scratch".

F. What changes in your assessment plan are you considering?

1. Focus on the forms and directions obtained from Dr. Reynolds. Clearly define what direct and indirect measures we will apply and associate attributes with measurable parameters with these.
2. More clearly define benchmarks and set up a schedule to assess these.
3. Provide a specific analysis of each benchmark.
4. Produce an action plan that better integrates our benchmarks into our assessment as well as our teaching.

I. **Assistance Needed:** Given your plans for the current year's activities, what kind of assistance from the UAC do you need? On which topics would you like more information or assistance?

A. As Brian Morgan works closely with our faculty and sets up an appropriate structure for assessment, he will need help assimilating our assessment plan into appropriate documentation that is completely in compliance with university standards.

I. **What one most important thing has the component area learned through this process?**