Monitoring Report to the Middle States Commission on Higher Education from SUNY-ESF Syracuse, NY 13210

Quentin D. Wheeler, President

3/1/2015

Subject of the Follow-Up Report:

"To request a monitoring report, due March 1, 2015, documenting further development and implementation of a comprehensive, organized and sustained assessment process that (1) evaluates the institution's overall effectiveness in achieving its mission and goals with evidence that assessment information is used in budgeting, planning, and allocating resources (Standard 7) and (2) provides sufficient, convincing evidence that students are achieving key institutional and program learning outcomes, including in educational offerings and general education, and that assessment information is used to improve teaching and learning (Standards 12 and 14)."

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Introduction

This monitoring report has been prepared at the request of the Middle States Commission on Higher Education (MSCHE) in response to a Progress Report submitted in March, 2014. The specific request is for a monitoring report:

… documenting further development and implementation of a comprehensive, organized and sustained assessment process that (1) evaluates the institution's overall effectiveness in achieving its mission and goals with evidence that assessment information is used in budgeting, planning, and allocating resources (Standard 7), and (2) provides sufficient, convincing evidence that students are achieving key institutional and program learning outcomes, including in educational offerings and general education, and that assessment information is used to improve teaching and learning (Standards 12 and 14).

This report addresses the requested information by examining the progress and current status of assessment efforts for institutional effectiveness (Standard 7), General Education (Standard 12) and program student learning (Standard 14) separately.

Institutional Context

Institution Attributes

The State University of New York College of Environmental Science (ESF or the College) is one of the 64 institutions in the State University of New York (SUNY) system. It was created by an act of the New York State legislature in 1911 as the New York State College of Forestry at Syracuse University. In 1972 the name was changed to its current title.

Though the College was located "at Syracuse University" (and is now adjacent to Syracuse University), ESF has never been part of Syracuse University. In this respect it differs from the State Contract Colleges at Cornell (e.g. Agriculture and Life Sciences), which are unambiguously part of Cornell University.

Nevertheless, from its inception ESF has contracted with Syracuse University to provide a range of student services and access to courses not offered by ESF (referred to as "accessory instruction"). In recent years, ESF reliance on Syracuse University for these services has gradually diminished owing to escalating costs and various external forces (e.g., NCAA regulations and library subscription practices). That trend is likely to continue for the foreseeable future.

ESF is a Carnegie Doctoral/Research university. Other Carnegie descriptors include STEM dominant, high undergraduate, primarily residential, and higher transfer-in.

ESF is the only Carnegie Doctoral/Research university that is classified as "small." Undergraduate enrollment in fall, 2014 was 1765; graduate enrollment was 515. In addition, ESF enrolls approximately 525 non-matriculated students each year, primarily in the "ESF in the High School" program.

Approximately 45% of the entering undergraduate students are transfers from other colleges and universities. Twenty percent of the undergraduate students are residents of states other than New York or are residents of other countries (2%).

Admission at the undergraduate level is selective ("more selective" in the Carnegie classification system) with 50% of freshmen applicants admitted. Admission yield has ranged from 36-40% in recent years. Admission is largely need-blind.

For the most recent cohort, six-year graduation rate was 72%. This compares to a national average for students of similar entry credentials of 63% according to US News and World Report. Average cumulative indebtedness at graduation for the most recent graduating class was $16,091, earning the College a place on Princeton Review's list of 200 Best Value Colleges. Seventy-seven percent of the last year's responding baccalaureate graduates (81% response rate) reported employment or graduate school placement within 6 months of graduation.

At the graduate level, 36% of the students are enrolled in doctoral programs; most of the remainder are in master's programs (a small fraction are enrolled in advanced study certificate programs). Twenty-six percent of the graduate students are international.

The College has 24 undergraduate majors, 20 leading to the Bachelor of Science degree, one leading to the Bachelor of Landscape Architecture degree and three leading to the Associate of Applied Science degree. In broad-brush, the programs cover environmental sciences, environmental and natural resources management, environmental and biological engineering, environmental design, environmental policy, environmental social science, and utilization of natural resources.

These programs are administered through eight academic departments and the interdisciplinary Division of Environmental Science. The AAS programs are conducted at the College's Wanakena Campus in the Adirondacks under the auspices of the Department of Forest and Natural Resources Management.

The College's Graduate School oversees nine graduate programs, each with multiple options.

Academic programs rely heavily on experiential learning, including indoor and field laboratories, internships, research experiences, and applied capstone projects. Results from the National Survey of Student Engagement (NSSE) are indicative of this emphasis. In the most recent survey (2013), ESF graduating seniors reported having significantly more (1) research experiences, (2) practicum, internship, and field experiences and (3) community services experiences than all peer comparison groups.

The overall student/faculty ratio is 16:1. Considering undergraduates only, the ratio is 13:1.

The College is headed by a President who answers to both a Board of Trustees (ESF is the only SUNY institution with its own Board of Trustees) and to the SUNY Chancellor. Four vice presidents report to the President including the Provost and Vice President for Academic Affairs, the Vice President for Administration, the Vice President for Enrollment Management and Marketing, and the Vice President for Strategic Initiatives and Government Relations. This group plus the Chief Diversity Officer, who also reports to the President, make up the Executive Cabinet.

The College operates on an annual budget of $80M (FY 2014). Fifty -six percent of the revenue is provided by state appropriations through SUNY; 12% is derived from direct tuition payments; 19% is acquired through research contracts and grants; and 13% comes from gifts and other sources.

Forty-four percent of the budget is spent on instruction and another 16% on academic support; 23% of the budget is spent on research and another 2% on public service and outreach; 13% of the budget is used for institutional support and 2% for other institutional operations. Compared to IPEDS peer institutions, ESF spends a higher fraction of its revenue on research and a lower fraction on "other institutional operations."

Presidential Transition and Strategic Planning

In January, 2014 Dr. Quentin Wheeler became the College's fourth President replacing Dr. Cornelius B. Murphy, Jr. who had served in that role for the prior 13½ years. Dr. Wheeler came to ESF from Arizona State University where he had been Vice President and Dean of the College of Liberal Arts and Sciences.

Shortly after joining ESF President Wheeler began a process to draft a new strategic plan for the institution. A strategic planning steering committee composed of the Executive Cabinet and others began planning the process in summer, 2014. The process is scheduled to culminate in summer, 2015.

The strategic plan will center on the answers to six questions and their implied priorities for ESF's future. They are:

- What learning objectives do we desire that will characterize and distinguish an ESF education regardless of major?
- How should ESF engage with its communities to better them and build good will and support for its mission?
- What are the "Right" questions for ESF to focus on in its academic (instructional, research and service) programs?
- How should ESF be organized to most effectively meet its mission and objectives?
- How can ESF improve public science literacy and contribute to a diverse future workforce?
- How can ESF create a unique "brand" and maximize its visibility and reputation?

During fall 2014 several "listening sessions" (virtual and physical) were conducted to collect possible answers to these questions from ESF stakeholders, including students, faculty, staff, alumni, external partners and ESF's Board of Trustees. Committees composed of faculty, staff, students, and administrators have been formed to condense and shape this input into a manageable set of concrete goals and objectives. Their recommendations are due March 6, 2015. After a community comment period, the committees will refine their recommendations and submit them to the strategic planning steering committee for incorporation into a new strategic plan that will be released at the start of the 2015-2016 academic year. Progress on development of the strategic plan can be followed on the College's website (http://www.esf.edu/strategicplan/).

The adoption of a new strategic plan will trigger revisions in unit level plans so that they are compatible and supportive of the newly defined institutional objectives. These will be completed in fall, 2015, in time for the beginning of the next annual planning and budgeting cycle.

Coincident with President Wheeler's arrival, Syracuse University also welcomed a new Chancellor, Dr. Kent Syverud. Six months into his tenure, Chancellor Syverud asked for a detailed examination of the relationship between Syracuse University and ESF as a prelude to drafting the next five-year (AY2016-2020) contract between the institutions. That examination will conclude by April 2015, and has the potential to engender significant changes that will affect ESF's priorities, planning and budgeting in the years ahead.

Overview of Assessment, Planning, and Budgeting at ESF

Since 2003 the College has operated under a strategic plan published under the title *Vision 2020*. Using that as a basis, units have set goals and objectives annually that support the strategic goals and objectives. In addition, units have been assigned responsibility for

tracking and reporting on institutional goals. Progress toward unit and institutional goals and objectives has been reviewed annually. Results have been used to set targets for the upcoming year.

For administrative units, review of progress toward objectives and targets for the following year are shared and discussed among the Cabinet members at the annual Cabinet Retreat. Outcomes are shared with the community through publication of proceedings of the Cabinet Retreat. For academic units, progress toward goals and targets for the upcoming year are reviewed by the Provost and published as part of the departmental annual reports.

Academic programs also undergo external review on a six-year rotating schedule. For several programs (engineering, landscape architecture, and forest and natural resources management), reviews are conducted by professional accreditation organizations. These reviews examine achievement of student learning outcomes as well as the quality of the inputs affecting those outcomes (faculty, facilities, resources, curriculum, and administrative processes).

Generally, units budget within a preset allocation to achieve their objectives. The Executive Cabinet reallocates resources to achieve high priority objectives as circumstances demand and permit. This is especially true for faculty lines where, for example, faculty positions have been moved from low enrollment programs to higher enrollment programs and to General Education instruction.

Program student learning outcomes are created and assessed by faculty groups who "own" the program. For academic programs that are administered by a department, the department faculty members are responsible. For inter-departmental programs administered through the Division of Environmental Science, an appropriate set of faculty members is formally identified as the "owner" for each. For General Education, a General Education Committee, composed of the Faculty Governance Committee on Instructional Quality and Standards plus additional faculty members, takes the lead for the entire body of faculty.

Each program has an assessment plan that includes learning objectives, assessment rubrics, and a schedule of data collection and analysis. Typically, data is collected every year and analyzed every third year. Each program has an identified Assessment Coordinator responsible for leading the program's data collection and analysis effort.

In 2009 the College created a position to oversee the overall assessment effort at ESF. The current position title is Associate Provost for Assessment. That individual advises units on assessment practices, maintains an assessment web page, and coordinates entry of assessment data into an institutional assessment database using the commercial software TracDat.

With work on a new strategic plan taking center stage, much of the effort toward meeting *Vision 2020* goals has been suspended. Assessment plans coordinating with the new strategic plan will be developed shortly after the strategic plan is complete in fall 2015.

Progress to Date and Current Status

Institutional Assessment (Standard 7)

The MSCHE Request for Information on Institutional Assessment

MSCHE requests that ESF document*... further development and implementation of a comprehensive, organized and sustained assessment process that (1) evaluates the institution's overall effectiveness in achieving its mission and goals with evidence that assessment information is used in budgeting, planning, and allocating resources (Standard 7)...*

The MSCHE request regarding the Institutional Effectiveness concerns only assessment. Therefore, other aspects of compliance with Standard 7 and will not be addressed here.

Annual Assessment, Planning and Budgeting Activities

The College has a long-standing history of institutional goal-setting and assessment of progress toward those goals. Although it has been described in previous reports and was summarized in the introduction, it is worth another look here to identify and assess the existing documentation of this effort.

When the past President, Cornelius B. Murphy, Jr. took office in July, 2000 he embarked on a strategic planning process that culminated in January, 2003 with the publication of *Vision 2020*, a 20-year strategic plan for the College. Administrative units have produced targets related to the *Vision 2020* goals and plans to achieve them annually. Each summer a Cabinet Retreat has been held wherein achievement of targets has been reviewed and targets for the upcoming year have been set. As discretionary money is limited, units have typically been asked to achieve their targets within fixed budgets, but there are numerous examples of funds being reallocated to achieve high priority objectives. A few include (1) greater funding for financial aid and marketing to increase enrollment and visibility, (2) greater funding for sustainability initiatives to demonstrate College leadership in this arena, and (3) greater funding for institutional advancement to increase private support for College programs.

At the same time, academic departments have been required to annually develop goals, plans and supporting budgets for their programs within the context of *Vision 2020* and to report on progress made in the previous year. As with administrative units, the budgets for academic departments has been relatively stable, but there have also been significant reallocations away from programs whose contributions to the institution have diminished over time to new programs which address societal and College priorities. Examples of programs receiving additional support are new programs in Sustainable Energy Management and Environmental Health and burgeoning programs within the Departments of (1) Environmental and Forest Biology and (2) Environmental Resources Engineering. Additional resources have also been committed to General Education courses so that the College may have greater control over the cost and content of those courses.

Assessment and planning by the individual units is documented for administrative units in the annual Cabinet Retreat notebooks and for academic units in their annual reports. These have provided in past Progress Reports and are not replicated here.

While the Cabinet Retreat reports and the academic department annual reports provide a continuous record of goal-setting, planning and assessment, they did not document in clear fashion the actual continuous quality improvement methodology that is being employed. To rectify that problem the College purchased TracDat, a software package for documenting the cycle of assessment and improvement, in 2012. Since then, units have been required record their assessment activities in TracDat annually. A snapshot of administrative unit assessment information recorded in TracDat is appended in Institutional Assessment Appendix B.

Another element missing from the reporting apparatus was clear articulation of institutional priorities and straightforward ways to measure progress toward their achievement. Therefore, much of the 2013 Cabinet Retreat was devoted to identifying the most important institutional indicators of progress toward the broad institutional goals. Individual units were given responsibility for reporting on progress, though advancing them is a collective endeavor. A table displaying institutional goals, indicators and reporting units is included as Institutional Assessment Appendix C.

At this point, the institution has clearly articulated institutional and unit-level goals as well as defined measures for assessment. Assessment data is being collected and utilized to make unit and institutional plans. Exactly how the data is being used for planning budgeting at the institutional level is, however, not well documented. These processes are for the most part conducted verbally and have not been recorded. Over time, one can see changes in resource allocation and the resulting effect, but the thinking and planning are largely invisible. There remains a need to chronicle the planning and budgeting process and show its connection to assessment data. Beginning with the next planning and

budgeting cycle an annual institutional assessment report will be prepared that documents intentional steps to meet institutional objectives and to track their effectiveness.

Periodic External Review of Academic Programs

Academic programs are reviewed externally on a periodic basis, typically every six years. Table 1 shows the external review schedule.

Table 1. Program accreditation of the A.A.S., B.L.A., and B.S. programs at SUNY-ESF.

Program	Accrediting Body	Review Schedule
(CHEM) - Chemistry BS	American Chemical Society	2013
(EFB) - Aquatics and Fisheries Science BS	Selected Peer Group	2015
(EFB) - Biotechnology BS	Selected Peer Group	2015
(EFB) - Conservation Biology BS	Selected Peer Group	2015
(EFB) - Environmental Biology BS	Selected Peer Group	2015
(EFB) - Forest Health BS	Selected Peer Group	2015
(EFB) - Natural History & Interpretation BS	Selected Peer Group	2015
(EFB) - Wildlife Science BS	Selected Peer Group	2015
(ENS) - Environmental Science BS	Selected Peer Group	2015
(ENS) – Environmental Health	Selected Peer Group	2019
(ERE) - Environmental Resources Engineering BS	Accreditation Board for Engineering and Technology	2018
(ES) - Environmental Studies BS	Selected Peer Group	2017
(FNRM) - Forest Ecosystem Science BS	Society of American Foresters	2015
(FNRM) - Forest Resources Management BS	Society of American Foresters	2014
(FNRM) - Natural Resources Management BS	Society of American Foresters	2014
(FNRM) Sustainable Energy Management	Selected Peer Group	2015
(FNRM-RS) - Environmental and Natural Resources Conservation AAS	Selected Peer Group	2016
(FNRM-RS) - Forest Technology AAS	Selected Peer Group	2016
(FNRM-RS) - Land Surveying Technology AAS	Accreditation Board for Engineering and Technology	2016
(LA) - Landscape Architecture BLA	American Association of Landscape Architects	2017
(PBE) - Bioprocess Engineering BS	Accreditation Board for Engineering and Technology	2018
(PBE) - Paper Engineering BS	Accreditation Board for Engineering and Technology	2018
(PBE) - Paper Engineering BS	Selected Peer Group	2018
(SCME) - Construction Management	Society of Wood Science and Technology,	2016

For many programs at ESF, external reviews are conducted as part of professional program accreditation reviews. For example, the engineering programs are reviewed by ABET; Forest and Natural Resources Management programs by the Society of American Foresters; and the Landscape Architecture program by the American Society of Landscape Architects. For programs that are not reviewed by professional accrediting organizations, reviews are conducted by two or three reviewers from peer programs selected by the Provost.

Reviewers submit an assessment report to which the program must respond. In the case of an accreditation review the response goes to the accrediting organization. Otherwise the response goes directly to the Provost. The review process ends with the program submitting a plan for addressing weaknesses identified in the review. That plan is incorporated into the program's annual report.

In some cases, the reviews result in substantial program change. For example, following the 2012 review of the Construction Management program, the student learning outcomes and curriculum were substantially modified to prepare the program for accreditation by the American Council for Construction Education. Those revisions are now in place and the program has applied for accreditation. As an example of an academic program review conducted outside of a professional accreditation process, the external review report and the departmental response and plan are show in Institutional Assessment Appendix D.

Impact of the Developing Strategic Plan on Assessment of Institutional Effectiveness

As previously mentioned, the College is in the middle of a strategic planning process that is expected to result in a new set of institutional goals and objectives. With attention focused on developing the new strategic plan, much of the effort to assess progress toward the *Vision 2020* goals has been put on hold. The annual Cabinet Retreat to review unit and institutional targets was not held in 2014; the 2015 Cabinet Retreat will be devoted to sharping goals and objectives that will make up the new strategic plan.

Collection of data at the unit level has continued as has entry of unit assessment data and planning information into TracDat. The NSSE and SUNY Student Opinion Survey's continue to be executed as scheduled and their results reviewed by the College's Student Affairs Committee. However, all institutional planning efforts have, for the moment, been redirected to forging new institutional goals in a process unencumbered by the former goals.

After the new institutional goals have been settled this summer, the Cabinet will begin building the initial implementation and assessment plans needed to proceed and track progress.

Analysis of Institutional Effectiveness Assessment at ESF

All of the elements that are part of a continuous quality improvement program are in operation at ESF. Over the last few years the process has been refined, and documentation processes have improved. However, the connection between assessment and planning and budgeting at the institutional level is still cryptic to those who have not been directly involved. There is a need to institute written planning documents that record the planning process and its use of assessment data.

With a major strategic planning process coming to a conclusion in the next few months, a new institutional assessment plan will need to be created as will new assessment plans for each of the College's administrative units. This presents us with an opportunity to use the knowledge and experience we have gained about assessment and planning to design an enhanced process which maximizes effectiveness and transparency. That work will be completed by the end of fall 2015.

General Education (Standard 12)

The MSCHE Request for Information on General Education Assessment

MSCHE requests that ESF document… *further development and implementation of a comprehensive, organized and sustained assessment process that… provides sufficient, convincing evidence that students are achieving key institutional and program learning outcomes, including … general education, and that assessment information is used to improve teaching and learning.*

The MSCHE request regarding the General Education program concerns only assessment. Therefore, other aspects of compliance with Standard 12 and will not be addressed here.

General Education Assessment Activities

In September 2014 Dr. Sean McKitrick, MSCHE liaison to ESF, visited the College to review Commission expectations regarding assessment of General Education. Participants in that conversation concluded that ESF was not fully meeting those expectations in several respects.

At the time of Dr. McKitrick's visit, ESF had been collecting General Education assessment data on communication and quantitative reasoning skills primarily using standardized instruments arranged by SUNY. Other General Education competencies were covered within program assessments as documented in the 2014 Progress Report. However, the clarity and scope of ESF's General Education learning outcomes were not sufficient. More importantly, ESF did not have an organized process for collecting, reviewing, and analyzing General Education assessment data on an institutional level.

Following Dr. McKitrick's visit, the ESF Provost, working with the Faculty Governance chair, created a General Education committee charged with developing and implementing a General Education assessment plan meeting standards articulated by MSCHE. The committee was composed of the membership of the Faculty Governance standing committee on Instructional Quality and Standards plus the directors of the Writing and Math programs.

During October and early November, the committee revised the College's General Education objectives to include all of the areas of General Education student learning specified by MSCHE (written communication, speech communication, quantitative reasoning, scientific reasoning, information literacy, technological competence, and critical analysis and reasoning) in the context of the institutional mission. At the same time, the committee also developed assessment rubrics for the learning objectives and identified

course materials that could be used to assess competencies. This work was presented to the full faculty body in a Faculty Governance meeting on November 19, 2014 where it was favorably received.

Student work used for outcomes assessment was gathered in late November and examined in early December. The examined work was derived from program capstone courses and approved General Education courses. Sample sizes (n) varied among learning outcomes from 30 to 279. The examining group included the General Education Committee plus four additional faculty members, for a total of 12 examiners, amounting to 10% of the College's full-time faculty. Student performance in each learning outcome was assessed by a group of three to four faculty members. Group members worked together during the assessment to assure a common understanding of the standards and consistency in rating performance.

Once the results were tabulated the group of 12 assessors met as a group to discuss the results and to draft recommendations based on them. The results and preliminary recommendations were presented to and discussed with the full faculty at the January 21, 2015 meeting of Faculty Governance. A draft of that report has been submitted to the Provost and is appended as a supporting document (General Education Appendix A). The committee continues to work to refine its recommendations and will finalize them after in-depth discussions with the full faculty body.

General Education Assessment Data Collection, Analysis, and Recommended Actions

Five of the six learning objectives were assessed in fall, 2014. Within each of the learning objectives, multiple components of learning outcomes were assessed using the rubrics developed earlier in the fall. The component outcomes and assessment rubrics are shown presented in full in the attached General Education Committee draft report.

A summary of the results of the December assessment is presented in Table 2. A score of "4" was given for student work exceeding the standard for an outcome; a score of "3" was given for work meeting the standard; a score of "2" was given for work approaching the standard; and a score of "1" was given for work not meeting the standard. A score of 999 or 1999 was given where no evaluation was possible. For each outcome the number in bold indicates the percent of student assignments that met or exceeded the desired level of competency (considering only assignments that could be evaluated).

For seven of the 20 specific outcomes more than 70% of the samples demonstrated competency meeting or exceeding the College standard. These are colored green in Table X. For eleven of the outcomes, between 50 and 69% of the samples demonstrated the desired competency (colored yellow). For two of the outcomes, the desired competency was demonstrated in fewer than 50% of the samples.

In discussing the results the General Education Committee observed that:

- For some outcomes the student work utilized for assessment may not have been suitable for the purpose (identified by scores of 999 or 1999);
- The foregoing occurred largely because several of the learning outcomes were newly introduced in fall 2014 and therefore not addressed in past student work;
- Judgments based on a single year's data may be premature;
- The assessment process could be made more efficient in multiple ways.

A more detailed analysis of the results is contained in the General Education Committee report (General Education Appendix A). Much of the discussion and most of the recommendations in the report center on improving the effectiveness of the assessment process. This seems appropriate for a new process with limited data. Nevertheless, it is likely that curricular changes will be needed to fulfill the newly adopted General Education Student Learning Outcomes, even within scientific and quantitative reasoning skill areas, traditional strengths of the College. The standards the College sets in these areas are understandably high.

TABLE X. Results of fall 2014 General Education Assessment by Component within Broad Student Learning Outcomes.

Techinfolit

Outcome #1			Outcome #4			Outcome #5		
	n = 44			n = 44			n = 53	
4	11%	11%	4	5%	8%	4	13%	16%
3	70%	70%	3	34%	60%	3	40%	48%
2	18%	18%	2	18%	32%	2	28%	34%
1	0%	0%	1	0%	0%	1	2%	2%
999	0%		999	23%		999	0%	
1999	0%		1999	20%		1999	17%	
		82%			**68%**			**64%**

Communication

Outcome #1			Outcome #2			Outcome #3			Outcome #4			Outcome #5		
	n = 58			n = 58			n = 58			n = 58			n = 58	
4	28%	28%	4	2%	11%	4	19%	20%	4	3%	50%	4	0%	0%
3	45%	45%	3	12%	78%	3	31%	33%	3	3%	50%	3	5%	60%
2	22%	22%	2	2%	11%	2	40%	43%	2	0%	0%	2	3%	40%
1	3%	3%	1	0%	0%	1	3%	4%	1	0%	0%	1	0%	0%
999	2%		999	0%		999	2%		999	2%		999	0%	
1999	0		1999	84%		1999	5%		1999	91%		1999	91%	
		73%			**89%**			**54%**			**100%**			**60%**

Quantitative

Outcome #1			Outcome #2			Outcome #3			Outcome #4		
	n = 279			n = 279			n = 332			n = 279	
4	19%	19%	4	19%	20%	4	14%	14%	4	13%	13%
3	39%	39%	3	37%	37%	3	36%	36%	3	30%	30%
2	23%	23%	2	25%	25%	2	26%	26%	2	20%	20%
1	13%	13%	1	11%	11%	1	11%	11%	1	19%	19%
0	7%		0	8%		0	13%		0	17%	
		58%			**57%**			**51%**			**44%**

Science

Outcome #1			Outcome #2			Outcome #3			Outcome #4			Outcome #5		
	n = 229			n = 229			n = 229			n = 229			n = 229	
4	31%	42%	4	30%	38%	4	35%	42%	4	23%	58%	4	9%	50%
3	18%	25%	3	10%	12%	3	9%	10%	3	9%	22%	3	3%	20%
2	12%	16%	2	21%	27%	2	22%	26%	2	3%	7%	2	1%	8%
1	12%	17%	1	19%	24%	1	18%	22%	1	5%	13%	1	4%	23%
999	1%		999	1%		999	0%		999	0%		999	1%	
1999	27%		1999	19%		1999	16%		1999	61%		1999	81%	
		67%			**49%**			**52%**			**80%**			**70%**

Values/Ethics/Diversity

Outcome #1			Outcome #2			Outcome #3		
	n = 30			n = 30			n = 30	
4	3%	7%	4	3%	7%	4	7%	14%
3	27%	57%	3	30%	64%	3	20%	43%
2	17%	36%	2	13%	29%	2	20%	43%
1	0%	0%	1	0%	0%	1	0%	0%
999	53%		999	53%		999	53%	
1999	0		1999	0%		1999	0%	
		64%			**71%**			**57%**

Impact of the Developing Strategic Plan on General Education

One of the focal areas in the current College strategic planning process is enhancing the undergraduate experience. This necessarily involves refreshing the objectives for the undergraduate experience, including student learning outcomes.

The committee charged with developing recommendations for enhancing the undergraduate experience (composed of eleven faculty, staff and student members) includes members of the General Education Committee. They are using the fall 2014 assessment results to inform that discussion. In turn, the General Education student learning objectives may have to be modified to align with the objectives that are adopted in the strategic planning process.

The Undergraduate Experience Strategic Planning Committee will issue a set of draft recommendations on March 6, 2105. These will be refined through the remaining of spring 2015 and finalized at the beginning of fall 2015. Subsequently, the General Education Committee will review the outcomes of the strategic planning process and modify the student learning outcomes and plans to assess them as necessary.

Analysis of General Education Assessment at ESF

For a number of reasons and in a number of ways the College's assessment of General Education student learning outcomes did not fully meet MSCHE expectations. When this became understood in 2014, the College made a concerted effort to rectify the deficiencies. A structure for assessing General Education outcomes was established that utilizes the College's standing committee on Instructional Quality and Standards. That committee has revised and enhanced the student learning outcomes and developed assessment rubrics for them. Using the plan developed by the committee, most of the learning outcomes were assessed at the end of 2014. That assessment revealed areas of strength and weakness in outcome achievement. It also revealed strengths and weaknesses in the assessment protocols. At this writing the recommendations of the General Education Committee regarding student learning outcomes assessment have not been finalized, but the draft report includes a number of actionable items to improve the effectiveness of assessment and suggests areas where instructional enhancements are likely to be needed to meet the desired outcomes.

At this point the College cannot demonstrate a lengthy history General Education student learning outcomes assessment that meets MSCHE expectations. It has, however, created a durable mechanism for conducting such assessment on an ongoing basis and has demonstrated that the machinery operates in a successful and self-enhancing way.

Assessment of Student Learning (Standard 14)

The MSCHE Request for Information on Student Learning Assessment

MSCHE requests that ESF document… *further development and implementation of a comprehensive, organized and sustained assessment process that… provides sufficient, convincing evidence that students are achieving key institutional and program learning outcomes… and that assessment information is used to improve teaching and learning*

Activities

All programs except the three AAS programs at the Ranger School have current assessment plans (Table 3). Academic Program Assessment Appendix A provides supporting documentation.

Table 3. Assessment Plan Status for All ESF Programs

	Program	Assessment Plan in Place[1]	Last Assessment Plan Adjusted
	Chemistry	✓	Fall 2012
EFB	Aquatics & Fisheries	✓	Spring 2015
EFB	Biotechnology	✓	Spring 2015
EFB	Conservation Biology	✓	Spring 2015
EFB	Env. Biology	✓	Spring 2015
EFB	Forest Health	✓	Spring 2015
EFB	Nat. History & Interp.	✓	Spring 2015
EFB	Wildlife Science	✓	Spring 2015
	Env. Science	✓	Fall 2012
	Env. Resources Eng.	✓	Fall 2012
	Env. Studies	✓	Fall 2012
FNRM	For. Ecosystem Science	✓	Fall 2014
FNRM	Forest Resources Mgt.	✓	Fall 2014
FNRM	Nat. Resources Mgt.	✓	Fall 2014
FNRM	Sust. Energy Mgt.	✓	Fall 2014
	Landscape Architecture	✓	Fall 2012
PBE	Bioprocess Eng.	✓	Fall 2012
PBE	Paper Engineering	✓	Fall 2012
PBE	Paper Science	✓	Fall 2012
	Construction Mgt.	✓	Fall 2012
RS	Environmental & Natural Resources Conservation		
RS	Forest Technology		
RS	Land Surveying Technology		

[1] Supporting documentation is located in Appendix A-Academic Program Assessment

Table 4 gives a dashboard type summary of academic program assessment showing the status of each academic program in terms of the last cyclical analysis of assessment data in

December 2012, assessment data collection in the following three years, and the date planned for the next analysis of these three years of assessment data. Most programs have completed one round of multi-year data collection, analysis and actions to improve programs (2009-2012) and have data from each of the subsequent years due for analysis following this semester (Spring 2015). The Forest and Natural Resources programs were recently accredited by the Society of American Foresters and will follow a cycle of multi-year analysis of data that corresponds with the SAF accreditation cycle. The Sustainable Energy Management program is new and has just begun data collection for assessment.

In 2011, the Environmental and Forest Biology programs designed assessment plans that were subsequently found to be difficult to manage, both in terms of the number of measures and the data they hoped would be available. Once it became clear that they would not be able to maintain such an ambitious level of assessment, they embarked on analyzing the data they have to inform program decisions. This analysis and the reworking of their program assessment plans is currently underway and will be completed by May 2015.

Documentation of the last cyclical analysis of assessment data and resulting actions may be found in Academic Program Assessment Appendix B. Single pages from each program are collected in Appendix B to illustrate the reporting system and content. The full report of analysis and actions from all programs totals nearly 400 pages and will be made available upon request.

Academic Program Assessment Appendix C provides documentation showing data results for the years between analyses. We use the same 4 column report to show these results ***however they are not meant to have actions every year as this column is usually only completed every third year***. Unfortunately it was this use without adequate explanation in our last progress report to MSCHE that gave an incorrect appearance that we had not completed a cycle of data collection, analysis and follow-up actions. Our hope is that the summary in Table 4 and the two appendices adequately clarify that this on-going cycle of data collection, analysis and action has been in place and operational for our academic programs since 2009.

Table 4. Summary of Program Assessment Data Collection and Analysis Cycle 2012 - 2015

	Program	2012 Program Analysis Status Based on Data from 2009-2012[1]	2012-2013[2]	2013-2014	2014-2015	Schedule Date for Next Cyclical Analysis
	Chemistry	Complete	Complete	Pending	Pending	Summer Retreat 2015
E	Aquatics & Fisheries	April 18, 2015	None	None	Pending	Fall 2018
F	Biotechnology	April 18, 2015	None	None	Pending	Fall 2018
F	Conservation Biology	April 18, 2015	None	None	Pending	Fall 2018
B	Env. Biology	April 18, 2015	None	None	Pending	Fall 2018
B	Forest Health	April 18, 2015	None	None	Pending	Fall 2018
B	Nat. History & Interp.	April 18, 2015	None	None	Pending	Fall 2018
B	Wildlife Science	April 18, 2015	None	None	Pending	Fall 2018
	Env. Science	Complete	Complete	Complete	Pending	September 2015
	Env. Resources Eng.	Complete	Complete	Complete	Pending	September 2015
	Env. Studies	Complete	Complete	Complete	Partial (Fall 14 only)	September 2015
F	For. Ecosystem Science	None	Complete	Complete	Pending	2016-17[3]
N	Forest Resources Mgt.	None	Complete	Complete	Pending	2017-18
R	Nat. Resources Mgt.	Complete	Complete	Complete	Pending	2018-19
M	Sust. Energy Mgt.	New Program	New Program	New Program	Pending	2015-2016
	Landscape Architecture	Complete	Complete	Complete	Partial (Fall 14 only)	May 2015
P	Bioprocess Eng.	Complete	Complete	Complete	Pending	Summer 2015
B	Paper Engineering	Complete	Complete	Complete	Pending	Summer 2015
E	Paper Science	Complete	Complete	Complete	Pending	Summer 2015
	Construction Mgt.	Complete	Complete	Complete	Pending	May 11-15/15 and September 21-25, 2015

[1] Supporting documentation is located in Appendix B-Academic Program Assessment
[2] Supporting documentation is located in Appendix C-Academic Program Assessment
[3] Assessment of FNRM programs are organized to coordinate with Society of American Foresters' program accreditation.

Actions taken as a result of assessment data analysis in the last cycle (2009 - 2012) are shown in the table in Academic Program Assessment Appendix D. Actions include a wide range of curricular adjustments from the development of better assignments to assess program learning outcomes to shifts in courses to use for assessment and changes needed in the assessment measures themselves. Many of the targets were met and required no action at the time of the 2012 analysis.

Analysis of Academic Program Assessment at ESF

As indicated in previous reports, ESF has an established set of policies and procedures for assessment of academic programs that has been in place and engaged for the past several years. The primary concern regarding academic program assessment leading to the request for this Monitoring Report was stimulated by the inadvertent inclusion of data reports rather than the more appropriate analysis reports in the last Progress Report. We use the same reporting format for data collection and analysis: a four column report that shows program learning outcomes, measures, results and actions. However, analysis is conducted

only every third year, therefore the reports in the years between include only results, not actions, thus leaving the final column blank. The last cycle of assessment data analysis was completed in December 2012. The next analysis that will lead to actions for program improvement is due in December 2015.

While we continue to strive to have every faculty member committed to and fully engaged with assessment, we have not yet achieved this. For instance, the experience of the Environmental and Forest Biology faculty attempting an assessment plan that was too ambitious resulted in a lapse in data collection and some faculty members who were frustrated by the failure. Finding an appropriate balance between feasibility and meaningful assessment is essential and some programs are still working to find that balance. The December 2012 analysis led many programs to adjust their assessment plans as they gained experience and insight into the process and its value.

At an institutional level, a change in the Provost's Office assessment leadership resulted in a lapse of adequate support to keep all programs up to date with data collection and entry into the TracDat system. This has been rectified with the appointment of an Associate Provost for Assessment and a permanent professional part-time position to assist academic program faculty with assessment. These appointments have proven to be critical in supporting faculty to maintain assessment efforts. Most programs stand on their own well with assessment and have embraced the process having realized the value of meaningful assessment efforts.

The production of this Monitoring Report provided the opportunity to review the current reporting formats in TracDat as supporting documentation was pulled. As a result, several improvements to the reports will be made to provide clearer evidence of the established assessment process at ESF. For example, we will develop a separate data collection and results report instead of using the same 4-column format used to report actions following analysis of multi-year data. Several other adjustments to the system have been identified to make more efficient the upload of data each semester.

Finally, we will resume periodic meetings of Program Assessment Coordinators. This group used to meet each semester but these meetings were not continued after 2012. Resuming these meetings will help to improve assessment practices at ESF by sharing of ideas and approaches as well as identifying ways to improve the data collection and reporting system.

Conclusions

Institutional Assessment (Standard 7)

ESF has long collected data to monitor progress toward defined institutional goals. The College and its units have annually set goals based on institutional objectives and progress toward targets. Data collection and annual goal-setting are well-documented in the Cabinet Retreat reports and the academic department Annual Reports. However, traditionally the College has not generated substantial documentation demonstrating the analysis that connects data collection with subsequent planning. Such analyses have largely been verbal and/or mental exercises with only the result committed to paper. In 2012 the College purchased TracDat software as a tool to aid in documenting the connection between assessment and planning. TracDat has been successful in helping units to demonstrate how assessment is used in their planning, however it has not been utilized at the institutional level.

A strategic planning process that began in mid-2014 following the installation Dr. Quentin Wheeler as ESF's fourth President has temporarily diminished institutional effectiveness assessment efforts. Most of the institutional planning energy has been devoted to developing a new set of institutional goals. The new strategic plan is expected to be completed for the beginning of the 2015-2016 academic year. At that point, implementation plans will be developed. These will include plans for assessing progress at both the institutional and unit levels using the framework that is already in place.

General Education (Standard 12)

Because of ESF's past as an upper division institution and then as an institution that relied heavily on neighboring Syracuse University to provide the bulk of its General Education coursework, General Education has not been a major focus for the College. General Education has been seen as providing foundational skills necessary for success in the major programs and providing non-specific intellectual breadth. General Education student learning outcomes were, therefore, subsumed within the major program outcomes or aimed at conforming to SUNY General Education outcome requirements (see 2014 Monitoring Report).

With Dr. McKitrick's visit in September 2014, it became clear that articulation and assessment of ESF's General Education learning outcomes could be improved, with potential enhancement of educational quality. Therefore, in fall 2014 ESF initiated a complete overhaul of its General Education assessment. First a standing faculty committee was given responsibility for oversight of General Education assessment (Committee on Instructional Quality and Standards – IQAS). That body crafted a revised set of General Education learning outcomes and rubrics for assessing achievement of the outcomes.

These were shared with the full faculty. In late fall, the rubrics were applied to student work derived from senior capstone projects and General Education courses, the results of which were examined and discussed by the IQAS Committee and others. In this first College-wide examination, about 35% of the newly articulated General Education outcomes were observed to be satisfactorily achieved. About 10% were not. For the remainder (55%) additional and more refined assessment is needed. Indeed, much of the committee's report focuses on ways to increase the effectiveness and efficiency of General Education assessment. Their recommendations will be the subject of a College-wide faculty meeting in spring, 2015.

The General Educational assessment process instituted since Dr. McKitrick's visit has fulfilled the intended 2014-2015 objectives, except for the issuance of final recommendations which will be forthcoming later in spring 2015 after a discussion with the full faculty. Beyond 2014-2015, the assessment plan calls for annual data collection with in-depth analysis every third year. Further, recommendations issued in spring 2015 will be acted upon in the 2015-2016 academic year.

Student Learning Assessment (Standard 14)

Assessment of student learning at the programmatic level is an ongoing activity. Data is collected annually and generally analyzed every third year. The last analysis occurred at the end of 2012. The next one is scheduled for the end of 2015.

Student learning assessment activities have been recorded in TracDat since 2012. Program learning outcomes, assessment plans, data collection and analysis, as well as program responses to assessment results are documented. Inspection of the TracDat reports reveals that for the most part students are achieving the articulated program learning outcomes. However, several programs have identified outcome targets that are not being fully met and have taken actions to improve teaching and learning so that targets are achieved. Good examples of the latter can be seen in Chemistry, Environmental Science and Construction Management programs. The TracDat reports also show that assessment practices continue to evolve to increase effectiveness and efficiency.

While assessment of student learning is largely operating as it should, we have found that many programs still require institutional support to remain on-task and effective. Therefore, in the past year a permanent staff member has been assigned to assist programs in documenting their assessment work. In addition, the Associate Provost for Assessment monitors assessment efforts and provides guidance on best practices.

Institutional Assessment
Appendix B
Administrative Unit Assessment Plans

Unit Assessment Report - Four Column

SUNY - College of Environmental Science and Forestry

All Administration

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Admin (PRES) - Alumni Relations - Financial Strength 12-13 - Maintain financial strength via a dues solicitation to provide programming and services. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Completed	**Measurement Scale:** Dues income will be monitored monthly and compared to previous year. **Target:** $72,000 raised in dues and life memberships plus special promotion program.	09/10/2013 - $62,000 raised in dues and life memberships plus special promotion program. **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2012 - 2013	
Admin (PRES) - Alumni Relations - Events and Programs 12-13 - Conduct various events and programs to involve alumni, students, parents and friends of the College. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Completed	**Measurement Scale:** The number of events and attendees will be monitored as they occur. **Target:** 21 events are planned with 2,600 to 2,800 participants.	09/10/2013 - 22 events hosted with 2,600 participants **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
Admin (PRES) - Alumni Relations - Legacy and Memorial Scholarships 12-13 - Offer Legacy and Memorial Scholarships to worthy and needy students. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Completed	**Measurement Scale:** The number of Legacy scholars will be reviewed after the start of classes and adjustments made for incoming students in ?13-?14 along with increasing Memorial Scholarships in ?12-?13 **Target:** A total of $15,000 will be offered in total for the year.	09/10/2013 - Offered a total of $14,000 scholarships. **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2012 - 2013	
Admin (PRES) - Alumni Relations - College Bookstore 12-13 - Maintain a college bookstore to provide quality logo items and provide additional funds to support alumni programs.	**Measurement Scale:** Monthly sales will be reviewed and compared with the previous year?s sales. **Target:** The goal for 2012-2013 is a gross sales total of $170,000.	09/10/2013 - 2012-2013 total gross sales: $161,500 **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2012 - 2013	

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Outcome Year(s): 2012 - 2013 **Outcome Status:** Completed			
Admin (PRES) - Development - Fund Raising 12-13 - To annually fundraise cash contributions to ESF College Foundations to allow budgeted funding for scholarships, academic program support and endowment growth **Outcome Year(s):** 2012 - 2013 **Start Date:** 07/01/2011 **Outcome Status:** Completed	**Measurement Scale:** Total fiscal year cash contributions (7/1/12-6/30/13) **Assessment Method:** Data Generated by Unit **Target:** $2.2 Million	09/03/2013 - $3.5 million **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	09/03/2013 - Execute annual program of donor solicitation and campaign management to achieve modest growth in cash contributions.
Admin (PRES) - Development - Unrestricted Giving 12-13 - To increase unrestricted giving as portion of annual fundraising to support unrestricted recruitment scholarships **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Completed	**Measurement Scale:** Total fiscal year unrestricted contributions to annual fundraising program (7/1/12-6/30/13) **Target:** $370,000	09/03/2013 - $344,681 **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2012 - 2013	09/03/2013 - Data analysis of giving levels to identify "soft spots". Evaluate contact rates for phone, mail and electronic communication.
	Measurement Scale: Total fiscal year unrestricted contributions to annual fundraising program (7/1/12-6/30/13) **Target:** $370,000		
Admin (PRES) - Development - Alumni Participation 12-13 - Strive to continually maintain or increase the number of alumni who participate in giving to the College to positively impact rankings **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Completed	**Measurement Scale:** Percentage of living, reachable alumni making contributions or paying dues to ESF College Foundation, Alumni Associations or SPPF. **Target:** 28%	09/03/2013 - 26.5% **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2012 - 2013	09/03/2013 - Increasing number of annual fund calls to "never donors'> Reexamine number of "reachable" alumni for accuracy.

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
13 - To provide leadership in the College's strategic planning process. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Completed **Unit Goal Met? :** 3 - Met expectations	service opportunities **Target:** Secure one shared service opportunity with New York Six and LeMoyne	Adirondack Semester Initiated meetings with LeMoyne for shared services, joint programs and enrollment opportunites. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	07/29/2013 - Continue to work with LeMoyne to bring projects along in 2013-14. Reevaluate opportunites for New York Six joint projects. Meet with Director in Fall 2013.
	Measurement Scale: President?s satisfaction **Target:** Quality report submitted by April 1, 2013 and accepted by Middle States	07/29/2013 - The President is satisfied with my participation in reviewing the Middle States report. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
Admin (PRES) - Governmental Relations and Institutional Planning - Information 12-13 - To provide reliable, timely and valid date and information **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Completed	**Measurement Scale:** Knowledge of systems and SUNY plans **Target:** Attend training and SUNY meetings to help inform campus	07/31/2013 - Attended SUNY AIRPO annual meeting. Attended two day OBIEE Analysis Training. Atteneded SUNY government relations meetings in Albany **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: Survey completion times **Target:** Increase surveys completed on time to 95%	07/31/2013 - Completion times were at the 80% range **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2012 - 2013	09/16/2013 - Surveys that required financial aid data were 100% completed on time. Meet regularly with Computing, Admissions and Graduate Office to ensure meeting goal of 95%
Admin (PRES) - Governmental Relations and Institutional Planning - Liaison Role 12-13 - To serve as liaison to elected officials, state and federal agencies and their staffs.	**Measurement Scale:** Engagement by USPS with ESF **Target:** Have MOU signed	07/31/2013 - Many other examples including Enviromental Protection Bureau's roundtable discussion on June 26th by Office of the Attorney General, work with NYSDEC for their retreat and	07/31/2013 - Continue to work with these agencies and governor's office.

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Compliancy 2013-14 - To help ensure the College is compliant with federal and state lobbying laws and policies **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Faculty and staff awareness of lobby laws **Target:** Receive 1600 hits, HR to include lobbing rules in new employee orientation material		
Admin (PRES) - Renewable Energy Systems - On-Campus Leadership/Guidance 12-13 - Provide guidance and leadership to initiate and implement energy efficiency and renewable energy demonstration projects on campus **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Completed	**Measurement Scale:** Funding for renewable energy demonstration projects. **Target:** Obtain at least $250,000 in funding	01/09/2014 - Obtained $295,000 in funding for energy demonstration projects. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: ESF climate action plan (ECN 2015) progress. **Target:** Submit GHG report in January 2013.	01/09/2014 - Filed report in January 2013. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
Admin (PRES) - Renewable Energy Systems - Academic Offerings 12-13 - Teach courses in renewable energy and energy markets to maintain and enhance academic offerings with an energy focus **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Completed	**Measurement Scale:** ESF energy program offerings **Target:** Implement new BS program in Sustainable Energy Management with 10 new students in 2012-13.	01/09/2014 - Implemented new SEM major, and supported High Needs request for funding. Approximately 25 students enrolled in new SEM major. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
Admin (PRES) - Renewable Energy Systems - Information 12-13 - Disseminate information on campus sustainability **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Completed	**Measurement Scale:** Communication and awareness of ESF Sustainability. **Target:** Achieve STARS Gold rating in 2014. Recruit 6-8 Eco-reps	01/09/2014 - Progress being made on STARS gold rating, reported by responsible parties at Cabinet Offsite meeting in August 2013. Initiated successful Eco-Reps program with 6 members. Made over 12 presentations and sustainability tours. **Target Met:** Evaluation - Met Target	

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Admin (VPAA) - Instruction and Graduate Studies - Graduate Studies 12-13 - Assure effective graduate recruitment, admission, retention, and certification of degrees. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Maintain Healthy Total Graduate Enrollment (measure & report biannually) **Target:** 535	09/18/2013 - 512 **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2012 - 2013	06/01/2014 - Graduate enrollment has decreased over the past 2 semesters. Departments are being encouraged to accept greater numbers of PhD and MPS or other self-funded graduate students. The graduate school has recently purchased a new suite of recruitment and application software tools which we hope will broadly facilitate the recruitment of a larger cohort by spring 2015.
	Measurement Scale: Recruit & Enroll New Graduate Cohort (measure & report status weekly to Cabinet) **Target:** 650 + 80 Applications (fall + spring) 135 + 30 New Enrolled (fall + spring) > 30 PhD New Enrolled	09/18/2013 - 590 + 85 Applications (fall 2013 + spring 2013) 127 + 23 New Enrolled (fall 2013 + spring 2013) 20 new PhD New Enrolled (fall 2013 + spring 2013) **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: Maintain Graduate Attrition and Graduation Rates comparable with peer STEM centered universities (peer benchmarks provided by CGS) **Target:** 75% 5 year Masters completion rate 52% 7 year PhD Completion Rate 59% 9 year PhD completion rate	09/18/2013 - 86% 5 year Master's completion rate; 57% 7 year PhD completion rate; 63% 9 year PhD completion rate **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: Graduate sufficient PhD?s annually (to meet threshold for current Carnegie Classification) **Target:** 20	09/18/2013 - 21 **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	06/01/2014 - Continuing to monitor PhD graduation metrics; we have developed a means for administratively balancing end-of-year graduation recording to assist in smoothing out periodic peaks and

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
			valleys.
Admin (VPAA) - Office of Research Programs - Proposals 12-13 - Provide the technical capacity and expertise to submit an increasing number and diversity of successful, competitive proposals by the majority of faculty in support of high-quality research. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Quantify number of actual contacts with potential PIs. **Target:** 10-15 contacts	11/19/2013 - Increased proposals by 5%. More than 50 direct contacts with PI's from ORP; 65 faculty at four institutions in Hill Collaboration. Big turnout for presentations at Biotechnology Conference. Nine SUNY proposals for collaborative grants. Three new Institutes initiated (NFI, Trinity, UFI@ESF). **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	11/19/2013 - Expand Hill Collaboration to include infectious diseases. Stimulate two new institutes for formal approval. Connect with SUNY and RF to increase funding and collaboration. Formalize ESF/OEI. Seek NYSTAR and NYSERDA match for MRI (e-scope). Highlight selected Centers and Institutes, publications and grants (e.g., AEC).
	Measurement Scale: Number of Warrior research projects proposed. Number of VA-funded projects. **Target:** Document Warrior research progress and proposal submissions. Determine faculty specifically for Warrior Research (VA).	11/19/2013 - Warrior Project underway. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	02/27/2014 - Warrior less pursued than intended, but support of Infectious Diseases initiative assists VA and UMU.
Admin (VPAA) - Office of Research Programs - Coordinate Records 12-13 - Maintain and analyze essential records in coordination with the Research Foundation of SUNY and the Operations Manager of ESF: Matching commitments, reporting and close-out, USDA Current Research Administration System (CRIS), McIntire-Stennis Research Program, grant/contract authorization, compliance and status of at-risk accounts. **Outcome Year(s):** 2012 - 2013	**Measurement Scale:** COEUS module completion. **Assessment Method:** Data Generated by Unit **Target:** Eight ORP personnel completing modules.	11/19/2013 - COEUS implementation delayed. E-certification begun. Time/Attendance begun. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	02/27/2014 - Continue E-Certification ramp-up.
	Measurement Scale: Completion of checklist, particularly with regard to budget guidelines. **Target:** 85% completion of budget checklist by faculty.	02/27/2014 - Approximately 40% completion **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2012 - 2013	02/27/2014 - Revise and reassess checklist and means of communication

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
	Measurement Scale: Results of ongoing and annual self-assessment, planning and reporting processes: [Implementation of ongoing quality assurance and improvement] **Target:** Strengthen all aspects of unit-and program/project-level self-assessment, planning and reporting processes.	06/17/2013 - Outreach has commited to the consolidation of its self-assessment reports with other internal and external planning and reporting processes. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	07/11/2013 - Launch a strengthened outreach self-assessment and planning process. Revisit and align all annual unit- and program-specific data collection and reporting procedures.
Admin (VPAA) - Outreach - Educational Programs 12-13 - Meet the needs of our learners through quality educational programs. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Overall degree of learner satisfaction, including degree of satisfaction for individual programs and courses offered. [End of course/program survey statistics (frequencies, means & illustrative anecdotal data).] **Target:** 90% reporting Positive (or higher) satisfaction.	06/17/2013 - All courses in the SUNY certificate have been approved. 96.4% of ESF SCIENCE participants that responded reported that they would recommend the program to a friend. 80.6% of ESF in the High School participants that responded reported that they would recommend the program to a friend. 99% of participants in 8 PE programs charactreized the experience as positive or very positive (49% very positive). The mean program score was 4.4/5, representing a positive experience **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2012 - 2013	07/03/2013 - Register SUNY Certificate in Environmental Science. Strengthen Summer Session programming and student engagement, including increasing the number of online courses (from 11 to 13) 06/17/2013 - We are satisfied with ESF SCIENCE results. The ESF in the High School data were brought down by an on-campus calculus class, which will be online with improved mentoring during 2013-2014.
	Measurement Scale: Number and percentage of programs that, at a minimum, ?break even? financially, including all direct and indirect costs. [Analysis of project/program budget reconciliations	06/17/2013 - All programs broke even financially. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	07/03/2013 - Create cost-efficient budgets and budget models that are, at a minimum, "break even".

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
	Target: 100%		
	Measurement Scale: Total headcount participation in ESF Outreach credit courses and non-credit programs. [Compilation of appropriate data from ESF Computing and other reports] **Target:** 2,400	06/17/2013 - Total headcount in Outreach credit and non-credit courses: 4,564 ESF in the High School (only): 580 Participants in credit courses: 320 Participants in non-credit programs: 3,664 **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
Admin (VPAA) - Student Affairs Academic Support Services - Recognition of Academic Strengths/Limitations 12-13 - To assist students in developing self understand and acceptance by providing opportunities to recognized their own academic strengths and limitations **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Completed	**Measurement Scale:** Positive/negative influence these programs had on their overall academic success. **Target:** Tutoring surveys 40% response rate, Retreat surveys 50% response rate, SEEDS program results, 40% increased GPAs from previous semester.	01/24/2014 - Tutoring surveys 43% response rate; retreat surveys 17% response rate, SEEDS program results - 80% increased GPAs from previous semester. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	01/24/2014 - Response rate for first-year survey fell short so we will make efforts to increase the response rate.
	Measurement Scale: Satisfaction with performance of these programs. **Target:** Tutoring surveys 40% response rate, Retreat surveys 50% response rate, SEEDS program results, 40% increased GPAs from previous semester.		
	Measurement Scale: Being able to recognize their own growth during participation in program.		
Admin (VPAA) - Student Affairs Academic Support Services - Decision-Making Skills 12-13 - To assist students with proper	**Measurement Scale:** Effect programs had on assisting students reach desired academic achievement.	01/24/2014 - Tutoring surveys 43% response rate; retreat surveys 17% response rate, SEEDS program results - 80% increased GPAs from	01/24/2014 - Continue SEEDS program

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Admin (VPAA) - Student Affairs Career Services - Effective Citizenship 12-13 - Demonstrate effective citizenship by fostering an inclusive campus community. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Survey **Target:**		
	Measurement Scale: Active outreach for feedback		
	Measurement Scale: Student and employer program evaluations **Target:** Present at 80% of accepted student receptions and transfer day programs, Maintain active memberships in professional organizations and provide supporting resource materials to students, Look to host at least one HED intern per year.		
	Measurement Scale: Participation in college-wide assessments **Target:** Monitor Results of college wide assessment as it relates to career services function.	01/24/2014 - Achieved. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: Document analysis		
	Measurement Scale: Faculty interviews **Target:** Continue to support 100% of faculty requests.		
Admin (VPAA) - Student Affairs Career Services - Technology 12-13 - Capitalize on technology as a tool and resource in communicating and delivering services. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** GreenLink activity statistics **Target:** Post 100% of jobs and internships shared with the office on GreenLink	01/24/2014 - Achieved. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: Student and employer program evaluations **Target:**	01/24/2014 - Achieved. **Target Met:** Evaluation - Met Target	

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Admin (VPAA) - Student Affairs Community Service and Service-Learning - Community Restitution 12-13 - Assist with community restitution experiences that allow students opportunities to reflect upon the consequences of their decisions and the impact of their involvement on the College and local communities. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Track community restitution hours and service project information. **Target:** Continue to connect students with community organizations. Reduce the number of repeat student conduct cases.		
Admin (VPAA) - Student Affairs Community Service and Service-Learning - ESF Community Impact 12-13 - Track and recognize ESF?s impacts on the community through awards, reports, and public engagement. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Document service-learning course information, including project descriptions and the number of hours dedicated to the community. **Target:** Maintain or increase number and quality of service-learning courses. Continue to collect course information.		
Admin (VPAA) - Student Affairs Community Service and Service-Learning - Service-Learning Planning 12-13 - Assist faculty with service-learning course planning and integration that engages students in critical thinking through reflection **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Continued placement on the President?s Honor Roll. **Target:** Maintain or increase ESF?s level of involvement in the community.		
	Measurement Scale: Continue to recognize exemplary faculty, staff and student service to the community. **Target:** Earn ESF?s placement on the President?s Honor Roll, including a ?with distinction? notation.		

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Admin (VPAA) - Student Affairs Multicultural Affairs - Underrepresented Population Growth 12-13 - A growing population of underrepresented students who are supported in their goal to obtain a degree at SUNY-ESF. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Data analysis of enrollment of underrepresented students, Number students in CSTEP. Number dismissed, on probation, graduated. Year-end evaluations. **Target:** %9 American ethnic minorities enrolled and retained at ESF. 50+ CSTEP scholars enrolled in program with 90%+ involved.		
Admin (VPAA) - Student Affairs Multicultural Affairs - Inclusive Campus 12-13 - An inclusive, welcoming campus environment for all. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Survey Monkey. Campus diversity climate and diversity attitude indicator **Target:** 50% of the campus community surveyed demonstrate growth in this area.		
Admin (VPAA) - Student Affairs Multicultural Affairs - Multicultural Resource Awareness 12-13 - Awareness of multicultural resources and activities at both ESF and SU campuses. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Tract visitor usage, Increase in number of ?hits? of online resource pages. Paper evaluations **Target:** 10% increase in visitation to the Resource Center. %5 increase in usage.		
Admin (VPAA) - Student Affairs Multicultural Affairs - Multiculturalism in 21st Century 12-13 - A university community that is able to articulate the concept of multiculturalism in the 21st century.	**Measurement Scale:** Same Survey Monkey. Campus diversity climate and attitude survey as listed above. **Target:**		

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Outcome Year(s): 2012 - 2013 **Outcome Status:** Active	50% of the campus community surveyed demonstrate growth in this area.		
Admin (VPAA) - Student Affairs Student Involvement & Leadership - Involvement Opportunities 12-13 - Provide inclusive social, cultural, and educational opportunities for all students on campus through a variety of involvement opportunities, workshops, trainings, educational sessions, student-led programming, and recognition opportunities. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active **Unit Goal Met? :** 3 - Met expectations	**Measurement Scale:** Paper surveys and/or electronic surveys are provided immediately following specific events such as Orientation Leader Training, Mentoring, Leadership workshops, and USA sponsored events.	01/24/2014 - Achieved. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: Informal feedback is given by student leaders on more specific modifications to programs. **Target:** Continue to provide a leadership program to as many students as possible who want to be involved on campus.	01/24/2014 - Achieved. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
Admin (VPAA) - Student Affairs Student Involvement & Leadership - Consulting, Advising, and Leadership 12-13 - Provide consulting, advising, and leadership opportunities for student association, student organizations, faculty and staff advisors, and other students and colleagues of ESF. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Between one-on-one advising meetings, roundtable discussions with students and advisors, as well as attending general events, there is opportunity to assess and advise their program development. Encouragement of assessment after programs is also done. **Target:** Student leaders will be better informed of how to run a successful student organization so questions will be reduced in the Student Involvement and Leadership Office.	01/24/2014 - Achieved. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: The LEAD Series is also a good indication of how the student organizations have done throughout the year in addition to how well they planned their budget (through Finance Board).		

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
		Reporting Period: 2012 - 2013	
Admin (VPADM) - Business Affairs - Campus Improvement 12-13 - Continually pursue improvement opportunities. For campus - evaluate opportunities to implement more efficient ways for departments to handle any administrative / business activities that they perform (examples: on-line Time & Attendance, automated timesheets, e-requisitioning). **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Completed	**Measurement Scale:** RF P-card : assessment of issues and recommendation whether to proceed or not. **Target:** By 3/29/2013	06/30/2013 - A program to pilot an RF p-card was delayed until 2013-14. **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: BO and HR pilot for online UUP and MC timekeeping completed. **Target:** By 10/31/2012	02/25/2014 - Completed pilot or an online timekeeping system for UUP and MC staff in the Business Office and HR. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: Roll out online timekeeping to campus for MC & UUP staff. **Target:** By 6/30/2013	04/30/2013 - Training conducted for all UUP and MC staff by 3/31/2013 and online timekeeping implemented in April 2013. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: Excel based time-sheet for RF staff **Target:** By 9/30/2012		
	Measurement Scale: E-Requisitioning: evaluation of issues and recommended next steps **Target:** By 3/31/2013	06/30/2013 - This project was delayed until 2013-14 due to staffing issues in the BO during 2012-13. **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2012 - 2013	
Admin (VPADM) - Business Affairs - Student Improvement 12-13 - Continually	**Measurement Scale:** Web payments of Tuition and fees	06/30/2014 - $3,800,000 **Target Met:**	

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Admin (VPADM) - Environmental Health and Safety - Regulatory Requirements 12-13 - Meet the regulatory requirements of applicable agencies **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Level of established compliance with programs. **Target:** Full compliance with most programs and at least partial compliance with all.	01/14/2014 - Full compliance with most programs and at least partial compliance with all. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	01/14/2014 - Continue with self-audit of environmental and safety compliance, including programs and actions historically reviewed by regulatory agencies visiting ESF. These include the NYS DEC, the 2003 EPA audit, the State Office of Fire Prevention and Control, and the NYS DOL Public Safety and Health Division.
	Measurement Scale: Correction of problems identified during agency inspections **Target:** Full correction of all identified problems	01/14/2014 - Full correction of all identified problems **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	01/14/2014 - Respond to inspections performed by the NYS DEC and the NYS DOL on environmental and safety issues.
	Measurement Scale: Finalization of engineered approved plans **Target:** All needed SPCC plans completed as required	01/14/2014 - All needed SPCC plans completed as required **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: Matching student records to training records **Target:** All affected employees, including graduate students recorded as having received required training.	01/14/2014 - All affected employees, including graduate students recorded as having received required training. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	01/14/2014 - Maintain a method of identifying and providing required safety training to all incoming grad students prior to their starting work in laboratories.
	Measurement Scale: Written reports **Target:** Ten vertical hoists inspected.	01/14/2014 - Ten vertical hoists inspected. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	01/14/2014 - Maintain annual inspection program for overhead hoists that exist in Walters Hall and Baker Lab

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
		program established by Dr. Bevilacqua. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
Admin (VPADM) - Forest Properties - Roles 12-13 - Get the right people in the right roles **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Completed **Unit Goal Met? :** 4 - Exceeded expectations	**Measurement Scale:** Number of vacant positions filled **Assessment Method:** Data Generated by Unit **Target:** 1	03/11/2013 - Back-filled former Forest General Maintenance Supervisor with new title (Park Worker 3) obtained from Civil Service. Promoted Laborer to additional Park Worker 3. Promoted Forest Tech to vacant Forest Manager position. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: % of department staff with ?Personal Development Plans? **Assessment Method:** Data Generated by Unit **Target:** 100% of department staff have ?Personal Development Plans? in place.		
Admin (VPADM) - Forest Properties - Financial Sustainability 12-13 - Achieve financial sustainability **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active **Unit Goal Met? :** 3 - Met expectations	**Measurement Scale:** Annual % growth in IFR revenues **Assessment Method:** Institutional Data Generated at ESF **Target:** 6%	07/01/2013 - Acheived 167% increase in annual IFR revenues (due largely to blow-down salvage at Lodo Pond in Newcomb as well as two research cutting treatments at Huntington and Pack Forests). **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
		06/28/2013 - Achieved 167% increase over FY 11-12 due to blow-down salvage and research cuttings. Following years will target average 6% growth. **Target Met:** Evaluation - Met Target	

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Admin (VPADM) - Human Resources - Retain Faculty and Staff 12-13 - Retain excellent faculty and staff **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Completed	**Measurement Scale:** Review benefits reports and processes annually **Target:** Recommend additional reports and processes based on any issues	07/09/2013 - Benefits reports reviewed annually. Obtained new reports available through SUNY-HR system. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: Communicate and/or implement any policy changes in HR area. **Target:** Review directives/recommendations from SUNY Counsel and SUNY Compliance Office for HR area and implement where appropriate. Update employee handbook if applicable. Develop schedule to reinforce certain policies in HR area.	07/09/2013 - New I-9 requirements implemented and communicated. Developed annual schedule to reinforce certain HR policies (withe VP Admin. Office). Reviewing compliance training recommendations from SUNY Compliance Office. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: Review and streamline processes **Target:** Review processes based on internal observations and customer feedback	07/09/2013 - Four processes updated/streamlined: 1) Appointment and other letters (assisted by President's Office) 2) Volunteer Process and Forms 3) Extra Service/Also Receives Process and Forms 4) Summer Session Process and Letters **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: Keep informed of new developments, trends, and best practices in HR within and outside SUNY **Target:** Participation in SUNY-HR Association, committees, and governance; and at least one outside conference	07/09/2013 - M. Barber served as SUNY-HRA President, T. Blehar and B. Gracz served on SUNY-HRA committees; T. Blehar attended two outside conferences, B. Gracz attended one outside professional development session; B. Gracz maintained membership in SHRM. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Admin (VPADM) - Information Technology - New Technological Trends 12-13 - Monitors new trends in the information and instructional technology fields and develops and implements new technologies that are tailored to meet ESF?s needs and goals. ESF IT promotes ?Green IT? whenever possible in our practice. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Select a few individual admin staff to test; Address special application requirement. **Target:** 10 ? 15 desktop PCs to be replaced with the VDI terminals.		
Admin (VPADM) - Information Technology - Consultation and Advice 12-13 - Promotes and facilitates research computing efforts via providing system-level consultation and technical advice to ESF research community. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Explore potential of the HPCC and recruit more researchers to utilize the system. **Target:** Expand to multiple depts. and have more active users in the system.		
Admin (VPADM) - Information Technology - Compliance with IT Standards 12-13 -	**Measurement Scale:** Address problem areas through the		

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Unit Goal Met? : 3 - Met expectations	**Target:** 90% or higher		
Admin (VPADM) - Physical Plant - Business Integrity 12-13 - As stewards of the College?s resources, we will conduct our business with integrity to achieve the highest possible effectiveness and cost-efficiency. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Completed **Unit Goal Met? :** 4 - Exceeded expectations	**Measurement Scale:** Establish bi-annual review of contracts **Target:** 90% satisfaction w/vendors	01/09/2014 - Contracts reviewed in detail in advance of execution. Bi annual review may not be appropreiate. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: Track purchases using procurement card **Target:** Increase annual usage by 5%	01/09/2014 - Use of procurement card greatly increased, cards have been issued to additional staff. All procurements of $100.00 or less are required to be made with the cards. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: Maintain minimum staffing levels **Target:** 65% per day	01/09/2014 - target meet how ever minuium staffing level needs futher review. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
Admin (VPADM) - Physical Plant - Environmental Excellence 12-13 - We are committed to environmental excellence. All facets of our operation and management as well as the outcome of our work will be exemplary in terms of energy efficiency and sustainability. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Completed **Unit Goal Met? :** 3 - Met expectations	**Measurement Scale:** Installation of campus building electric sub-metering **Target:** 100% complete by 6/30/13	01/09/2014 - Issues relating to the startup of the Gateway building consumed considerable staff time. Sub metering will be installed this year as required by EO 88. **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: Address consumption & energy issues on a continuous basis **Target:** Decrease campus wide usage by 5% per sq	01/09/2014 - The Jahn fume hood controls project resulted in considerable reduction in energy usage although without sub metering that number is difficult to determine. **Target Met:**	

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Admin (VPADM) - University Police - Educational Training 12-13 - Participate in the educational process by offering training to student groups in various law enforcement themed subject matter such as Rape Aggression Defense, Drug Awareness and Crime Prevention. **Outcome Year(s):** 2012 - 2013 **Start Date:** 07/01/2012 **Inactive Date:** 06/28/2013 **Outcome Status:** Completed **Unit Goal Met? :** 3 - Met expectations	**Measurement Scale:** Evaluation of course content and presenters by participants. **Target:** Engage Student group. Identify and certify additional officers to become instructors.	02/20/2013 - Course Evaluations indicate an eighty percentile lean toward excellent rating. Across the board comment being that the instructors are engaging, content is valuable, desire exists to shorten session time and extend course to semester length. Interest also exists to offer an advanced class for those that have completed the introductory offering. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	01/15/2014 - Investigate the possibility of hosting an Advanced RAD Course in order to certify existing instructors in its instruction to address an evaluation desire of additional knowledge.
	Measurement Scale: Methods of communicating course offerings. **Assessment Method:** Data Generated by Unit **Target:** Engage Student group. Develop and enhance personal safety options for campus community.	02/20/2013 - Electronic polling of students to determine optimum offering period based on individual availability tends to ensure an engaged client base. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: Venue of offerings. **Target:** Engage Student group. Develop and enhance personal safety options for campus community. Identify on-campus facilities best suited for delivery of course materials.	02/20/2013 - Main campus offerings remain best venue for delivery of course content in respect to class size. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
Admin (VPADM) - University Police - Security Assessments 12-13 - Conduct security assessments of various practices and concerns currently in use, as well as proposed future projects.	**Measurement Scale:** Assess system capabilities measured against user group needs. **Assessment Method:** Data Generated by Unit **Target:**	05/29/2013 - Galaxy Security Access System fully functional with limitations due to continued use of non-proprietary card readers over 75% of the system. System speed and ease of use greatly increased via IP solution.	07/23/2013 - Fully develop and implement Galaxy Security Access System. Participate in the development of a

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
through delivery of mandated standards in policing by constant review and revision of Standard Operating Procedures. **Outcome Year(s):** 2012 - 2013 **Start Date:** 07/02/2012 **Inactive Date:** 07/01/2013 **Outcome Status:** Completed **Unit Goal Met? :** 3 - Met expectations	acceptable Standards in policing as defined by the NYS Department of Criminal Justice Services. **Target:** Review and compliance with best practice standards.		
Admin (VPEMM) - Athletics - Student-Athlete Opportunities 12-13 - Provide opportunities for student-athletes to develop teamwork and leadership skills, along with physical fitness, recreation, sportsmanship, self-awareness and community involvement. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Number of student-athletes participating in intercollegiate athletics (including Timber Sports). **Target:** 2012-13 = 175 student-athletes	09/03/2013 - 208 **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	09/03/2013 - Maintain or increase in 2013-14
Admin (VPEMM) - Athletics - School Spirit/Alumni Involvement 12-13 - Offer a program that enhances school spirit and alumni involvement, helps to build institutional pride and identity, and provides social opportunities for spectators. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Number of intercollegiate teams. **Target:** 6 fall teams and 3 winter/ spring.	09/03/2013 - 6 fall teams and 3 winter/spring **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	09/03/2013 - Maintain or increase in 2013-14
	Measurement Scale: Number of athletic events scheduled. **Target:** 65+ athletic events.	09/03/2013 - 81 athletic events **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	09/03/2013 - Maintain or increase in 2013-14
Admin (VPEMM) - Athletics - Media Coverage 12-13 - Generate media coverage to increase the College's visibility	**Measurement Scale:** Game results published online and in print media.	09/03/2013 - Men's Cross Country won USCAA Championship Women's Cross Country placed 3rd place in the	09/09/2013 - Maintain or increase in 2013-14

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Admin (VPEMM) - Communications - ESF Web and Electronic Media 12-13 - Continually provide new content and enhanced features on the ESF website and on our related social networking sites. Use the web and electronic media effectively as these become ESF's primary modes of communication with external audiences. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Number of unique visitors to ESF website, number of videos on iTunesU and YouTube, number of facebook fans **Target:** 665,000 unique visitors to ESF website, 109,000 downloads and streams to subscribers, 850 audio/video tracks published, 5,000 Facebook Fans	09/12/2013 - 860,000 unique visitors to ESF website; 121,000 downloads; 5,530 Facebook fans; 785 audio/video tracks **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	09/12/2013 - Reorganzie office staffing to provide FTE needed to add a social media specialist in 2013-14 to support growth.
Admin (VPEMM) - Communications - ESF Publications 12-13 - Produce official ESF publications, including the College Catalog, Inside ESF magazine and a variety of recruitment and development publications to provide information to prospective students, alumni, friends of the College and other external audiences. Support the communications needs of academic and administrative departments at ESF. Monitor and enforce the visual identity standards. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Number of college publications produced **Target:** 115 w/o business cards	09/12/2013 - 146 publications produced **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	09/12/2013 - Number is high due to Development Campaign. Target 130 for 2013-14.
Admin (VPEMM) - Communications - Campus Events 12-13 - Coordinate ESF's participation in special on-and off-campus events aimed at increasing the College's visibility and reputation **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Number of events **Target:** 12	09/12/2013 - Coordinated 12 special events **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	09/12/2013 - Maintain or increase

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Admin (VPEMM) - Financial Aid and Scholarships - Accurate and Appropriate Financial Aid Awards 12-13 - Play a key role in ESF's efforts to recruit and retain students by providing accurate and appropriate financial aid and scholarship awards in a timely manner and in compliance with financial aid regulations and policies. Maintain an ongoing capability to amend awards to reflect changes in student eligibility, which may occur after initial aid packaging. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Undergraduate full-time head counts. **Target:** 1,590 full-time undergraduates (fall 2013).	09/12/2013 - Enrolled over 1,650 full-time undergraduates fall 2013 **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	09/12/2013 - Maintain or increase
	Measurement Scale: Enrollment yield on accepted undergraduates offered aid. **Target:** 45% yield on accepted with aid.	09/12/2013 - Achieved 46% yield on accepted undergraduates (first-year 35% and transfers 73%) **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	09/12/2013 - Maintain or increase
Admin (VPEMM) - Financial Aid and Scholarships - Financial Aid Counseling 12-13 - Provide effective financial aid counseling services to prospective and continuing ESF students and their families. Provide consumer information and assist students in applying and qualifying for financial aid and scholarships. Counseling will be provided through mass communication activities (financial aid brochure, website) as well as individual communication (interviews, college nights, telephone counseling, and correspondence). **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Score on SUNY's Student Opinion Survey. **Target:** Score on SUNY's Student Opinion Survey (SOS): Student satisfaction rated 3.50 or higher on 5.0 scale, ESF services rated in top quartile of SUNY campuses.	09/12/2013 - Student satisfaction rated 3.87 and ESF services rated in top tenth of SUNY campuses (2 of 27). **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	09/12/2013 - Same target for next SOS Survey
	Measurement Scale: Score on Admitted Student Questionnaire (ASQ). **Target:** Score on Admitted Student Questionnaire (ASQ) with 90% rating office communications good to excellent.	09/12/2013 - ASQ survey results for freshmen entering fall 2013 will be available October 2013. **Target Met:** No Evaluation - Data Point **Reporting Period:** 2012 - 2013	09/12/2013 - Check survey results when available
Admin (VPEMM) - Financial Aid and Scholarships - Financial Aid Management 12-13 - Manage financial aid and scholarship funds to achieve budgetary targets and net tuition revenue targets.	**Measurement Scale:** Financial Aid budget expenditures **Target:** Budget expenditures within planning range needed to achieve net revenue goals.	09/12/2013 - Scholarship expenditures for 2012-13 were less than budgeted. **Target Met:** Evaluation - Met Target **Reporting Period:**	09/12/2013 - Same target for 2013-14

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Outcome Year(s): 2012 - 2013 **Outcome Status:** Active			
Admin (VPEMM) - Undergraduate Admissions - Strategic Planning Metrics 12-13 - Achieve the College's strategic planning metrics pertaining to undergraduate applications, new student enrollment, selectivity, quality, and diversity. Also meet academic program targets. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Number and quality of applicants and enrolled students. **Target:** 2,600+ undergraduate applications.	09/13/2013 - 2,425 undergraduate applications **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2012 - 2013	09/13/2013 - Revise recruitment plans for 2014
	Measurement Scale: Percent of new undergraduates from underrepresented groups. **Target:** Enroll 12% of new undergraduates from underrepresented groups.	09/13/2013 - Enrolled 12.5% of new undergraduates from underrepresented groups. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	09/13/2013 - Maintain or increase
	Measurement Scale: Number and quality of applicants and enrolled students. **Target:** Enroll 510 new undergraduates (fall 2013)	09/13/2013 - Enrolled 514 new undergraduates **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	09/13/2013 - Maintain or increase
	Measurement Scale: Number and quality of applicants and enrolled students. **Target:** Enroll 96% of freshmen in selectivity level 1 or 2.	09/13/2013 - 90% of freshmen in level 1 or 2 **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2012 - 2013	09/13/2013 - Revise recruitment plans for 2014
Admin (VPEMM) - Undergraduate Admissions - Prospective Student Interest 12-13 - Generate a substantial level of prospective student interest and information requests (inquiries) through direct mail, print, and television advertising, high school and college visitation, and related visibility initiatives. **Outcome Year(s):** 2012 - 2013	**Measurement Scale:** Number of undergraduate admissions information requests. **Target:** Generate 6,500+ undergraduate admissions information requests. (UA216 report)	09/13/2013 - 7,300 information requests **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	09/13/2013 - Maintain or increase

Institutional Assessment
Appendix C
Institutional Goals, Indicators, and Reporting Responsibilities

SUNY-ESF Assessment Matrix

2014.02.28

R = Reporting P = Primary influence S = Secondary influence

Goals	Indicators	GI Nbr	Metrics	President					Administration								Academic Affairs								Enrollment Management and Marketing				
				President	Renewable Energy Systems	Development	Alumni Relations	Government Relations and Institutional Planning	Vice President for Administration	Business Affairs	Environmental Health and Safety	Forest Properties	Human Resources	Information Technology	Physical Plant	University Police	Provost and Vice President for Academic Affairs	Assessment and Academic Initiatives	Instruction and Graduate Studies	Outreach	Research Programs	Student Affairs	Academic Departments	College Libraries	Vice President for Enrollment Management and	Financial Aid and Scholarships	Undergradaute Admissions and Inter-Institutional Relations	Communications	Athletics
				PRES-P	PRES-RES	PRES-D	PRES-AR	PRES-GRIP	ADMIN-VP	ADMIN-BA	ADMIN-EHS	ADMIN-FP	ADMIN-HR	ADMIN-IT	ADMIN-PP	ADMIN-UP	AA-VP	AA-AAI	AA-IGS	AA-O	AA-RP	AA-SA	AA-AD	AA-CL	EMM-VP	EMM-FAS	EMM-UAIR	EMM-C	EMM-A
Leader				Q. Wheeler	M. Kelliher	B. Greenfield	D. Caviness	M. Fellows	J. Rufo	D. Dzwonkowski	J. Wasiel	R. Davis	M. Barber	Y. Tung	G. Peden	S. Beckstead	B. Bongarten	G. Scott	S. Shannon	C. Spuches	N. Ringler	A. Lombard	Various	AA-CL	R. French	J. View	S. Sanford	C. Dunn	D. Ramin
1: Enrich academic excellence in both undergraduate and graduate education	1. Student satisfaction with education	1.1	NSSE and SOS results																		R							
	2. External assessment of academic programs	1.2	Evaluation reports															R										
	3. Placement of students after graduation	1.3	Graduating student placaement survey																		R							
	4. Academic qualifications of entering students	1.4	SAT and HS averages (EMM-UAIR); GRE and undergraduate GPA (AA-IGS)																R								R		
	5. Research publications	1.5	Research publications per faculty member																		R								
2: Provide an outstanding student experience	1. Student satisfaction with experience	2.1	NSSE and SOS results																		R							
	2. Student retention and graduation	2.2	First-year retention and 6-year graduation rate (EMM-VP); MS and PhD graduation rates (AA-IGS)																					R					
	3. Participation in experiential learning (e.g. study abroad, research…)	2.3	International experience participation; Internship participation (NSSE/SOS); Honors program participation/completion																		R								
	4. Satisfaction with residential experience	2.4	Resident survey; SOS and NSSE survey																		R								
	5. Community Service Hours	2.5	Community service hours																		R								
	6. Student Athletics	2.6	Number of teams; number of participants; number of events, GPA of athletes																										R
3. Be the "go-to" institution with a strong and visible reputation	1. Applicants for admission to undergraduate and graduate programs	3.1	Number of undergraduate applicants (EMM-UAIR); Number of graduate applicants (AA-IGS)																R								R		
	2. Receive recognition in USNews and other popular press rankings	3.2	College rankings																									R	
	3. Visitors to College web site	3.3	Number of visitors to college website																									R	
	4. External research funding	3.4	Total research funding; funding per faculty member																		R								
	5. Faculty recognitions by external agencies	3.5	Faculty honors and reports														R												

4: Become financially secure and independent	1. Increase assets of ESF Foundation	4.1	Foundation assets			R																														
	2. Growth of external research funding	4.2	Total research funding; funding per faculty member					R															R														
	3. Grow funding from licenses and royalties	4.3	License and royalty income; patent applications; patent allowances																				R														
	4. Increase tuition and fee revenue primarily through enrollment growth	4.4	Undergraduate enrollment (EMM-UAIR); Graduate enrollment, graduate tuition incentive program (AA-IGS)							R								R		R																
	5. Minimize administrative overhead costs	4.5	Goldwater Institute ranking (PRES-GRIP); Administrative headcount, Administrative costs (ADMIN-BA)					R		R																										
5: Strategically build and enhance partnerships and collaborative relationships	1. Strengthen relationships with federal, state, and private entities	5.1	Liaison to elected officials, shared services (PRES-GRIP); Number of partnershi9ps (AA-O); Number of events or projects (AA-RP)					R													R	R														
	2. Partner with regional public and private entities to enhance community welfare	5.2	Number of partnerships (AA-O); Community service projects (AA-SA)																		R		R														
	3. Develop new partnerships that expand research capacity	5.3	Number of new entities; Incremental research funding																			R														
	4. Develop new partnerships to expand educational outreach	5.4	Number of faculty members and departments involved; Number of ESF in the High School schools and particpants																		R															
	5. Develop new partnerships that expand opportunities for students	5.5	Number of community service partners (AA-IGS), External funding for credit and non-credit programs (AA-O);																	R	R															
			Number of student exchange programs (AA-IGS)																																			
6: Respond to the needs of society	1. Increase enrollment and graduates	6.1	Undergraduate enrollment (EMM-UAIR); Graduate enrollment (AA-IGS)																	R										R						
	2. Increase diversity in student and staff populations	6.2	Minority and women staff (ADMIN-HR); Minority and women undergraduates (EMM-UAIR,AA-IGS); Minority and women graduate students (AA-IGS)											R						R										R						
	3. Create new academic programs that attract students	6.3	New programs implemented (AA-IGS)																	R																
	4. Increase external research funding	6.4	Total research funding; funding per faculty member																			R														
	5. Increase participation in ESF outreach programs	6.5	Alumni events and participation (PRES-AR); Events and attendance (PRES-D); ESF in the High School participation, outreach events (AA-O)			R	R														R															

Institutional Assessment
Appendix D
Example External Program Review and Response

PROGRAM REVIEW REPORT

Construction Management Program

Department of Sustainable Construction Management and Engineering
SUNY College of Environmental Science and Forestry (ESF)
Syracuse, New York

By

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PHILADELPHIA UNIVERSITY

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TEMPLE UNIVERSITY

December 2011

EXECUTIVE SUMMARY

The external review of the Construction Management program, as mandated by SUNY-ESF, was conducted in November-December 2011 period. The reviewers were appointed and provided with two primary source documents: Self-Study of the Undergraduate Program in Construction Management, prepared by Dr. Susan E. Anagnost, Chair, Department of Sustainable Construction Management and Engineering; and External Review Report Guidelines for the Evaluation of Undergraduate Academic Programs, prepared by the Office of the Provost. Both documents were dated Fall 2011. Upon the request of the reviewers, many other documents were provided including the Department's 2010-2011 Annual Report, Learning Outcomes Assessment Plan and Data, Faculty Resumes, Course Syllabi and Advising Manual. The campus visit and interviews were scheduled on Friday, December 2, 2011.

After extensive review of the documents and conducting interviews with administration, faculty, students, and staff, the reviewers hereby provide the following major recommendations for improvement of the Construction Management program:

1. Program **mission and outcomes** should be tied to College mission. Program outcomes (objectives) should be revised and reduced from 24 to about 5. Course learning outcomes from each course should be tied to the Program objectives. All course syllabi should include the course learning outcomes achieved in that course and how these outcomes tie to the Program objectives.

2. The Program should seek **accreditation** from American Council of Construction Education (ACCE) within two years. The accreditation process will require curriculum changes, especially in the addition of business management courses.

3. The Program should maintain and emphasize the **sustainable** component of the curriculum, which is a unique aspect of ESF.

4. The Program should review its **faculty** in keeping with a curriculum structure that focuses on either accreditation or an in-house vision for the curriculum. Faculty teaching and advising loads should be distributed equitably and faculty members should be provided incentive compensation for exceptional performance. The Program should hire a young or mid-level faculty with a background from an ACCE school, who will contribute effectively in the revision/improvement of the curriculum of the Program. Additional adjunct (visiting) faculty may be hired from the local industry to complement the full-time faculty, which will help to even the teaching load in the department.

5. The Program has an **advising** manual to assist faculty and students, but it seems not all faculty members are effectively using this manual for advising. The Program should develop a set of guidelines for the assignment of advisees, train faculty

advisors and follow-up on their performance so that advising is effective and advising loads are more equitably assigned.

Other minor recommendations are provided in various sections of this report.

INTRODUCTION

The Construction Management (CM) program is housed in the Department of Sustainable Construction Management and Engineering (SCME), one of ten departments/division at SUNY - College of Environmental Science and Forestry (ESF). ESF has a policy to conduct external evaluation of all programs within a six-year period, either by an accrediting body or faculty peers from other institutions. Since ESF's Bachelor of Science in Construction Management program is not accredited, the following external reviewers were selected for this program:

- Greg Lucado, of Philadelphia University (PU), is a Program Director and Associate Professor of Construction Management. PU's CM program is accredited by American Council of Construction Education (ACCE).
- Philip Udo-Inyang, of Temple University, is a Program Director, Department Chair and Associate Professor of Civil Engineering. Temple's CM program is accredited by Accreditation Board for Engineering and Technology (ABET).

Our review process consisted of the following procedures:

1) Review of the self-study report prepared by the department, with appendices that included Delivery of Learning Outcomes, and Responses to Outcomes Assessment Data collected 2009-2010 (from SCME Annual Report);
2) Review of ESF website;
3) Review of other departmental documents, such as course syllabi, faculty resumes, curriculum plan sheet, advising manual, etc.;
4) Interviews with Provost, Department Chair, faculty, students, administrative personnel in charge of ESF assessment, admissions, library, student life and instruction;
5) Review of External Review Report Guidelines.

Our initial review indicated that there are some legacy issues in the CM program as a result of the evolution of the CM program from the Wood Product Science (WPS) program. Whereas WPS had a natural fit into the mission of the College, CM seems to not belong in a school setting like ESF, unless it emphasizes sustainability. For cohesion with college mission, the program has been evolving towards "sustainable construction management." This emphasis should help the students in the employment market. The department name has "Sustainable" word in it but the program title does not.

It was confirmed that we are to review the Program, but in that process we need to also look at the operation of the program, which involves the whole department. Apart from Program mission, we also quickly observed that the stated program objectives (outcomes) need revision

and reduction in number. Accreditation, curriculum, faculty and program execution are the other areas that attracted our attention during the review.

Accreditation is a major issue that the Program has struggled with for some time. The College would like to see accreditation of the Program, but they are not sure if it is attainable and if it is worthwhile. We believe accreditation is necessary for a CM program.

According to ESF's guidelines for external review of programs, the following four areas are covered in this report:

- Curriculum;
- Faculty;
- Students and support services; and
- Program management, operations, and administrative support.

I. Curriculum

The existing curriculum has strengths and features that have led to the success of the Program. The faculty members appear to be dedicated to preparing students for their careers. Students are passionate about learning and characterize themselves as prepared for their initial industry experience. The emphasis on sustainable construction practices is important and timely. The curriculum exposes students to a wide variety of coursework with an apparently effective core of essential construction management courses. The local construction industry seems to appreciate the readiness of graduates evidenced by the success of Program graduates in finding initial employment.

There are aspects of the curriculum that should be reviewed and considered for improvement. The curriculum is neither engineering focused nor management focused. While this current range of coursework offered has its attributes, it inhibits the pursuit of deeper understanding and application of either engineering or management concepts. The program has twenty four (24) stated outcomes that are individually narrow in scope. This may result in a difficulty in communicating vision and assessing the achievement of vision. The mix of academic disciplines among the current faculty could be an impediment to effective course development, and workload assignments. Although there have been discussions in the past regarding accreditation, the curriculum has not been modified to conform to accreditation guidelines.

In order to address the opportunities for improvement, the Program should be reviewed to determine how it currently contributes to the overall mission and stated outcomes of the College. Sustainable construction practice is clearly a significant contribution in this regard. Although the Construction Management Program can and should have specific outcomes that do not necessarily directly serve the College mission, it should also have significant, measurable outcomes that do.

Program outcomes should then be revisited in view of their contribution to College mission, broadening them, and reducing them in number to five or six. Further, these outcomes should be clearly measurable by direct assessment at levels ranging from introductory understanding to mastery.

Each course should have measurable course outcomes that contribute to curriculum outcomes. Assessment of student progress within each course should be directly, visibly tied to the course outcomes. Course syllabi should be revisited and revised accordingly.

Assessment of student success is primarily tied to their performance on the Associate Constructor Examination. This exam is a valuable tool; however it may not measure all of the Program outcomes. Further it is a single measurement, made late in the program. Students are required to take the exam, yet not required to pass it. Thus, some students may not have the

intrinsic motivation to do their best. Program learning assessment should be broadened and included within the coursework.

Revised curriculum outcomes would provide a framework to determine how the faculty can most effectively contribute to the Program, given their individual academic background and industry experience.

This Program has considered the pursuit of accreditation in the past. Strong consideration should be given to that goal. Accreditation guidelines are valuable to College and Program leadership in establishing vision, mission, and outcomes for any program. Candidacy for accreditation (as well as the ongoing maintenance of accreditation) fosters relationships with colleagues at other institutions and the awareness of developments in the delivery of education, specific to a CM program. Further, accreditation of a program has value to employers as they seek to employ the best prepared graduates.

Accreditation of Construction Management Programs can be achieved through the Accreditation Board for Engineering and Technology (ABET) or the American Council of Construction Education (ACCE). ABET accreditation would require this program to shift to a mathematics and engineering emphasis. ACCE accreditation would require the introduction of a significant core of business and management courses.

Given the existing courses in the curriculum, the better fit might be accreditation through ACCE. With the addition of core business management courses and some minor modifications to other program courses, ACCE accreditation should be quite achievable for this Program.

II. Faculty

Qualification: The faculty are well qualified to teach at both the undergraduate and graduate levels; however some are not very comfortable teaching courses in the Construction Management Program. Majority of the faculty have doctorate degrees and those without a doctorate degree are in the process of completing their PhD's.

Background and experience: Based on the history of the department, the faculty have varied background and serious differences on where the department should be headed. Majority of the faculty have been in the department for over 15 years, which tend to limit opportunities for introducing changes or innovation into the Program that may come with the hiring of new faculty. Similarly, majority of the faculty earned their terminal degrees from ESF or SU, which again limits fresh ideas for program improvement and fosters status quo. Interestingly, the two faculty members without a doctorate are working on obtaining their degree from ESF. Therefore, the Program should hire a young or mid-level faculty with a background from another institution with ACCE accreditation, who will contribute effectively in the revision and improvement of the curriculum of the Program.

Workload Assignment: Workload disparity was clearly evident and seems to create low morale and participatory inefficiencies. Junior faculty (by rank) are carrying most of the teaching load in the Program, mainly because their qualifications and experience match the requirements of the CM program. Teaching load disparity is common in most institutions/departments. However, the faculty with less teaching loads should contribute heavily in other areas, such as funded research and administrative assignment. On the other hand, the faculty with heavy teaching load or exceptional assignments should be properly supported with resources and compensated with merit awards. Both scenarios were not evident. Workload disparity may be reduced by hiring a good number of appropriately qualified professionals from the industry as visiting instructors (part time).

Management: There is some concern that the coordinator of the CM program is a junior faculty, who has to propose or recommend program objectives and changes to senior faculty, one of whom may be his mentor or supervisor. Similarly, the department chair has limited role and authority in managing the Program and faculty, some of whom are at the senior level. For instance, the chair cannot effect serious personnel assignments, changes or rewards, including salary merit awards, as a means of motivating or compensating the faculty for increased effectiveness and efficiency. Merit awards given to less productive faculty is demoralizing and counterproductive to achieving the goals and objectives of the Program.

Administration: There seems to be some disconnect between the faculty and the administration in the operation of the program, as well as the structure of the department. Administration is

committed to support the Program if the administration believes that the Program/department is doing the best they can do and the mission of the program is in line with the mission of the College. The sustainable aspect of the CM program would create the link between the Program mission and that of the College.

Advising: All faculty members are involved in some kind of advising at both the graduate and undergraduate levels. However, there is some disparity in advising load, such that a few faculty members are advising many students, while others have a small number of advisees. It was noted that faculty with Wood Product Science (WPS) background are mainly involved in graduate advising. While WPS graduate program is currently viable and needs to be supported with appropriate teaching and advising, WPS faculty should also be involved in the advising of CM students. Program advising has been standardized with the development of an advising handbook and the curriculum sheet, which provide enough information for any faculty to do advising. Visiting (adjunct) faculty should not be primary academic advisor, because of their limited availability and temporary commitment.

Faculty Development: Resources are provided for faculty development, but it seems to be reserved for tenure-track faculty only. Support should also be provided to non-tenure track faculty so that they can advance to the group of true program leaders.

III. Students and Support Services

Enrolment in the CM program has remained steady in the 70-80 range for the past five years. This is a good number in terms of class/cohort management, but it is on the lower side of the median range of enrollments in construction schools across the country. We believe there is potential for the enrollment to increase to 100 and above in 2-3 years, given the fact that ESF is the only school with a CM program in the western New York and northern Pennsylvania areas and the number of applications received has increased five times in five years. Restructuring the department and effective marketing of the CM program, will increase the interest of prospective students to the Program. Recruitment should target freshmen as well as transfers. The proportions of freshmen in the cohorts of recent incoming students average 33%, which is a good ratio. The quality of incoming students has also increased based on the SAT scores for freshmen and GPA's for transfers. For the benefit of transfers, the College should ensure that transfer credits/courses are properly evaluated, as well as providing good advising when transfer students join the Program.

Recruitment: Admission to the CM program is mostly through transfers from junior colleges. There are transfer articulation agreements with about four feeder schools of the CM program. For recruitment, staff from the Office of Undergraduate Admissions (OUA) visit junior colleges, targeting specific programs in those colleges. Typically, 45-50 credits are transferable from junior colleges and the students can finish in two years. Sustained effective admission efforts, targeted to prospective CM students, may increase the current enrolment to triple digits. OUA staff should interact with faculty to resolve academic issues that may arise during recruitment.

Student Life: Students enjoy the community they live and learn in. They commented favorably to the quality and availability of extra-curricular programs and activities. Freshmen are required to live on campus. Some sophomores also stay on campus. A new residence hall is being built. Previously, all ESF students lived in Syracuse University dormitories. Currently, some ESF students still live in SU dorms. Because of close proximity to SU, students are exposed to numerous facilities, extra-curricular and social activities. There are about 30 student organizations, with a few directly related to the interests of CM students. Student life is in a great shape.

Library: There are many databases available, including the Building Green Database, which is specific to CM. Library purchases are dependent on request and funding. Library does not have a standing CM faculty representative on its curriculum committee. Input should be sought from CM faculty on purchases that will support CM education and faculty research.

Course Assessment: Students complete course surveys believing that student feedback surveys are being used to improve courses, but they have some doubts. Student surveys are conducted

online. Low response rate is an issue. Results of the surveys are provided to the faculty, chair and provost. Instructional technology and other academic facilities are adequate and with latest technology. Efforts should be made to increase the response rate and publicize the application of the survey results to changes and improvements in the Program and facilities.

Certifications and Competitions: Students appreciate the opportunities provided for them to achieve certifications, including the Associate Certified Professional Constructor (ACPC), LEED Green Associate, and OSHA safety certificate. They felt prepared to take these certification exams. They also participated in CM student competition conducted by Associated Schools of Construction and performed well. These certifications and competition are good indicators of the standard of the curriculum that the students have gone through. Since ACPC exam is used as one of the program assessment method, it is required that students take it before graduation, although they do not have to pass it. Recent results indicate that ESF passing rate was above the national average.

Advising: The students we interviewed were generally happy with their academic advising, because either they had a good advisor or they were proactive in using the curriculum advising sheet to take courses as recommended. However, they realize that there are some issues with advising from some faculty members.

Facilities: Students and faculty state that the facilities, equipment and technology are adequate for their needs. The computer lab housing the computers with curriculum-specific software for CM is very heavily scheduled during the day, making it difficult for students to perform some of their out of class work. Classes that do not require student's use of computer during the class should not be scheduled in this computer lab.

Employment: Graduates of the program have obtained gainful employment, and some have reported high starting salary. The program should continue to encourage and support students to do internship. Assistance for internship is available through the office of career services. However, faculty members with connection to the industry are more effective and should assist students to get internship and/or employment.

IV. Program Management, Operations, and Administrative Support

Program Management: The Program appears to function smoothly from an administrative point of view. Responsibilities are clear and basic academic activities appear to be well organized and effective. Some changes in management approach could improve the cohesiveness and effectiveness of Program operations.

Program mission and outcomes should be tied to College mission and outcomes.

Advising is administered at the Program level. There is anecdotal evidence that the approach to advising is not uniform or consistent within the Construction Management Program. Steps should be taken to establish policies and guidelines and train and evaluate faculty advisors to enhance consistency in the advising program.

There were faculty comments during individual interviews indicating that some faculty members do not feel connected to leadership at the College and Program level with regard to the direction and vision of the Program. This may be an area to further explore. Effective communication and cooperation of the faculty is, of course, essential to any management effort regarding evaluation, change, and improvement.

Leaders at the College and Program levels could elect to use accreditation candidacy as a means of galvanizing the program's mission and vision, resulting in improved communication and common purpose.

Program Assessment: Assessment is conducted on all ESF programs on a six-year cycle or according to accreditation body schedule. ESF has a total of 28 programs in 10 departments/divisions, therefore assessment is conducted regularly. Two other assessments are underway currently. The findings and recommendations of previous review(s) would have been beneficial to the current review in terms of evaluation of progress on specific issues. Nevertheless, department's annual report, assessments, and evaluation of progress on its strategic plans were very helpful in this review process.

CONCLUSION

We believe that ESF's CM program is viable and its graduates are marketable, especially with the unique sustainable concept introduced into the program. The program should seek accreditation preferably through ACCE, which will standardize and direct curriculum structure. Program outcomes or objectives should be re-evaluated and reduce from 24 to about 5. The faculty are interested in contributing to the success of the program's graduates. However, the faculty has to collectively develop program vision, mission and objectives, so that they can effectively participate in the curriculum changes, improvements and progress.

The administration should support the CM program by providing resources for faculty recruitment and development, as well as assisting in the development of program vision and mission to be consistent with the College vision and mission.

It was a very good experience for us to visit another school and review its CM program. As peer reviewers, we also learned a lot from the ESF administration, faculty, students and staff, which would be beneficial to our programs.

We hope that our interpretation and analysis of the information provided to us through interviews during the campus visit, the self-study report, the website and other documents provided are accurate and objective. Therefore, we hope that our recommendations will be taken in good faith and applied to the extent possible for the benefit and improvement of the CM program at ESF. We believe there is a great future for CM program for ESF.

SCME Response to External Reviewers Recommendations
January 23, 2012

SCME responses are shown in italics beneath each recommendation. This report includes responses to the major recommendations from pages 2 and 3 of the Report.

Reviewer's Report: "After extensive review of the documents and conducting interviews with administration, faculty, students, and staff, the reviewers hereby provide the following major recommendations for improvement of the Construction Management program:"

1. Program **mission and outcomes** should be tied to College mission. Program outcomes (objectives) should be revised and reduced from 24 to about 5. Course learning outcomes from each course should be tied to the Program objectives. All course syllabi should include the course learning outcomes achieved in that course and how these outcomes tie to the Program objectives.

Response:
The SCME faculty concurs that we can consolidate the learning objectives of the construction management degree program from a group of 24 specific statements to a more concise group of perhaps 5 general statements that cover the spectrum of our course offerings , and to maintain alignment of these program outcomes (objectives) to the mission of the college. We also agree to review all required course descriptions and indicate how the individual course outcomes are tied to the program outcomes and to the mission of the college. This process will take place in spring 2012 during our strategic planning and curriculum review. If necessary we will make amendments to the course descriptions and submit these changes to the committee on curriculum for approval. All course syllabi will be reviewed and updated to incorporate course learning outcomes in each syllabus, and show how the course learning outcomes tie to the program objectives.

2. The Program should seek **accreditation** from American Council of Construction Education (ACCE) within two years. The accreditation process will require curriculum changes, especially in the addition of business management courses.

Response:
The SCME faculty agrees that we seek accreditation by the American Council of Construction Education (ACCE) and do so within two years. We will review our curriculum and work towards aligning our coursework to the ACCE requirements. Upon departmental approval, the appropriate curriculum changes will be submitted to COI for approval. This will require the addition of business/management courses and support for core courses which may require additional faculty with expertise in these fields. It is recognized that to complete and continue this accreditation effort we will need the support of the ESF administration with the necessary resources.

3. The Program should maintain and emphasize the **sustainable** component of the curriculum which is a unique aspect of ESF.

Response:
The SCME faculty agrees to continue to maintain and emphasize the sustainable component of the program. In addition to our current efforts, we will ask the support of the administration to promote the sustainability aspects of the CM program which are unique among construction management programs. We would benefit from (and would require) administrative support to provide high profile advertising to increase our visibility. SCME department and SCME faculty should be involved in campus wide sustainability programs with high level responsibilities and/or positions. With ACCE accreditation, we will maintain our sustainable construction courses while meeting the core ACCE curriculum requirements. ACCE accreditation will provide visibility at the national level.

4. The Program should review its **faculty** in keeping with a curriculum structure that focuses on either accreditation or an in-house vision for the curriculum. Faculty teaching and advising loads should be distributed equitably and faculty members should be provided incentive compensation for exceptional performance. The Program should hire a young or mid-level faculty with a background from an ACCE school, who will contribute effectively in the revision/improvement of the curriculum of the Program. Additional adjunct (visiting) faculty may be hired from the local industry to complement the full-time faculty, which will help to even the teaching load in the department.

Response:
The SCME faculty agrees to review its faculty in keeping with (and working towards) a curriculum structure <u>that focuses on accreditation by ACCE</u> as our in-house vision. In so doing, faculty should be aligned to the curriculum within their areas of expertise. ACCE requires that faculty have the <u>proper credentials</u> to teach certain courses and will not allow us to be accredited if they determine otherwise. The department will identify faculty positions that are necessary to fulfill ACCE curriculum requirements and will inform the administration.
The SCME faculty recognizes that the construction management degree program is the sole programmatic focus of department efforts and faculty realignment in the short term.
We agree with the external reviewers that the college should support the hire of a young or mid-level faculty (PhD) from an ACCE accredited program to assist us in fulfilling the ACCE requirements and strengthen the CM program. A new faculty member would help strengthen the CM program by allowing us to offer a broader range of CM courses, attract more graduate students, strengthen our research efforts or teach management courses. Any new faculty member(s) would be required to have a PhD in construction management or closely related field, and have the proper credentials to teach the needed courses. We agree that it may be possible to hire visiting instructors to assist with fulfilling some of the ACCE requirement. Efforts will be made for equitable distribution of work efforts in keeping with their title (Instructor; Asst. Professor, etc.).
Efforts will be made for incentive compensation for exceptional performance, although there are restrictions on this because of being unionized. Although there are monetary restrictions, incentives will continue to be provided in the way of reducing teaching load vs. research or

college/department service. Advising issues will be identified and measures will be put in place to address issues. Hiring new faculty will help with workload distribution (both teaching and advising).

5. The Program has an **advising** manual to assist faculty and students, but it seems not all faculty members are effectively using this manual for advising. The Program should develop a set of guidelines for the assignment of advisees, train faculty advisors and follow-up on their performance so that advising is effective and advising loads are more equitably assigned.

Response:
The SCME faculty agrees that faculty members are not consistent in their effective use of the advising manual for student advising. The current Advising Manual was developed three years ago and has served as an important tool for advising. It is updated each semester, copies are given to faculty and students and it is posted on the web. Prior to each advising period, students and faculty are sent reminders including a link to the current advising manual. During orientation each new student is given a manual and the contents are reviewed. Despite these efforts, it appears that use of the manual has been inconsistent. The department will work towards better training of advisors, and look into other reasons for inadequate advising, keeping in mind that what may be thought to be poor advising may be a symptom of inadequate course offerings or unreasonable course sequencing, or lack of oversight/restrictions on prerequisites through the college registration process. There is a problem with students registering for courses for which prerequisites have not been completed. This is an issue for Faculty Governance.
The department will work towards developing a method to assess the performance of advisors, if possible, and follow-up on faculty advisor performance. The faculty is concerned as to how this would play out since students don't always listen to their advisors, and complaints of advising performance may not reflect the true circumstances.
Assignment of advisees: The department will consider developing a set of guidelines for assigning advisees. This has been one of the duties of the department chair, who will ask for input and guidance from the faculty and the Provost. The department will investigate the various models that exist for assigning advising duties and try to find a model that will work for us.
[Note from Chair: Advising assignments are included in the total faculty work effort assignment (required in the new P&T guidelines), thus advising assignments may not be equally divided, but will be a percentage of the faculty member's overall work effort. The percentage for each component of work effort (instruction, scholarship, outreach, and service) varies greatly among the faculty and is dependent on title.]

General Education
Appendix A
Draft Report of the ESF General Education Committee, February 2015

Draft Report 2/28/2015

General Education Assessment Academic Year 2014-2015

The initial General Education Program at SUNY ESF, implemented in 1999, was created as a response to the SUNY Board of Trustees requirement to standardize general education across the SUNY system. The program has evolved both at a system level as well as at the College level and the assessment plan has been reorganized to meet the needs of the College, the new system initiatives, as well as the Middle States criteria.

Assessment of the general education program for 2014-2015 has focused on developing the process for evaluating our general education goals and generating recommendations for making assessment more efficient and informative in coming years.

Process

This past year a committee of faculty reviewed the general education student learning outcomes (SLO's) at the system level, the current college level, as well as those mandated by Middle States. The SLO's (**Appendix I**) were refined to meet these criteria and then rubrics were generated to guide the assessment of student work (**Appendix II**). Student work from a variety of sources were collected, including papers from general education writing courses, exams and laboratory reports from general education mathematics and science classes, and senior-level capstone projects from 6 of 8 departments and programs from across campus. The rubrics were applied and the results tabulated (**Appendix III**). The faculty involved with the initial review met to make recommendations based on the data and have generated this report, which was presented to department chairs, and at each department's faculty meeting for review. It was also presented to the general faculty for review and feedback at a College-wide Governance meeting. In March and April of 2015, the committee plans to refine this report, solicit more recommendations for improving learning gains and to create a plan of action beginning in the fall of 2015.

Student Learning Outcomes

SUNY ESF's general education Student Learning Outcomes (SLO's) are concerned with six areas: (1) Scientific Reasoning; (2) Quantitative Reasoning; (3) Basic Communication Skills; (4) Technological and Information Literacy; (5) Values, Ethics and Diverse Perspectives; and (6) Critical Thinking.

(1) Scientific Reasoning

Students at ESF will be able to: demonstrate an understanding of modern science, the implications of scientific discoveries, apply the scientific method, and to use science to address contemporary problems.

(2) Quantitative Reasoning

Students at SUNY ESF will be able to effectively communicate quantitative information through describing, interpreting, applying, or evaluating problems.

(3) Basic Communication Skills

Students at ESF will demonstrate the ability to formulate and present ideas in both written and oral forms that reflect critical thinking skills; show awareness of audience, context, and purpose; and present a well developed argument using appropriate sources.

(4) Technological and Information Literacy

Students at ESF will be able to use critical thinking skills to determine the information needed to solve a problem, access information using appropriate technologies, and effectively and appropriately use information to accomplish a specific purpose.

(5) Values, Ethics and Diverse Perspectives

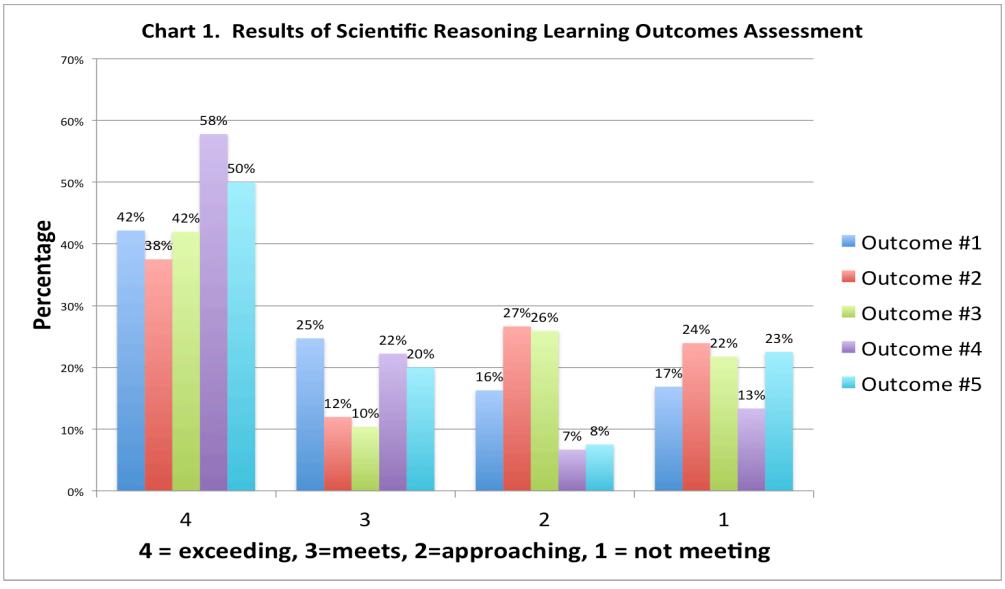
Students at ESF will be able to demonstrate an awareness of diverse cultures and values, recognize ethical issues in contemporary society, and apply ethical concepts in addressing diverse personal, professional, and societal settings.

(6) Critical Thinking

Summary of Assessment of Student Work

(1) Scientific Reasoning

A rubric was used to assess five aspects associated with the broad Scientific Reasoning learning outcome above. Lecture assignments, laboratory papers, exams and capstone papers were used to assess these five outcomes: (i) demonstrate knowledge of the scientific method; (ii) formulate and test hypotheses, (iii) assess credibility and validity of scientific information, (iv) make informed decisions on contemporary issues demanding scientific literacy and (v) analyze and discuss the relationship between scientific discovery and society. For all outcomes we set a target goal of 70% of the student work assessed should meet or exceed expectations. The results of our assessment are shown in **Chart I**.



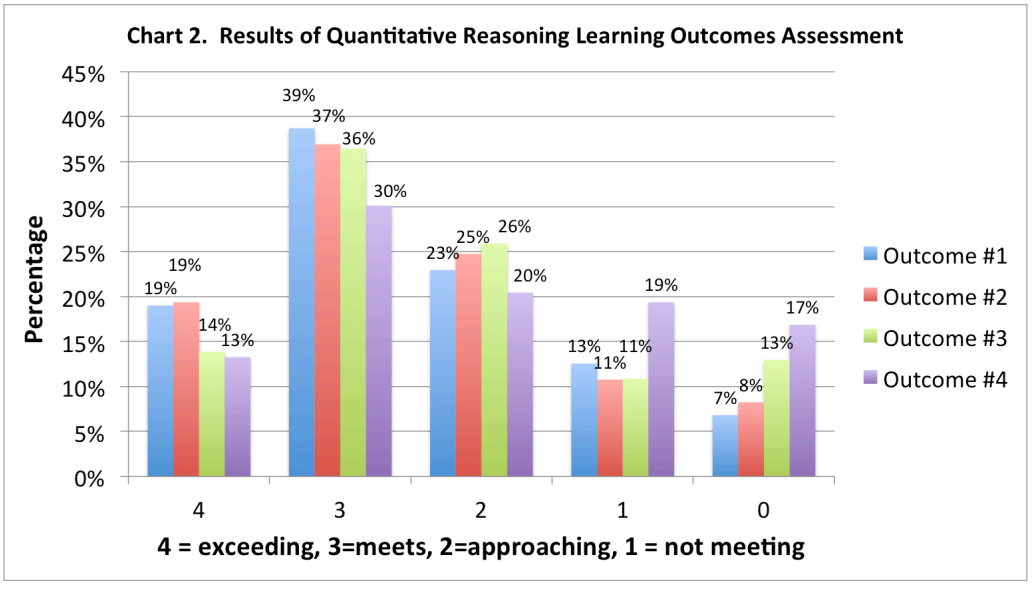
The basic premise of scientific reasoning rests with an understanding of, and the ability to, apply the scientific method. Learning outcomes #1 (demonstrate knowledge of the scientific method) and #2 – (formulate and test hypotheses) directly assess how well our students are achieving our learning outcome goal for the scientific method. For outcome #1, we are approaching the goal of 70% meeting and exceeding but for out come #2 we are falling short. A large number of the papers used to assess the second outcome were first year papers where students are still learning about experimental design. In capstone courses however, the students show significantly more facility with experimental design and the iterative process associated with the scientific method. Recommendations for improving the outcome here is to introduce experimental design earlier in the curriculum and to ensure that all students have a final capstone experience.

Learning Outcome #3 was somewhat disappointing, with only 52% of our students meeting or exceeding the standard set. It was discussed by the committee and the recommendation was that an after the fact assessment for this outcome may not be the best way to understand where our students on this topic. Rather, we think course instructors should be provided with specific things to look for and to analyze their papers for this individually. This outcome requires specific topical knowledge and therefore is best evaluated by the capstone instructors.

The results of 80% and 70% for outcomes #4 (making informed decisions on contemporary issues) and #5 (analyze and discuss the relationship between scientific discover and society) indicated that our students generally are meeting the standard we have set. However, the student work that was collected was specific to these outcomes, a question on a final exam for a general education chemistry course was used, and that question specifically asked for the students to compare and contrast and express an opinion on a societal topic.

(2) Quantitative Reasoning

A rubric was used to assess four aspects associated with the broad Quantitative Reasoning learning outcome above. Lecture assignments, laboratory papers, exams and capstone papers were used to assess these four outcomes. The data can be found in **Chart 2**.



The results of 58% proficiency, for first outcome of identifying and describing quantitative information in any context, is a little low. This is basic quantitative reasoning skill, and we would expect that 80% of students would be able to exemplify this outcome at an average level. This outcome may need to be split into distinct outcomes in order to better identify what students are having difficulty identifying or describing. The problems that identified this learning outcome were poor indicators, and they seemed to have been more focused on the more difficult portion of this outcome. The proportions of symbolic, visual, and numerical problems selected were not equal, and this may have skewed the results. However, the biggest factor looking at the data was that most of the problems that were targeted for assessment attempted to capture all of the learning outcomes, and this in itself was faulty. This becomes evident when we look only at capstones and senior papers, the percentage increases to 72% of students at least meeting outcome one. With this consideration, the 58% is low but understandable considering the metrics.

The data indicates that 56% of the samples surveyed were at least meeting outcome 2; Interpret quantitative information and draw inferences from them. Considering only questions that were more directly designed to measure this outcome (i.e. exam questions), then the data indicates that 70% would be at least meeting this outcome.

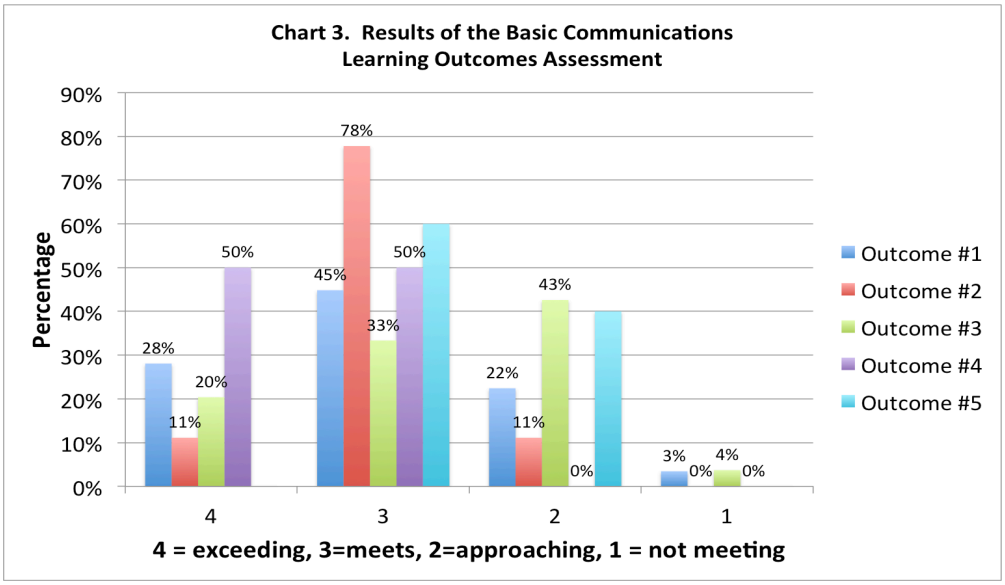
The most disappointing result was what the data says about objective three, “Apply and Analyze problems with acquired quantitative reasoning and skills.” The data indicates that 50% of students were meeting or exceeding objective for the articles that we looked at. This percentage did not vary much from exam questions to capstones or senior thesis. Ideally 75% of the students should be able to exemplify that they are at least meeting this objective. I suspect that with a better data set this percentage is much higher and closer to the 75% target. Nonetheless, it is disappointing that with senior papers and capstones alone only showed 52% were exemplifying that they were meeting this objective.

The data collected indicates that 43% were meeting or exceeding the fourth objective of “Synthesize and Evaluate problems within a specific discipline using quantitative reasoning.” This is considered a high level skill where students are able to break down quantitative information and rebuild it using higher level quantitative tools to be able to support or arrive at a conclusion, and this occurs within a specific discipline. This objective is ideal, and we do not expect all students to be proficient in exemplifying this objective. However, this objective is the ideal aspiration and we think it would be wrong to omit it. With that said, we would expect that half of the qualifying articles examined would display this level of quantitative fluency. This objective should ideally be found in a capstone, senior project, or a comprehensive project, the problem is that not all such articles require such an analysis, and might be difficult to measure consistently. The data shows that 43% is meeting this objective when we consider only capstones, and this is satisfying as it is close to the 50% target. On the flip side, the data shows that 70 % are meeting or exceeding this objective based solely on exam questions, however this type of high level objective is not appropriately measured in such a context.

(3) Basic Communication Skills

A rubric was used to assess five aspects associated with the broad Basic Communication Skills learning outcome above. Lecture assignments, laboratory papers, exams and capstone papers were used to assess these five outcomes. The data can be found in **Chart 3**.

The results gathered concerning Learning Outcome #1 (produce writing that clearly communicates ideas reflective of critical thinking skills) show that our students are meeting our expectation of being able to produce writing illustrative of their critical thinking skills, that is grammatical correct and well developed. 72% of our students are meeting or exceeding the standard for this outcome. The data that was used included both student work from writing classes where the emphasis is on the writing process as well as senior year capstone courses where writing is used as a tool to bring research and experimental design work to the forefront.



Learning Outcome #2 is actually quite low, only 14% of our students are meeting or exceeding our expectations, however, this is most likely a direct reflection of not being able to measure this outcome from finished work. If, however, only the student work that illustrates fluency in writing is analyzed, we notice that the numbers increase dramatically. This is a good example of where the general education committee will need to provide the faculty members with a rubric and have them assess their student's work as it is being produced. This is what might be considered an "at the time" assessment, final work shows the result of the process but not the fluency of engaging with the process.

Learning Outcome #3 was also disappointing. One of the most important aspects of good writing is the ability to interpret and use others work to enhance and support your writing. The fact that only half of the student work that was reviewed is showing evidence of this indicates that more work needs to be done with students on how to use citations. A recommendation to the faculty from this committee includes having students write additional annotated bibliographies and categorizing their references as pro and con arguments and then writing why it is a pro or con argument with respect to their work.

The 100%, meeting and exceeding result for Learning Outcome #4 is misleading, it like Outcome #2 was nearly impossible to assess from the student work that the committee collected. Of the papers collected only 6% showed meeting and exceeding in this category but almost all of them were missing this aspect it was unclear to the committee if that was because it was part of the assignment and the student failed to demonstrate it or that it was never a part of the assignment and therefore the document was inappropriate for assessing this outcome. This is another "at the time" assessment

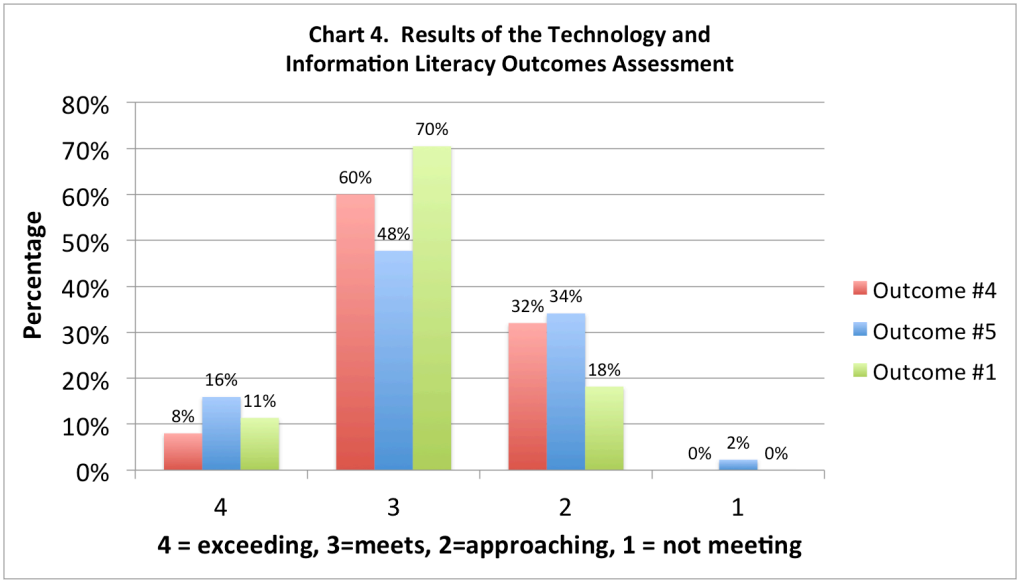
that will need to have faculty input directly about their students. The committee plans to provide students with rubrics for general education assessment and to train them on how to assess oral presentations for the purpose of general education (not course assessment) assessment.

Peer review is another example of an “at the time” assessment, little if any of the materials collected had any evidence of peer review.

In summary, learning outcome #1 and #3 were successfully assessed through this process and the students are meeting standards set for outcome #1 and for outcome #3 the committee will solicit feedback from the Writing and Capstone instructors about how to improve citation use in writing arguments. For Outcomes #2, #4 and #5, a rubric will be developed and provided to faculty teaching those courses so that “at the time” assessment can be made and used as a living contribution to general education assessment.

(4) Technological and Information Literacy

A rubric was used to assess three aspects associated with the broad Technological and Information Literacy learning outcome above. Lecture assignments, laboratory papers, exams and capstone papers were used to assess these three outcomes. The data can be found in **Chart 4**.



Assessment of Learning Outcome #1 – Use critical thinking skills to determine the nature and extent of the information needed to solve a problem – indicates that our students have the skills to determine what information they need to find to solve a problem. The capstone papers showed clear evidence of being able to find citations that backed up their work and that they were able to identify clear questions and find the information necessary to begin investigating those questions. Capstone projects were ideal for evaluating this outcome as many departments ask students to write a proposal and then to write their final paper in the form of a research paper or project report.

The committee identified outcome #2 as important at the beginning of the process but once the review of student work started, it became evident that this was not something that could be evaluated from finished work. The only materials available to the reviewers were finished documents after the

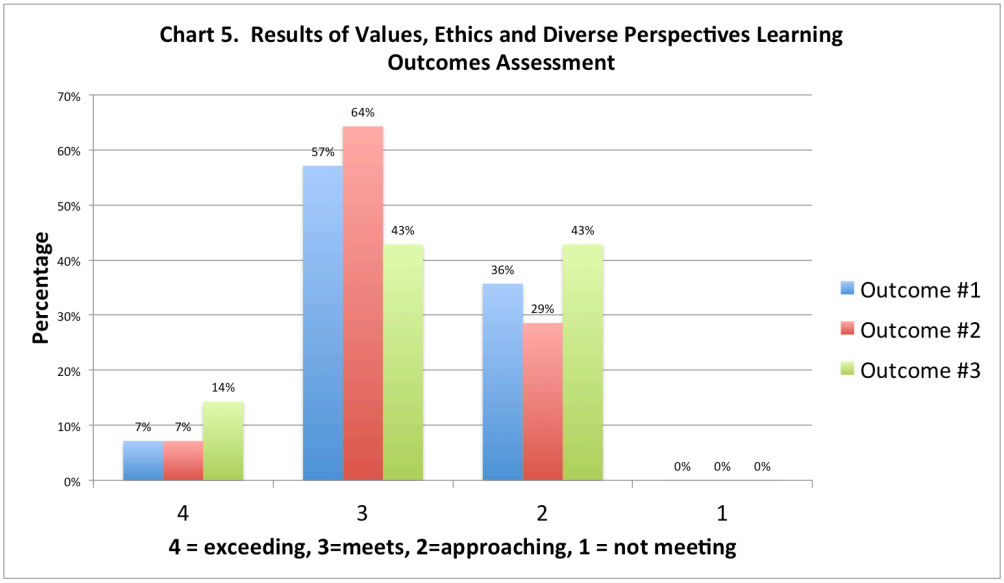
technologies were used to find the citations and background materials. There was no way to evaluate what the students used to find the materials. This was another "at the time" assessment that the committee thinks would be best evaluated by the course instructor or through the Library Literacy courses that are offered: ESF 200 Information Literacy. The committee plans to create a rubric for this and to provide it to our ESF 200 faculty and ask them to complete it each year and submit the data to the committee for inclusion in the assessment process.

Prior to commencing review of student work, the committee did not pay careful attention to Outcomes that were overlapping between subject areas. This inefficiency will be addressed next fall when in the next iteration of general education assessment. As a result, this team of reviewers did not evaluate Outcome #3.

The results for outcome #3 and #4, while lower than our target at 68% and 64% respectively, were assessed and the student work showed clear evidence of effective use of information and proper citation. As indicated in basic communication assessment, students continue to need practice using sources effectively to support their arguments. It is heartening to note that while there are subtle differences in the rubric used to assess Outcome #4 here and Outcome #3 for basic communication, the results were close. Therefore, addressing this on two fronts is likely to increase the success rate of our students in the future.

(5) Values, Ethics and Diverse Perspectives

A rubric was used to assess three aspects associated with the broad Values, Ethics and Diverse Perspectives learning outcome above. Lecture assignments, laboratory papers, exams and capstone papers were used to assess these three outcomes. The data can be found **Chart 5**.



The committee was actually quite surprised by the scores on the outcomes for this SLO. Generally, this has not been something that College's general education courses have had time to emphasize and going into the review there was general concern that it would be missing from our student work altogether. The use of capstone courses however illustrates that through professional development seminars and upper-level courses where students work closely with faculty members and

professionals in the community, they are being exposed to the ethics within their fields and perhaps in society. They are then incorporating them into their senior projects and synthesis/capstone papers. In many departments there has also been a movement toward lower-level courses on professional ethics.

Moving forward, the committee is excited by the opportunities being presented by the revision of the undergraduate program through the strategic planning process to be more intentional about creating opportunities for our students to engage more directly with different cultures and with the philosophy of science and history. Intentionality in the design of these experiences will result in better outcomes in the very near future. Some of the current ideas on the table include, increased community engagement through service learning, emphasis on a travel experience (semester away US or Abroad) and a more focused general education program where sets of core courses discuss some of the biggest societal and environmental questions of the day.

(6) Critical Thinking

Each of the individual areas assess above have critical thinking student learning outcomes and these have not yet been correlated at this time.

Recommendations based upon data collected

- Analyze data over a three year period
- Collect materials in electronic format
- Require the use of an e-portfolio
- Create spreadsheets for faculty to evaluate items that are best done by the instructor
    - Use of databases to find references (Library courses)
    - Interpretation of reference materials (instructor of capstone courses)
- Provide feedback to faculty about student learning outcomes so that they can better incorporate the material into their courses.
- Create a cohesive general education program that runs through all four years
- Require all majors to do capstone experiences
- Create a group responsible for overseeing and creating the general education program
    - Could be a sub-committee of the faculty Governance committees, Instructional Quality and Academic Standards and/or Curriculum
    - Could be a division like ES

Respectfully submitted on behalf of the committee by Kelley J. Donaghy, Committee Chair

Committee Members

Mary Thompson, Asst. Prof. of Mathematics
Shannon Farrell, Asst. Prof. of Biology
Nasri Abdel-Aziz, Assoc. Prof. Mathematics
Scott Shannon, Assoc. Provost of Instruction
Alison Oakes, Graduate Student, Biology
Siddarth Chatterjee, Prof. of Engineering
Kelley Donaghy, Assoc. Prof. of Chemistry
Lindi Quackenbush, Assoc. Prof. of Engineering
Benette Whitmore, Asst. Prof of Writing
Jo Anne Ellis, Librarian

APPENDIX I.

General Education Student Learning Outcomes

1. Scientific Reasoning
2. Quantitative Reasoning
3. Basic Communication Skills
4. Technological and Information Literacy
5. Values, Ethics and Diverse Perspectives

General Education Scientific Reasoning Student Learning Outcomes

Students at ESF will be able to demonstrate an understanding of modern science, the implications of scientific discoveries, be able to apply the scientific method and to use science to address contemporary problems.

ESF Scientific Reasoning Learning Outcomes	Products and Sampling Plan: What products will be sampled for assessment and when.	Analysis: What do we do to maintain or improve?
1. Demonstrate knowledge of the scientific method.	Lecture Assignments and Exam and Quiz Questions - from the general education science courses	
2. Formulate and test hypotheses	Laboratory reports from the general education science courses.	
3. Assess credibility and validity of scientific information***	Lab reports and Capstone papers - evaluate citations; Analytical writing unit from EWP 190 courses.	
4. Make informed decisions on contemporary issues demanding scientific literacy***	Final Exam Questions from General Chemistry I; Final Lab report in General Chemistry II; General Biology assignments on current events related to scientifc discoveries; capstone papers from all majors that have capstones	
5. Analyze and discuss the relationship between scientific discovery and society		

***Critical Thinking Student Learning Outcome

Quantitative Reasoning Student Learning Outcomes

At SUNY ESF, we have two sets of learning outcomes that we need to consider. The SUNY general education mathematics requirements, and the institutions learning outcomes involving quantitative reasoning. The SUNY general education mathematics requirements (shown below) are a subset of the institution's Quantitative Reasoning learning outcomes.

ESF's Quantitative Reasoning Learning Outcomes	Products and Sampling Plan: What products will be sampled for assessment	Analysis: What do we do to maintain or improve? (every 3rd year)
Students will be able to:		
Identify and Describe quantitative information symbolically, visually, numerically or verbally.	Exams , Projects, Labs, Fieldwork	
Interpret quantitative information and draw inferences from them.	Exams , Projects, Labs, Fieldwork	
Apply and Analyze problems with acquired quantitative reasoning and skills.	Exams , Projects, Labs, Fieldwork	
Synthesize and Evaluate problems within a specific discipline using quantitative reasoning.	Exams , Projects, Labs, Fieldwork	

Basic Communication Outcomes

ESF's Basic Communication Learning Outcomes	Products and Sampling Plan: What products will be sampled for assessment?	Analysis: What do we do to maintain or improve? (every 3rd year)
Students will be able to:		
1. Produce writing that clearly communicates ideas reflective of critical thinking skills.	Research papers/ portfolios (random sample of 40) from Research Writing & Humanities (EWP 290)or… Senior Synthesis capstone projects (random sample of 40) representative of various majors	
2. Demonstrate fluency in a writing process.	Research papers/ portfolios (random sample of 40) from Research Writing & Humanities (EWP 290) or… Senior Synthesis capstone projects (random sample of 40) representative of various majors	
3. Demonstrate the ability to integrate relevant sources when composing an argument.	Research papers/ portfolios (random sample of 40) from Research Writing & Humanities (EWP 290) or… Senior Synthesis capstone projects (random sample of 40) representative of various majors	
4. Demonstrate the ability to prepare and present an oral presentation.	Senior Synthesis capstone presentations (random sample of 40) representative of various majors	
5. Demonstrate the ability to evaluate and provide meaningful feedback on own and others work.	Senior Synthesis capstone presentations (random sample of 40) representative of various majors	

General Education Technological and Information Literacy Student Learning Outcomes

Students at ESF will be able to demonstrate an awareness of diverse cutlures and values, recognize ethical issues in contemporary society, and apply ethical concepts in addressing diverse personal, professional and societal settings.

ESF Scientific Reasoning Learning Outcomes	Products and Sampling Plan: What products will be sampled for assessment and when.	Analysis: What do we do to maintain or improve?
1. Use critical thinking skills to determine the nature and extent of the information needed to solve a problem.	Senior Synthesis or Capstone Projects	
2. Effectively and efficiently access needed information using appropriate technologies.	Senior Synthesis or Capstone Projects	
3. Critically evaluate information and credibility of its sources.***	Senior Synthesis or Capstone Projects	
4. Effectively use information to accomplish a specific purpose.	Senior Synthesis or Capstone Projects	
5. Ethically and legally access and use information		

***Critical Thinking Student Learning Outcome

Values, Ethics and Diverse Perspectives Student Learning Outcomes

ESF's Values, Ethics, & Diverse Perspectives Learning Outcomes	Products and Sampling Plan: What products will b sampled for assessment	Analysis: What do we do to maintain or Improve? (every 3rd year)
Demonstrate awareness and recognition of diverse cultures and ways of thinking and knowing	Capstone projects, Senior Synthesis projects (random sample of 40) representative of various majors	
Demonstrate recognition of ethical issues throughout society.	Capstone projects, Senior Synthesis projects (random sample of 40) representative of various majors	
Apply ethical concepts to diverse personal, professional or societal settings.	Capstone projects, Senior Synthesis projects (random sample of 40) representative of various majors	

APPENDIX II.

Rubrics Used for Assessing Student Learning Outcomes

1. Scientific Reasoning

2. Quantitative Reasoning

3. Basic Communication Skills

4. Technological and Information Literacy

5. Values, Ethics and Diverse Perspectives

Scientific Reasoning Student Learning Outcomes

Students should be able to:	Exceeding (4)	Meeting (3)	Approaching (2)	Not Meeting (1)
Learning Outcome #1 Demonstrate Knkowledge of the Scientific Method	Papers show a clear introduction based on observation, a hypothesis, methods section on the experiment to be done, a results and discussion section that is well thought out and based on collected data and a possible future work section	Papers have introduction, hypothesis, methods, results and discussion section, but it is less well written, the results and the data do not match or at least seem less well understood. No more than one missing component.	Several components are missing, the data collected seems weak or missing and the results and discussion section do not discuss the data collected.	Paper does not have a clear outline that would indicate that the scientific method was used in the development of the ideas.
Learning Outcome #2 Formulate and test hypotheses	Hypothesis is clearly spelled out and the introduction and experimental design are clear. Data is collected that support or deny the hypothesis.	Hypothesis is spelled out, the experimental design if flawed or at least not as well developed. Data is collected that support or deny the hypothesis	Either the hypothesis is missing, the experimental design is flawed. Data is collected but it is not able to support or deny the hypothesis	No hypothesis, experimental design is unclear, data is not collected or it not relevant to the rest of the paper
Learning Outcome #3 Assess credibility and validity of scientific information	References are present and discussed critically in the text. A variety of reference materials are used (primary, secondary) and are referenced accurately.	References are present and may be discussed critically in text. Less variety in reference materials used and the style of referencing may not be uniform	Very few references are present but not discussed critically. Only websites are used as references and the style of the references are not uniform.	No references.
Learning Outcome #4 Make informed decisions on contemporary issues demanding scientific literacy	Students are able to express an opinion about a prompt that includes a contemporary issue (fracking, energy, biodiversity, sustainability). They can write pros and cons and then based on their arguments, they express a well supported opinion.	Students are able to express an opinion about a prompt that includes a contemporary issue (fracking, energy, biodiversity, sustainability). Their opinion however is not well supported and they do not have a set of pros and cons	Students express an opinion about a prompt that includes a contemporary issue (fracking, energy, biodiversity, sustainability) but there is no supporting evidence presented.	Opinion is yes or no, no clear understanding of the problem expressed in the prompt.
Learning Outcome #5 Analyze and disucss the relationship between scientific disovery and society	Clear Connections are made between the history and philosphy of science and their impact on society. For example: ethics and the tuskegee experiments or vacinnations or the rise of technology.	Connections are made between the history and philosphy of science and their impact on society, discussion is in much less depth. For example: ethics and the tuskegee experiments or vacinnations or the rise of technology.	Weak Connections are made between the history and philosphy of science and their impact on society, discussion has no depth. No examples are given.	No connections are made, no examples are given and no attempt to provide any details is made.

Student's should be able to:	EXCEEDING (4)	MEETING (3)	APPROACHING (2)	NOT MEETING (1)
Interpret: *Ability to explain information presented in mathematical forms (e.g., equations, graphs, diagrams, tables, words)*	Provides accurate explanations of information presented in mathematical forms. Makes appropriate inferences based on that information. *For example, accurately explains the trend data shown in a graph and makes reasonable predictions regarding what the data suggest about future events.*	Provides accurate explanations of information presented in mathematical forms. *For instance, accurately explains the trend data shown in a graph.*	Provides somewhat accurate explanations of information presented in mathematical forms, but occasionally makes minor errors related to computations or units. *For instance, accurately explains trend data shown in a graph, but may miscalculate the slope of the trend line.*	Attempts to explain information presented in mathematical forms, but draws incorrect conclusions about what the information means. *For example, attempts to explain the trend data shown in a graph, but will frequently misinterpret the nature of that trend, perhaps by confusing positive and negative trends.*
Identify and Describe: *Ability to convert relevant information into various mathematical forms (e.g., equations, graphs, diagrams, tables, words)*	Skillfully converts relevant information into an insightful mathematical portrayal in a way that contributes to a further or deeper understanding.	Competently converts relevant information into an appropriate and desired mathematical portrayal.	Completes conversion of information but resulting mathematical portrayal is only partially appropriate or accurate.	Completes conversion of information but resulting mathematical portrayal is inappropriate or inaccurate.
Application / Analysis: *Ability to make judgments and draw appropriate conclusions based on the quantitative analysis of data, while recognizing the limits of this analysis*	Uses the quantitative analysis of data as the basis for deep and thoughtful judgments, drawing insightful, carefully qualified conclusions from this work.	Uses the quantitative analysis of data as the basis for competent judgments, drawing reasonable and appropriately qualified conclusions from this work.	Uses the quantitative analysis of data as the basis for workmanlike (without inspiration or nuance, ordinary) judgments, drawing plausible conclusions from this work.	Uses the quantitative analysis of data as the basis for tentative, basic judgments, although is hesitant or uncertain about drawing conclusions from this work.
Assume and Evaluate: *Ability to make and evaluate important assumptions in estimation, modeling, and data analysis*	Explicitly describes assumptions and provides compelling rationale for why assumptions are appropriate. Shows awareness that confidence in final conclusions is limited by the accuracy of the assumptions.	Explicitly describes assumptions and provides compelling rationale for why assumptions are appropriate.	Explicitly describes assumptions.	Attempts to describe assumptions.
	Calculations are successful and comprehensive to solve the problem and elegantly stated.	Calculations are successful and comprehensive to solve the problem	Calculations attempted are either unsuccessful or represent only a portion of the calculations required to comprehensively solve the problem.	Calculations are unsuccessful and not comprehensive to solve the problem.
Synthesize: *Expressing quantitative evidence in support of the argument or purpose of the work (in terms of what evidence is used and how it is formatted, presented, and contextualized)*	Uses quantitative information in connection with the argument or purpose of the work, presents it in an effective format, and explicates it with consistently high quality.	Uses quantitative information in connection with the argument or purpose of the work, though data may be presented in a less than completely effective format or some parts of the explication may be uneven.	Uses quantitative information, but does not effectively connect it to the argument or purpose of the work.	Presents an argument for which quantitative evidence is pertinent, but does not provide adequate explicit numerical support. (May use quasi-quantitative words such as "many," "few," "increasing," "small," and the like in place of actual quantities.)

Outcome #1

Students will be able to produce college-level writing that clearly communicates ideas through skills of observation, summary, synthesis, and analysis, reflective of critical thinking skills.

	Not Meeting (1)	Approaching (2)	Meeting (3)	Exceeding (4)
Thesis/Focusing Claim	Writer fails to present a controlling purpose or thesis; consequently it is difficult or impossible to identify the central idea. No evidence reflective of critical thinking.	Writer presents a wandering, vague, or unfocused controlling idea or thesis with little complexity reflective of critical thinking.	Writer presents an identifiable and focused controlling idea or thesis with some complexity reflective of critical thinking.	Writer presents an easily identifiable, focused, controlling idea or thesis with significant complexity reflective of critical thinking.
Organization and Development	Writer moves from an unsatisfactory introduction to an unsatisfying ending, thus conveying the sense that much of what has been presented is unresolved.	Writer moves awkwardly from a weak introduction to an unsatisfactory conclusion. Basic paragraphing exists, but often fails to support or even recognize a central idea, and the use of evidence and examples is inadequate. Sentence and paragraph transitions are often unclear, awkward, indirect, and/or illogical.	Writer moves coherently and logically from a satisfying introduction to a solid conclusion. Paragraphs fit within this structure and present examples and evidence to support the ideas presented. For the most part, sentences are well constructed and transitions are sound—though the sequence of ideas may occasionally be awkward.	Writer moves logically and coherently and from an engaging introduction to a well-demonstrated conclusion. Paragraphs fit within this structure coherently and present pertinent examples and evidence to support central and subsidiary ideas. Sentence structure displays sophistication and variety; transitions add to the logical development of the topic.
Evidence	Writer rarely or never presents examples and/or evidence to support ideas. Writer is inconsistent with citations or does not cite sources at all. Evidence of critical thinking about sourcework is absent.	Writer infrequently draws on, presents, and/or contextualizes examples and evidence to support ideas. Writer is inconsistent with citations. Minimal evidence of critical thinking about sourcework.	Writer generally draws on, presents, and contextualizes examples and evidence to support ideas, using appropriate citations, with some inconsistency. Some evidence of critical thinking about sourcework.	Writer draws on, presents, and contextualizes pertinent examples and evidence to support ideas, using appropriate citations. Significant evidence of critical thinking about sourcework.
Rhetorical Considerations	Tone, diction, and word choice are not appropriate for the subject or audience. Writing rarely or never follows a consistent system for basic organization and presentation appropriate to a specific discipline and/or writing task(s).	Tone and diction are often inconsistent and/or inappropriate for the subject or audience.	Writing exhibits some degree of control over the tone and diction appropriate for the subject or audience. Writing demonstrates consistent use of important conventions particular to a specific discipline and/or writing task(s), including organization, content, presentation, and stylistic choices.	Writing exhibits a solid command of word variety and a tone and diction appropriate for the subject or audience. Writing demonstrates detailed attention to and successful execution of a wide range of conventions particular to a specific discipline and/or writing task(s) including organization, content, presentation, formatting, and stylistic choices.
(Attention to Audience, Context, Purpose)		Writing sometimes follows expectations appropriate to a specific discipline and/or writing task(s) for basic organization, content, and presentation.		
Mechanics	Mechanics (grammar, punctuation, spelling and documentation) disrupt reading and often obscure meaning.	Mechanics (grammar, punctuation, spelling and documentation) are not well executed and may, at times, obscure meaning.	The writing exhibits some degree of control over the tone and diction appropriate for the subject and its implied audience.	Mechanics (grammar, punctuation, spelling and documentation) are error free.

Some details adapted from the Association of American Colleges and Universities (AACU)

Outcome #2

Students will be able to demonstrate fluency in a writing process that includes drafting; revising; editing; peer and instructor feedback; and self-evaluation.

	Not Meeting (1)	Approaching (2)	Meeting (3)	Exceeding (4)
Revision of Content, Focus, Structure	Writer demonstrates a lack of ability to revise at the level of content or structure. Either changes do not improve these features or are focused almost solely on mechanics.	Writer demonstrates a lack of ability to revise in any substantial way. Whatever revision has been done has not been sufficient to improve the content, focus, structure, clarity, and coherence of an earlier draft. Such revision may be limited to sections of the writing rather than to the work as a whole.	Writer demonstrates the ability to revise by refining the content, sharpening the focus, and improving structure, clarity, and coherence. Refining content may include clearer presentation of evidence, shifting of emphasis to foreground the most relevant material, providing improved transitions that keep the focus evident, and reworking the introduction or conclusion as well as rewriting individual sentences.	Writer demonstrates clear evidence of revision by altering content and approach, reorganizing material, and/or clarifying and strengthening the coherence of ideas. Revisions may include addition of new material; deletion of unhelpful material; substitution of more relevant material for less relevant material; strengthening of transitions, introductions, and conclusions; and rewriting of individual sentences.
Editing for Sentence-Level Correctness (Mechanics)	Mechanics (grammar, punctuation, spelling and documentation, if needed) are problematic and make it difficult or impossible to understand meaning.	Mechanics (grammar, punctuation, spelling and documentation, if needed) have problems and sometimes impede meaning.	Mechanics (grammar, punctuation, spelling and documentation, if needed) are mostly accurate and rarely impede meaning.	Mechanics (grammar, punctuation, spelling and documentation, if needed) of the final revision are nearly flawless.

Some details adapted from the Association of American Colleges and Universities (AACU)

Outcome #3

Students will be able to demonstrate the ability to locate, evaluate, and effectively integrate a range of relevant sources when composing an argument.

	Not meeting (1)	Approaching (2)	Meeting (3)	Exceeding (4)
Identification and Selection of Appropriate Sources	Writer works with a very limited selection of sources, resulting in a polarized and/or shallow perspective on the topic. Sources neither satisfactorily support nor advance the argument.	Writer works with a limited selection of sources representing narrow perspectives on the topic. Sources somewhat support and advance the argument.	Writer works with a few sources representing a few perspectives on the topic. Sources generally support and advance the argument.	Writer works with a carefully selected range of relevant sources representing multiple perspectives on the topic, resulting in a rich researched argument. Sources clearly support and advance the argument.
Integration of Sources to Support Argument	Writer does not engage with researched texts. The writer demonstrates an inability to make decisions about when or where to quote, paraphrase, or summarize sources' ideas or information. The writer does not smoothly integrate source material, and does not provide signal phrases. The writer never, or only weakly, analyzes or challenges perspectives of the sources.	Writer works begins to engage with researched texts, but shows limited fluency in making decisions about when or where to quote, paraphrase, or summarize sources' ideas or information. The writer does not consistently integrate source material, and sometimes lacks signal phrases. The writer only minimally analyzes and/or challenges perspectives of the sources.	Writer works closely with researched texts and generally makes good decisions about when and where to quote, paraphrase, or summarize sources' ideas or information. The writer generally integrates source material smoothly, and uses signal phrases when appropriate. The writer shows evidence of analyzing and/or challenging perspectives of the sources.	Writer works closely with researched texts and makes adept and appropriate decisions about when and where to quote, paraphrase, or summarize sources' ideas or information. The writer consistently integrates source material seamlessly, and always uses signal phrases when appropriate. The writer clearly analyzes and/or challenges perspectives of the sources in a thoughtful, thorough manner.

Some details adapted from the Association of American Colleges and Universities (AACU)

Outcome #4

Students will be able to demonstrate the ability to prepare and present an oral presentation with attention to audience, context, and purpose.

	Not meeting (1)	Approaching (2)	Meeting (3)	Exceeding (4)
Content	Central message is unclear and undeveloped. Insufficient supporting details (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) greatly reduces presenter's credibility. Consideration of audience, context, and purpose is absent.	Central message is basic and not memorable. Minimal use of supporting details (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) somewhat reduces presenter's credibility. Consideration of audience, context, and purpose is somewhat apparent.	Central message is clear and consistent with the supporting material. Supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) make appropriate reference to information or analysis that generally establishes the presenter's credibility/authority on the topic. Consideration of audience, context, and purpose is apparent.	Central message is compelling (precisely stated, appropriately repeated, memorable, and strongly supported.) A variety of types of supporting materials (explanations, examples, illustrations, statistics, analogies, quotations from relevant authorities) significantly support the presentation. Consideration of audience, context, and purpose is very apparent.
Organization	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is not observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is intermittently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable within the presentation.	Organizational pattern (specific introduction and conclusion, sequenced material within the body, and transitions) is clearly and consistently observable and is skillful and makes the content of the presentation cohesive.
Delivery	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) detract from the understandability of the presentation, and speaker appears uncomfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation understandable, and speaker appears tentative.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation interesting, and speaker appears comfortable.	Delivery techniques (posture, gesture, eye contact, and vocal expressiveness) make the presentation compelling, and speaker appears polished and confident.

Some details adapted from the Association of American Colleges and Universities (AACU)

Outcome #5

Students will be able to demonstrate the ability to evaluate and provide meaningful feedback on presentations delivered by other students (peer evaluations) and by themselves (self-evaluations).

	Not meeting (1)	Approaching (2)	Meeting (3)	Exceeding (4)
Evaluation of Others	Student provides little or no constructive feedback with respect to evaluation criteria (re: introduction, body, conclusion, style) when responding to presentations by peers.	Student provides minimal constructive feedback with respect to evaluation criteria (re: introduction, body, conclusion, style) when responding to presentations by peers.	Student provides thorough and thoughtful constructive feedback with respect to evaluation criteria (re: introduction, body, conclusion, style) when responding to presentations by peers.	Student provides rich constructive feedback with respect to evaluation criteria (re: introduction, body, conclusion, style) when responding to presentations by peers.
Self-Evaluation	Student provides little or no detail with respect to evaluation criteria (re: introduction, body, conclusion, style) when conducting self-evaluation.	Student provides minimal detail with respect to evaluation criteria (re: introduction, body, conclusion, style) when conducting self-evaluation.	Student provides thorough and thoughtful detail with respect to evaluation criteria (re: introduction, body, conclusion, style) when conducting self-evaluation.	Student provides rich detail with respect to evaluation criteria (re: introduction, body, conclusion, style) when conducting self-evaluation.

Technology and Information Literacy Rubric for Assessing Student Learning Outcomes

Criteria	Not meeting (1)	Approaching (2)	Meeting (3)	Exceeding (4)
Uses critical thinking skills to determine nature and extent of information needed to solve a problem.	Fails to identify a research question, key concepts, or idea of extent and depth of information needed. Little or no evidence of critical thinking skills.	Identifies an unfocused, unclear, or partial research question; some key concepts; and incomplete idea of extent and depth of information needed. Minimal evidence of critical thinking skills.	Identifies a clear and complete research question, a sufficient number of key concepts; and acceptable idea of extent and depth of information needed. Some evidence of critical thinking skills.	Identifies focused, clear, and complete research question; many key concepts; and clear idea of extent and depth of information needed. Strong evidence of critical thinking skills.
Effectively and efficiently accesses needed information using appropriate technologies.	Fails to retrieve relevant sources of information to fulfill the information need. Ignores appropriate technology, search tools, and methods.	Retrieves sources that generally lack relevance, quality, and balance. Primarily uses inappropriate technology, search methods, and tools.	Retrieves a sufficient number of relevant sources of information that fulfill the information need using appropriate technology, search tools, and methods.	Retrieves a variety of relevant sources of information that directly fulfill the information need using appropriate technology, search tools, and methods.
Critically evaluates information & credibility of its sources.	Fails to evaluate information from a limited number of questionable sources.	Mostly ignores or superficially evaluates information from some questionable sources.	Evaluates and analyzes information from a sufficient number of sources. Evaluation is sufficient.	Critically evaluates and analyzes information and its many and diverse sources. Evaluation is consistent and thoughtful.
Effectively uses information to accomplish a specific purpose.	Does not use relevant information. Fails to accomplish intended purpose. Does not draw conclusions. Fails to effectively communicate ideas.	Uses incomplete information and only partially accomplishes intended purpose. Draws incomplete conclusions. Inconsistently communicates ideas.	Uses appropriate information to accomplish purpose. Draws relevant conclusions. Synthesizes information from a sufficient number of sources. Effectively communicates ideas.	Demonstrates understanding of breadth and depth of research. Synthesizes and integrates information from a variety of sources. Draws meaningful conclusions. Clearly communicates ideas.
Ethically & Legally Accesses and Uses Information	Does not properly incorporate the ideas of others into assignment. Does not cite sources or copies sources without crediting authors.	Inconsistently incorporates the ideas of others into work. Incomplete citations.	Accurately builds on and incorporates the ideas of others into assignment. Correctly cites sources.	Consistently, thoughtfully, and accurately builds on and incorporates the ideas of others into assignment. Consistently and correctly cites sources.

Some details adapted from the Association of American Colleges and Universities (AACU)

Values, Ethics and Diverse Perspectives Rubric

Students should be able to:	Exceeding (4)	Meeting (3)	Approaching (2)	Not Meeting (1)
Demonstrate awareness and recognition of diverse cultures and values	Analyzes, adapts, or applies understanding of multiple worldviews, experieinces, and power structures incorporating multicultural perspectives to address signficant global problems	Identifies and describes experiences of others in historical and/or diverse contemporary contexts, demonstrating openness to varied cultures and worldviews	Identifies and describes experiences of others in narrow or stereotypical contexts, demonstrating limited understanding or openness to varied cultures and worldviews	Is not able to indentify or describe distinctions between other cultures or worldviews, either in historical terms or in contemporary contexts
Demonstrate an awareness and recognition of ethics as a set of behavioral guidelines for individuals, environmental professionals, and society at large	Discusses and analyzes core ethical beliefs and origins with depth and clarity in unfamiliar contexts as well as those applicable to common issues facing individuals and environmental professionals	Clearly articulates core ethical beliefs and their origins in settings typically applicable to common issues facing individuals and environmental professionals	occasionally able to identify and describe ethical behaviors and their origins applicable to common issues facing individuals and environmental professionals	unable to identify or articulate ethical responses to common issues facing individuals and environmental professionals
Apply ethical concepts and perspectives within the context of addressing problems in diverse personal, professional, or societal settings	Adapts and applies the experiences of others in historical or contemporary contexts, applying multiple cultural perspectives and worldviews, suggesting ethical interventions or solutions to significant global problems.	Considers the experiences of others as an integral part of identifying ethical responses to problems in historical or contemporary contexts, with demonstrated openness to varied cultures and world views.	Occasionally considers the experiences of others when applying ethical principles to problems, applying a limited degree of openness to varied cultures and worldviews.	Does not consider ethics in problem solving or decision making, or applies only a limited, parochial worldview, regardless of context

APPENDIX III.

Data, Analysis and Recommendations Table for Student Learning Outcomes

1. Scientific Reasoning

2. Quantitative Reasoning

3. Basic Communication Skills

4. Technological and Information Literacy

5. Values, Ethics and Diverse Perspectives

General Education Review Results

	Learning Outcomes	Products Evaluated	Goal of students Meeting and Exceeding	Total Papers (all)	Papers evaluated by Rubric	Rubric Analysis (Meeting or Exceeding)	Analysis	Recommendations
Scientific Reasoning	1. Demonstrate knowledge of the scientific method.	Capstone papers. Lecture Assignments and Exam and Quiz Questions - from the general education science courses	70%	229	226	67%	Some of the work evaluated here, were proposals were results and discussion is appropriately missing, so they were scored slightly lower.	Ask all majors to consider introducing experimental design earlier in the curriculum and to require that all students write a capstone paper either individually or as a part of a project team.
	2. Formulate and test hypotheses	Capstone Papers. Laboratory reports from the general education science courses.	70%	229	186	49%	Capstone papers generally showed good evidence of this, some of the data points here were done using general biology I course data and as such the expectation should be lower for this level.	
	3. Assess credibility and validity of scientific information***	Capstone Papers. Lab reports and Capstone papers - evaluate citations	70%	229	192	52%	Used General Biology data at this level 70% meeting and exceeding might be too high.	This was difficult for the reviewers to assess as it required knowledge of the field in many cases. Provide rubric to course and capstone instructors.
	4. Make informed decisions on contemporary issues demanding scientific literacy***	Final Exam Questions from General Chemistry I; Final Lab report in General Chemistry II; General Biology assignments on current events related to scientifc discoveries; capstone papers from	70%	229	89	80%	Data was only taken from one exam question on the general chemistry I final. Therefore the 80% rating is misleading.	Integrated general education courses that are focused on contemporary issues and that provided a global view of a problem would significantly increase our understanding of the true student success on these standards.
	5. Analyze and discuss the relationship between scientific discovery and society	FCH 150 Final Exam Questions	70%	229	41	70%	The sample size here is small, out of the 229 papers that were collected only 41 of them included anything that fit this standard.	

General Education Review Results

	Learning Outcomes	Products Evaluated	Goal of students Meeting and Exceeding	Total Papers (all)	Papers evaluated by Rubric	Rubric Analysis (Meeting or Exceeding)	Analysis	Recommendations
Quantitative Reasoning	1. Identify and Describe quantitative information symbolically, visually, numerically or verbally.	Exams , Projects, Labs, Fieldwork	70%	279	279	58%		Choose both a high, mid and low level problems for assessment
	2. Interpret quantitative information and draw inferences from them.	Exams , Projects, Labs, Fieldwork	70%	279	279	56%		
	3. Apply and Analyze problems with acquired quantitative reasoning and skills.	Exams , Projects, Labs, Fieldwork	70%	332	332	50%		Ask general education courses to submit final exam questions for review and ask capstone instructors to have students include calculations in their appendices.
	4. Synthesize and Evaluate problems within a specific discipline using quantitative reasoning.	Exams , Projects, Labs, Fieldwork	70%	279	279	43%		This expectation may be too high and so we need a lower expectation here.

General Education Review Results

	Learning Outcomes	Products Evaluated	Goal of students Meeting and Exceeding	Total Papers (all)	Papers evaluated by Rubric	Rubric Analysis (Meeting or Exceeding)	Analysis	Recommendations
Communication	1. Produce writing that clearly communicates ideas reflective of critical thinking skills.	Research Papers from General Education Courses, senior synthesis and capstone papers.	70%	58	57	73%	Goal Met	Collect papers electronically, word or searchable PDF format for greater efficiency in the review process.
	2. Demonstrate fluency in a writing process.	Research Papers from General Education Courses, senior synthesis and capstone papers.	70%	58	9	89%	Data here is misleading of the 58 papers collected only 9 showed evidence of the process used.	At the time assessment, committee needs to provide course instructors with rubrics to assess this throughout courses. Any course that has a writing assignment could contribute to this set of data.
	3. Demonstrate the ability to integrate relevant sources when composing an argument.	Research Papers from General Education Courses, senior synthesis and capstone papers.	70%	58	54	54%	This was expected to be better for capstones than for lower-level writing courses, this was not observed.	Students need practice in writing annotated bibliographies and illustrating how sources can help support or contrast with the points being made in the paper.
	4. Demonstrate the ability to prepare and present an oral presentation.	Research Papers from General Education Courses, senior synthesis and capstone papers.	70%	58	4	0%	insufficient data this year to do this	"At the time" assessment, committee needs to provide course instructors with rubrics to assess this at the time of the presentation. The annual Spotlight on Research could also be used for this analysis.
	5. Demonstrate the ability to evaluate and provide meaningful feedback on own and others work.	Research Papers from General Education Courses, senior synthesis and capstone papers.	70%	58	5	60%	insufficient data this year to do this	

General Education Review Results

	Learning Outcomes	Products Evaluated	Goal of students Meeting and Exceeding	Total Papers (all)	Papers evaluated by Rubric	Rubric Analysis (Meeting or Exceeding)	Analysis	Recommendations
Technology and Information Literacy	1. Use critical thinking skills to determine the nature and extent of the information needed to solve a problem.	Senior Synthesis or Capstone Projects	70%	44	44	82%		
	2. Effectively and efficiently access needed information using appropriate technologies.	Senior Synthesis or Capstone Projects	70%	44	0	0%	Unable to assess this aspect from finished projects. This needs to happen "at the time" of the action by course instructors. Use of software solutions that are appropraite to the discipline to solve discpiline specific problems.	ESF 200 may be a good vehicle for assessing this. Our library faculty could be provided with a rubric and asked to assess this throughout their courses and provide that information to the committee to include in the overall general education assessment.
	4. Effectively use information to accomplish a specific purpose	Senior Synthesis or Capstone Projects	70%	44	25	68%		
	5. Ethically and legally access and use information	Senior Synthesis or Capstone Projects	70%	58	48	64%	The committee felt that this was the "academic integrity" question, did they reference or cite appropriately.	We could also use the number of academic integrity violations that happen on an annual basis surrounding incorrect citation for this outcome in addition to the final papers.

General Education Review Results

	Learning Outcomes	Products Evaluated	Goal of students Meeting and Exceeding	Total Papers (all)	Papers evaluated by Rubric	Rubric Analysis (Meeting or Exceeding)	Analysis	Recommendations
Values, Ethics and Diverse Perspectives	1. Demonstrate awareness and recognition of diverse cultures and ways of thinking and knowing	Capstone projects, Senior Synthesis projects (random sample of 40) representative of various majors	70%	30	14	64%	Sample sizes were almost too small to be able to say more than some of our students are being exposed to this outcome.	General Education course sequences that ensure that every student is exposed to diversity and an opportunity to engage with different cultures (US or abroad).
	2. Demonstrate recognition of ethical issues throughout society.	Capstone projects, Senior Synthesis projects (random sample of 40) representative of various majors	70%	30	14	71%	Sample sizes were almost too small to be able to say more than some of our students are being exposed to this outcome.	Increase community engagement, offer courses in professional ethics and training, design a program with intenionality toward societal issues.
	3. Apply ethical concepts to diverse personal, professional or societal settings.	Capstone projects, Senior Synthesis projects (random sample of 40) representative of various majors	70%	30	14	57%	Sample sizes were almost too small to be able to say more than some of our students are being exposed to this outcome.	

Academic Program Assessment Appendix A

Program Assessment Plans

Page capture from TracDat – Showing Program Learning Outcomes
PLOs link to measures, results, and actions to be taken following analysis

One page per report is captured in this Appendix

Full Plans are available on the ESF TracDat system which will be available to review team as desired during visit

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Selected Unit: Program (CHEM) - Chemistry BS

Home | Program | Program Assessment Plan | Results | Reports | Documents

Program Learning Outcomes | Measures | Related Courses | Related Items

Program (CHEM) - Chemistry BS > Program Assessment Plan > Program Learning Outcomes

Hands-on Skills 12-13	Hands-on skills and knowledge of safe practices in the experimental and instrumental aspects of chemistry through laboratory course experiences and independent research projects.	Completed
Competency in Tools 12-13	Competencies in the various tools required for the successful practice of chemistry: math, statistics, computer applications, information technology, etc, including the ability to critically evaluate the chemical literature as applied to their disciplines and to analyze data using appropriate tools.	Completed
Communication Skills 12-13	The ability to communicate effectively orally and in writing to both technical and general audiences.	Completed
Application & Critical Thinking 12-13	The ability to effectively apply fundamental chemical principles and critical thinking in achieving the objectives of an integrative experience such as an internship or independent research project.	Active
Awareness of impacts 12-13	An advanced awareness of the ethical impact of chemical science upon society and the global environment.	Completed
Fundamental Chemistry Principles 13-14	A sound understanding of the fundamental chemical principles and underlying theories in the core areas of chemistry (analytical, organic, inorganic, physical) with an emphasis on critical thinking and problem-solving.	Completed
Fundamental Principles in Specialties 13-14	A sound understanding of the fundamental chemical principles, underlying theories, and applications of one of the departmental specialties (biochemistry/natural products, environmental, polymer).	Active
Hands-on Skills 13-14	Hands-on skills and knowledge of safe practices in the experimental and instrumental aspects of chemistry through laboratory course experiences and independent research projects.	Active
Competency in Tools 13-14	Competencies in the various tools required for the successful practice of chemistry: math, statistics, computer applications, information technology, etc, including the ability to critically evaluate the chemical literature as applied to their disciplines and to analyze data using appropriate tools.	Active
Communication Skills 13-14	The ability to communicate effectively orally and in writing to both technical and general audiences.	Active
Application & Critical Thinking 13-14	The ability to effectively apply fundamental chemical principles and critical thinking in achieving the objectives of an integrative experience such as an internship or independent research project.	Active
Awareness of impacts 13-14	An advanced awareness of the ethical impact of chemical science upon society and the global environment.	Active

Add New Program Learning Outcome

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Selected Unit: Program (ENS) - Environmental Science BS

Home | Program | Program Assessment Plan | Results | Reports | Documents

Program Learning Outcomes | Measures | Related Courses | Related Items

Program (ENS) - Environmental Science BS > Program Assessment Plan > Program Learning Outcomes

Program Learning Outcome Name	Program Learning Outcome	Outcome Status
Fundamental math and science knowledge 11-12	Demonstrate basic knowledge of fundamental concepts in math and science and the ability to apply them appropriately to a practical problem.	Active
Critical Thinking 11-12	Demonstrate ability to think critically and synthesize information across scientific and non-scientific disciplines in order to address complex problems.	
Communication 11-12	Effectively communicate scientific concepts, observations, and experimental results orally and in writing.	
Research ability 11-12	Demonstrate ability to plan and execute research relevant to the student's option area with faculty guidance	
Sustainability 11-12	Demonstrate ability to apply basic scientific process and concepts to environmental issues with a focus on sustainability	
Option Area: Environmental Information and Mapping 11-12	Demonstrate ability to collect, analyze, display, and interpret spatial data obtained via historical maps, surveying, and remote sensing techniques,	
Option Area: Health and the Environment 11-12	Demonstrate mastery and application of fundamental concepts in microbiology, genetics, anatomy, and physiology and their role in ecosystem function and animal (including human) health	
Option Area: Earth and Atmospheric Science 11-12	Demonstrate mastery of major concepts in Meteorology, Oceanography, and climate science	
Option Area: Watershed Science 11-12	Demonstrate knowledge of hydrologic processes on both local and global scales as well as the impacts of human activities on these processes	
Option Area: Renewable Energy 11-12	Demonstrate knowledge of methods of renewable energy generation and ways of increasing efficiency of energy use as well as an understanding of energy markets especially in relation to renewable energy	
Option Area: Environmental Analysis 11-12	Demonstrate knowledge of analytical methods applicable to environmental problems	
Fundamental math and science knowledge 12-13	Demonstrate basic knowledge of fundamental concepts in math and science and the ability to apply them appropriately to a practical problem.	

Add New Program Learning Outcome

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Selected Unit: Program (ERE) - Environmental Resources Engineering BS

Home | Program | Program Assessment Plan | Results | Reports | Documents

Program Learning Outcomes | Measures | Related Courses | Related Items

Program (ERE) - Environmental Resources Engineering BS > Program Assessment Plan > Program Learning Outcomes

	context	
ABET - i. 13-14	A recognition of the need for, and an ability to engage in life-long learning	Active
ABET - j. 13-14	A knowledge of contemporary issues	Active
ABET - k. 13-14	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice	Active
ABET - a. 14-15	An ability to apply knowledge of mathematics, science, and engineering	Active
ABET - b. 14-15	An ability to design and conduct experiments, as well as to analyze and interpret data	Active
ABET - c. 14-15	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	Active
ABET - d. 14-15	An ability to function on multi-disciplinary teams	Active
ABET - e. 14-15	An ability to identify, formulate, and solve engineering problems	Active
ABET - f. 14-15	An understanding of professional and ethical responsibility.	Active
ABET - g. 14-15	An ability to communicate effectively	Active
ABET - h. 14-15	The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context	Active
ABET - i. 14-15	A recognition of the need for, and an ability to engage in life-long learning	Active
ABET - j. 14-15	A knowledge of contemporary issues	Active
ABET - k. 14-15	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice	Active

Add New Program Learning Outcome

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Selected Unit: Program (ES) - Environmental Studies BS

Home | Program | Program Assessment Plan | Results | Reports | Documents

Program Learning Outcomes | Measures | Related Courses | Related Items

Program (ES) - Environmental Studies BS > Program Assessment Plan > Program Learning Outcomes

Critical Thinking 12-13	Demonstrate critical thinking skills in relation to environmental affairs	Active
Communication 12-13	Demonstrate knowledge and application of communication skills and the ability to write effectively in a variety of contexts.	Active
Interdisciplinary Synthesis 12-13	Demonstrate an ability to integrate the many disciplines and fields that intersect with environmental concerns.	Active
Ecological Literacy 12-13	Demonstrate an awareness, knowledge, and appreciation of the intrinsic values of ecological processes and communities.	Active
Sustainability 12-13	Demonstrate an integrative approach to environmental issues with a focus on sustainability.	Active
Critical Thinking 13-14	Demonstrate critical thinking skills in relation to environmental affairs	Active
Ecological Literacy 13-14	Demonstrate an awareness, knowledge, and appreciation of the intrinsic values of ecological processes and communities.	Active
Sustainability 13-14	Demonstrate an integrative approach to environmental issues with a focus on sustainability.	Active
Interdisciplinary Synthesis 13-14	Demonstrate an ability to integrate the many disciplines and fields that intersect with environmental concerns.	Active
Communication 13-14	Demonstrate knowledge and application of communication skills and the ability to write effectively in a variety of contexts.	Active
Critical Thinking 14-15	Demonstrate critical thinking skills in relation to environmental affairs	Active
Sustainability 14-15	Demonstrate an integrative approach to environmental issues with a focus on sustainability.	Active
Interdisciplinary Synthesis 14-15	Demonstrate an ability to integrate the many disciplines and fields that intersect with environmental concerns.	Active
Ecological Literacy 14-15	Demonstrate an awareness, knowledge, and appreciation of the intrinsic values of ecological processes and communities.	Active
Communication 14-15	Demonstrate knowledge and application of communication skills and the ability to write effectively in a variety of contexts.	Active

Add New Program Learning Outcome

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Selected Unit: Program (FNRM) - Forest Ecosystem Science BS

Home | Program | Program Assessment Plan | Results | Reports | Documents

Program Learning Outcomes | Measures | Related Courses | Related Items

Program (FNRM) - Forest Ecosystem Science BS > Program Assessment Plan > Program Learning Outcomes

	c) Exhibit tolerance for different viewpoints and opinions. d) Recognize values and value systems used to reach decisions and to take actions.	
Solve Problems 13-14	a) Define a problem. b) Determine cause of the problem. c) Identify, prioritize and select alternatives for a solution (e.g., strategic, tactical and operational planning). d) Implement a solution. e) Explain the conceptual framework of each problem-solving step. f) Facilitate a team through a systematic process for problem-solving.	Active
Lead 13-14	a) Recognize and explain the union between leading and following. b) Demonstrate effective teamwork skills.	Active
Understand Forest Ecosystems 14-15	a) Identify the major species, both flora and fauna, in a given area (P: FOR304, EFB336; S: FOR332, FOR334). b) Describe relationships among flora and fauna including the biological and physical requirements (P: FOR304; S: FOR232, FOR323, FOR345, FOR490).	Active
Describe and Analyze Forest Ecosystems 14-15	a) Describe technical biological and ecological terms to different audiences using consistent and accurate terminology (P: FOR304, FOR322, FOR332; S: FOR232, FOR490). b) Plan, conduct, analyze forest inventories, including biological, physical, and social characteristics, using different statistical sampling methods, and communicate results in both written and oral form (P: FOR322, FOR490; S: ESF300). c) Explain forest development in both written and oral form and apply computer growth and yield models to project stand and forest development (P: FOR334, S: FOR322, FOR323).	Active
Analyze Factors Influencing Forest Ecosystems Dynamics 14-15	a) Identify, describe and explain to different audiences in both written and oral form how natural and anthropogenic factors affect forest ecosystem dynamics (P: FOR332; FOR334). b) Explain the conceptual framework and systematic process for problem solving and demonstrate effective teamwork skills and ethics (P: FOR490, S: FOR360).	Active
Describe Influence of Government Policies 14-15	a) Explain how U.S. and state government policies influence the management of forest resources on public and private lands (P: FOR465). b) Describe how government policies impact management opportunities (P: FOR490).	Active

Add New Program Learning Outcome

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Selected Unit: Program (FNRM) - Forest Resources Management BS

Home | Program | Program Assessment Plan | Results | Reports | Documents

Program Learning Outcomes | Measures | Related Courses | Related Items

Program (FNRM) - Forest Resources Management BS > Program Assessment Plan > Program Learning Outcomes

Solve Problems 13-14	a) Define a problem. b) Determine cause of the problem. c) Identify, prioritize and select alternatives for a solution (e.g., strategic, tactical and operational planning). d) Implement a solution. e) Explain the conceptual framework of each problem-solving step. f) Facilitate a team through a systematic process for problem-solving.	Active
Lead 13-14	a) Recognize and explain the union between leading and following. b) Demonstrate effective teamwork skills.	Active
Understand Forest Ecosystems 14-15	a) Identify the major species, both flora and fauna, in a given area (P: FOR304, EFB336; S: FOR332, FOR334). b) Describe relationships among flora and fauna including the biological and physical requirements (P: FOR304; S: FOR232, FOR323, FOR333, FOR345, FOR370, FOR402, FOR490).	Active
Describe and Analyze Forest Ecosystems 14-15	a) Describe technical forestry terms to different audiences using consistent and accurate terminology (P: FOR304, FOR322; S: FOR232, FOR402, FOR373, FOR490). b) Plan, conduct, analyze forest inventories, including biological, physical, and social characteristics, using different statistical sampling methods, and communicate results in both written and oral form (P: FOR322; S: ESF300, FOR373, FOR490). c) Explain forest development in both written and oral form and apply computer growth and yield models to project stand and forest development (P: FOR334, S: FOR322, FOR323, FOR370).	Active
Analyze How Forest Resources Are Managed 14-15	a) Describe and explain to different audiences in both written and oral form alternative ways to change or maintain forest structure (P: FOR334; S: FOR370). b) Evaluate tradeoffs among biological sustainability, economic feasibility, and social acceptability with respect to alternative forest management plans (P: FOR333, FOR370; S: FOR360, FOR372, FOR402, FOR490). c) Explain the conceptual framework and systematic process for problem solving and demonstrate effective teamwork skills and ethics (P: FOR333; S: FOR370, FOR360, FOR490). d) Describe and apply appropriate decision-making tools and techniques to evaluate alternative forest management practices appropriate to ownership goals and objectives (P: FOR370; S: FOR334, FOR490).	Active
Describe Influence of Government Policies 14-15	a) Explain how U.S. and state government policies influence the management of forest resources on public and private lands (P: FOR465) b) Describe how government policies impact management opportunities (P: FOR490)	Active

Add New Program Learning Outcome

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Selected Unit: Program (FNRM) - Natural Resources Management BS

Home | Program | Program Assessment Plan | Results | Reports | Documents

Program Learning Outcomes | Measures | Related Courses | Related Items

Program (FNRM) - Natural Resources Management BS > Program Assessment Plan > Program Learning Outcomes

	d) Recognize values and value systems used to reach decisions and to take actions.		
Solve Problems 13-14	a) Define a problem b) Determining the cause of the problem c) Identify, prioritize and select alternatives for a solution (e.g., strategic, tactical and operational planning) d) Implement a solution. e) Explain the conceptual framework of each problem-solving step. f) Facilitate a team through a systematic process for problem-solving.	Active
Lead 13-14	a) Recognize and explain the union between leading and following. b) Demonstrate effective teamwork skills.	Active
Understand Natural Ecosystems 14-15	a) Identify the major species, both flora and fauna, in a given area (P: FOR304, LSA333; S: FOR321). b) Describe relationships among flora and fauna including the biological and physical requirements (P: FOR304; S: FOR232, FOR321, FOR340, FOR345, FOR490).	Active
Describe and Analyze Natural Ecosystems 14-15	a) Describe the similarities and differences among major categories natural resources ? i.e., soil, water, plants, wildlife and recreation (P: FOR304, FOR322; S: FOR232, FOR321, FOR490). b) Plan, conduct, analyze forest inventories, including biological, physical, and social characteristics, using different statistical sampling methods, and communicate results in both written and oral form (P: FOR322; S: ESF300, FOR490).	Active
Analyze How Natural Resources Are Managed 14-15	a) Describe and explain to different audiences in both written and oral form alternative ways to change or maintain natural resources, ecosystem functions and biodiversity (P: FOR321; S: FOR232). b) Evaluate tradeoffs among biological sustainability, economic feasibility, and social acceptability with respect to alternative management options (P: FOR321, FOR333, FOR372, FOR475, FOR490). c) Explain the conceptual framework and systematic process for problem solving and demonstrate effective teamwork skills and ethics (P: FOR333; S: FOR490). d) Describe and apply appropriate decision-making tools and techniques to evaluate alternative natural resources management practices appropriate to ownership goals and objectives (P: FOR490; S: FOR372, FOR475).	Active
Describe Influence of Government Policies 14-15	a) Describe how laws governing business and management influence both large and small natural resource organizations (P: FOR485). b) Explain how U.S. and state government policies influence the management of natural resources on public and private lands (P: FOR465, S: FOR490).	Active

Add New Program Learning Outcome

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Selected Unit: Program (FNRM) - Sustainable Energy Management BS

Home | Program | Program Assessment Plan | Results | Reports | Documents

Program Learning Outcomes | Measures | Related Courses | Related Items

Program Learning Outcome Name	Program Learning Outcome	Outcome Status
Describe and Analyze Energy Resources 14-15	a) Identify the major sources and uses of energy resources in the US and globally. Assess the sustainability of those energy resources in meeting future needs (P: ENS335). b) Analyze energy resources data including physical resource availability, economically available reserves and environmental factors (P: ENS325).	Active
Analyze How Energy Resources Are Managed 14-15	a) Describe alternative ways to manage energy resources to meet the needs of society and individuals (P: ENS325). b) Evaluate tradeoffs between sustainability, economic feasibility, and social acceptability for alternative energy resources (P: FOR333, ENS335). c) Explain the conceptual framework and systematic process for problem solving and demonstrate effective teamwork skills and ethics (P: FOR333). d) Describe and apply appropriate decision-making tools and techniques to human and / or energy resource management practices and problems (P: FOR454).	Active
Describe Influence of Government Policies 14-15	a) Describe how laws governing business and management influence how energy is managed and used in both large and small organizations (P: FOR485). b) Explain how U.S. and state government policies influence the management and use of energy resources in public and private settings (P: FOR465, ENS422).	Active

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Selected Unit: Program (LA) - Landscape Architecture BLA

Home | Program | Program Assessment Plan | Results | Reports | Documents

Program Learning Outcomes | Measures | Related Courses | Related Items

Program (LA) - Landscape Architecture BLA > Program Assessment Plan > Program Learning Outcomes

Program Learning Outcome Name	Program Learning Outcome	Outcome Status
Assess & Incorporate Social/Cultural /Behavioral Factors	BLA graduates should be able to consider, assess, and incorporate a broad range of social, cultural, and behavioral factors into design and planning of the land.	Active
Assess & Incorporate Natural Factors	BLA graduates should be able to consider, assess, and incorporate a broad range of natural factors and processes, including climate, ecology, geology, soils, hydrology, and physiography into design and planning of the land.	Active
Political, Legal, Regulatory Concepts	BLA graduates should be able to consider, assess, and adapt to a variety of political, legal, and regulatory contexts for design.	Active
Draw Upon Precedents	BLA graduates should be able to consider and draw upon the precedents and typologies developed over the course of the history of art and design.	Active
Design Contexts and Forms	BLA graduates should be able to consider and assess the design context of a particular site, place, or region, and identify important design forms, patterns, and organizing structures.	Active
Work with 3-D Spaces	BLA graduates should be able to observe, record, and visualize the form and character of 3-dimensional spaces.	Active
Solve Problems	BLA graduates should be able to select, apply, and communicate an appropriate and defensible design process to address and solve a wide range of design and planning problems.	Active
Incorporation of Technical Considerations	BLA graduates should be able to incorporate significant technical considerations necessary for the implementation of site designs, including site grading, drainage and stormwater management, erosion control, soils design, design of pedestrian and vehicular circulation systems, parking design, incorporation of ADA/universal design requirements, incorporation of sustainable systems, and design of ecologically suitable/sustainable plantings.	Active
Materials and Structural Systems	BLA graduates should be able to consider, assess, and select appropriate materials and structural systems to implement design ideas.	Active
Communication	BLA graduates should be able to effectively communicate design ideas using appropriate methods and techniques (to clients, the public, and contractors), from concept development through construction documentation.	Active
Ethical Standards	BLA graduates should be both aware of, and comfortable adhering to the ethical standards of the profession of landscape architecture.	Active
Value Clients	BLA graduates, upon entering into professional work, should value the interests of the communities in which they practice, and society as a whole, as well as their individual clients.	Active
Stewardship	BLA graduates should feel a professional obligation to act as stewards of the land itself (considering all its ecological and biophysical complexity) in the course of their professional work.	Active

Add New Program Learning Outcome

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Selected Unit: Program (PBE) - Bioprocess Engineering BS

Home | Program | Program Assessment Plan | Results | Reports | Documents

Program Learning Outcomes | Measures | Related Courses | Related Items

Program (PBE) - Bioprocess Engineering BS > Program Assessment Plan > Program Learning Outcomes

ABET - l. Project: Ability to design and execute a project 12-14	the ability to design and execute a project	Completed
ABET - m. Hazards 12-14	An awareness of biohazard, reactive hazard and process safety	Completed
ABET - a. Knowledge 14-15	An ability to apply knowledge of mathematics, science, and engineering	Active
ABET - b. Experiments 14-15	An ability to design and conduct experiments, as well as to analyze and interpret data	Active
ABET - c. Design 14-15	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	Active
ABET - d. Teamwork 14-15	An ability to function on multi-disciplinary teams	Active
ABET - e. Problem-solving 14-15	An ability to identify, formulate, and solve engineering problems	Active
ABET - f. Ethics 14-15	An understanding of professional and ethical responsibility.	Active
ABET - g. Communication 14-15	An ability to communicate effectively	Active
ABET - h. Broad education 14-15	The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context	Active
ABET - i. Life-long learning 14-15	A recognition of the need for, and an ability to engage in life-long learning	Active
ABET - j. Contemporary issues 14-15	A knowledge of contemporary issues	Active
ABET - k. Engineering tools 14-15	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice	Active
ABET - l. Project: Ability to design and execute a project 14-15	the ability to design and execute a project	Active
ABET - m. Hazards 14-15	An awareness of biohazard, reactive hazard and process safety	Active

Add New Program Learning Outcome

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Selected Unit: Program (PBE) - Paper Engineering BS

Home | Program | Program Assessment Plan | Results | Reports | Documents

Program Learning Outcomes | Measures | Related Courses | Related Items

Program (PBE) - Paper Engineering BS > Program Assessment Plan > Program Learning Outcomes

ABET - l. Industrial Experience 12-14	an ability to worked in an industrial or research position within pulp, paper or related fields.	Completed
ABET - a. Knowledge 14-15	An ability to apply knowledge of mathematics, science, and engineering	Active
ABET - b. Experiments 14-15	An ability to design and conduct experiments, as well as to analyze and interpret data	Active
ABET - c. Design 14-15	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	Active
ABET - d. Teamwork 14-15	An ability to function on multi-disciplinary teams	Active
ABET - e. Problem-solving 14-15	An ability to identify, formulate, and solve engineering problems	Active
ABET - f. Ethics 14-15	An understanding of professional and ethical responsibility.	Active
ABET - g. Communication 14-15	An ability to communicate effectively	Active
ABET - h. Broad education 14-15	The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context	Active
ABET - i. Life-long learning 14-15	A recognition of the need for, and an ability to engage in life-long learning	Active
ABET - j. Contemporary issues 14-15	A knowledge of contemporary issues	Active
ABET - k. Engineering tools 14-15	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice	Active
ABET - l. Industrial Experience 14-15	an ability to worked in an industrial or research position within pulp, paper or related fields.	Active

Add New Program Learning Outcome

tracdat

Selected Unit: Program (PBE) - Paper Science BS

Home | Program | Program Assessment Plan | Results | Reports | Documents

Program Learning Outcomes | Measures | Related Courses | Related Items

Program (PBE) - Paper Science BS > Program Assessment Plan > Program Learning Outcomes

ABET - l. Industrial Experience 12-14	an ability to worked in an industrial or research position within pulp, paper or related fields.	Completed
ABET - a. Knowledge 14-15	An ability to apply knowledge of mathematics, science, and engineering	Active
ABET - b. Experiments 14-15	An ability to design and conduct experiments, as well as to analyze and interpret data	Active
ABET - c. Design 14-15	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	Active
ABET - d. Teamwork 14-15	An ability to function on multi-disciplinary teams	Active
ABET - e. Problem-solving 14-15	An ability to identify, formulate, and solve engineering problems	Active
ABET - f. Ethics 14-15	An understanding of professional and ethical responsibility.	Active
ABET - g. Communication 12-14_1	An ability to communicate effectively	Active
ABET - h. Broad education 14-15	The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context	Active
ABET - i. Life-long learning 14-15	A recognition of the need for, and an ability to engage in life-long learning	Active
ABET - j. Contemporary issues 14-15	A knowledge of contemporary issues	Active
ABET - k. Engineering tools 14-15	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice	Active
ABET - l. Industrial Experience 14-15	an ability to worked in an industrial or research position within pulp, paper or related fields.	Active

Add New Program Learning Outcome

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Selected Unit: Program (SCME) - Construction Management

Home | Program | Program Assessment Plan | Results | Reports | Documents

Program Learning Outcomes | Measures | Related Courses | Related Items

Program (SCME) - Construction Management > Program Assessment Plan > Program Learning Outcomes

management and delivery fundamentals	1. apply construction management fundamentals to successfully manage the delivery of construction projects within the contractually defined delivery system by completing a project on time, under budget, of desired quality in a safe manner	Active
manage materials	2. manage materials, equipment, cost and personnel in both office and field activities	Active
principles of sustainability	3. provide professional construction services that meet client needs while upholding the principles of sustainability as applied to the client?s project	Active
Communications skills	4. communicate in a professional manner through the development of writing skills, public speaking skills, and mastery of a variety of media and software applications; articulate what they have learned to be the best practice for each situation	Active
Documents and interpretation	5. read and interpret construction documents thereby having the ability to communicate with all project participants in a professional manner to deliver a successful construction project	Active
Construction materials	6. apply the proper use of construction materials in construction projects with consideration of sustainable construction; specify and procure materials that have the least adverse impact on the environment within project constraints and the construction contract; implement practices that can serve to better our environment such as best and most efficient use and reuse of materials, and development and use of alternative energy sources	Active
maintain currency of codes, laws, requirements	7. maintain currency in the field including requirements for the successful delivery of construction projects, rating systems for sustainable construction projects, awareness of new materials, codes, and construction law	Active
ethics and professional responsibility	8. understand professional responsibility and ethics in construction management, including the need to look out for the public interest, and to deliver service that includes responsible, fair, and unbiased input to the client in accordance with current professional practice	Active
stewardship of environment	9. understand and promote stewardship of both the natural and the designed environments (from ESF Mission Statement) through best professional practice of sustainable construction management and engineering, and material utilization	Active
promote life long learning	10. Promote life long learning in the profession	Active

Add New Program Learning Outcome

Academic Program Assessment Appendix B

Program Assessment Cyclical Analysis Reports

Page capture from TracDat – Showing report of analysis of 2009-2012 assessment data, including actions to be taken

One page per report is captured in this Appendix
Full Plans are available on the ESF TracDat system which will be available to review team as desired during visit

Supporting documentation for Tables 2 and 3

Program Assessment Report - 4 Column

SUNY - College of Environmental Science and Forestry

Program (CHEM) - Chemistry BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (CHEM) - Chemistry BS - Fundamental Chemistry Principles 11-12 - A sound understanding of the fundamental chemical principles and underlying theories in the core areas of chemistry (analytical, organic, inorganic, physical) with an emphasis on critical thinking and problem-solving. **Outcome Year(s):** 2011 - 2012 **Start Date:** 05/25/2010 **Outcome Status:** Inactive	**Measurement Scale:** Course grade of C+ or better in FCH 150-153, FCH 221-224, FCH 360-361, and FCH 380-381. **Assessment Method:** Course Grade **Target:** 80% of students at C+ or better **Rubric:** No rubric used	11/16/2012 - The target was met in just over half the courses for which results were reported in Academic Years 2010-11 and 2011-12. **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** December 2012 Report **Related Documents:** 2011-12 Academic Year Core Courses.docx 2010-11 Academic Year Core Courses.docx Template for Revised Learning Outcomes.docx	12/05/2012 - Assessment via grades does not provide information on how to improve instruction, and thereby avoids the purpose of assessment. Assessment must be revised to determine what topics students are learning well versus less well. A document has been drafted as a result of discussions with Valerie Luzadis, Assistant Provost for Assessment and Academic Initiatives, to point the way towards a better assessment plan. This plan will need to be the subject of much work, including deciding which specific topics to assess from our core and specialized courses and the development of rubrics.
	Measurement Scale: Standardized exams designed by the American Chemical Society in General Chemistry and Inorganic Chemistry **Assessment Method:** Exam/Quiz - Standardized **Target:** Class average and median above national average and median **Rubric:** No rubric used	12/10/2012 - Chemistry majors averaged in the 67th percentile on the ACS standard exam in General Chemistry. In 2010, Chemistry majors averaged in the 70th percentile on the ACS standard exam in Inorganic Chemistry. In 2012, the scores averaged the 45th percentile. **Target Met:** Evaluation - Met Target **Reporting Period:** December 2012 Report	01/03/2013 - With regards General Chemistry: Starting in Fall 2013, a one-semester terminal General Chemistry course was instituted for students in CMWPE and 2 of 3 FNRM majors. These students (roughyl 30% of the total) typically struggled in General Chemistry I, and their presence slowed the overall pace of the course and limited the depth of the course to some degree. Without these student in the General Chemistry I, all students in this course, including

Program Assessment Report - 4 Column

SUNY - College of Environmental Science and Forestry

Program (ENS) - Environmental Science BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (ENS) - Environmental Science BS - Fundamental math and science knowledge 11-12 - Demonstrate basic knowledge of fundamental concepts in math and science and the ability to apply them appropriately to a practical problem. **Outcome Year(s):** 2011 - 2012	**Measurement Scale:** Distribution of performance of Env Sci students in four required courses, EFB 101, APM 106, APM 391, and PHY 211, as measured by final grades and mean scores on the American Chemical Society General Chemistry Full Year Exam. **Assessment Method:** Course Grade **Target:** 80% meet or exceed the standard (3 or 4) **Rubric:** Rubric attached in Related Docs **Related Documents:** Rubric for assessing student grades.docx	11/26/2012 - EFB 101: 70% of students meet or exceed standard. APM 106: 91% of students meet or exceed standard APM 391: 100% of students meet or exceed standard PHY 211: 88% of students meet or exceed standard ACS test: 68% of students meet or exceed standard **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** December 2012 Report	
	Measurement Scale: Demonstration of understanding of fundamental mathematics and science concepts in Senior Synthesis project. INSERT RUBRIC **Assessment Method:** Capstone Assignment/Project **Target:** 80% of students meet or exceed standard (3 or 4 on rubric). **Rubric:** Rubric attached in Related Docs	06/18/2013 - 1a (Chemistry): 100 percent of students with applicable projects meet or exceed standard. 71% of student projects not applicable. 1b (Biology):100% of students with applicable projects meet or exceed standard. 71% of student projects not applicable. 1c (Physics): 100% of students with applicable projects meet or exceed standard. 50% of student projects not applicable. 1d (Calculus): 100% of students with applicable projects meet or exceed standard. 96% of student projects not applicable. 1e (Statistics): 80% of students with applicable projects meet or exceed standard. 64% of student projects not applicable. **Target Met:** Evaluation - Met Target **Reporting Period:** 2011 - 2012	06/18/2013 - The Senior Synthesis project has proven itself to be an unreliable assessment method for basic content concepts. Upper division concepts, especially those in the student's option area, can be assessed by this method. Fundamental concepts, especially those outside of the option area are not well evaluated by this method.
		11/30/2012 - 1a (Chemistry): 100 percent of students with applicable projects meet or exceed standard.	01/02/2013 - The use of capstone projects to evaluate student retention of content is problematic.

Program Assessment Report - 4 Column

SUNY - College of Environmental Science and Forestry

Program (ERE) - Environmental Resources Engineering BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (ERE) - Environmental Resources Engineering BS - ABET - a. 11-12 - An ability to apply knowledge of mathematics, science, and engineering **Outcome Year(s):** 2011 - 2012 **Start Date:** 08/01/2010 **Outcome Status:** Inactive **PLO Target Met?:** 3 - Met expectations	**Measurement Scale:** Exit Survey: Students were asked to indicate their agreement/disagreement level with the statement "I have the ability to apply knowledge of mathematics, science, and engineering." Strongly Agree (5 points) Agree (4 points) Neither Agree nor Disagree (3 points) Disagree (2 points) Strongly Disagree (1 point) **Assessment Method:** Survey of Students **Target:** Average score at or above 4.0 **Rubric:** No rubric used	05/01/2012 - Average = 4.8 **Target Met:** Evaluation - Met Target **Reporting Period:** 2011 - 2012	
	Measurement Scale: APM 395: Assessment considers the first four levels of Bloom's Taxonomy: Knowledge, Comprehension, Application and Analysis. Each level is assessed using a quantitative rubric of 0, 1, and 2 points. 2 points - student has fully achieved the expected performance criteria 1 point - some but limited ability to address the performance criteria 0 points - little or no ability to address the performance criteria. **Assessment Method:** Final Project **Target:** An average score of 1 should be obtained for each level **Rubric:** Rubric attached in Related Docs	06/01/2012 - Knowledge - Average = 1.4 Comprehension - Average = 1.5 Application - Average = 1.6 Analysis - Average = 1.5 **Target Met:** Evaluation - Met Target **Reporting Period:** 2011 - 2012	

Program Assessment Report - 4 Column

SUNY - College of Environmental Science and Forestry

Program (ES) - Environmental Studies BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (ES) - Environmental Studies BS - Critical Thinking 11-12 - Demonstrate critical thinking skills in relation to environmental affairs **Outcome Year(s):** 2011 - 2012 **Start Date:** 09/30/2009 **Outcome Status:** Inactive	**Measurement Scale:** Grades on assignment translated to 4-point Rubric As or 90%+=1 Bs or 80-89%=2 Cs or 70-79%=3 Ds or 60-69%=4 F or < 60% **Assessment Method:** Course Assignment **Target:** 80% will meet or exceed (3 or 4 on rubric) **Rubric:** Rubric attached in Related Docs	11/07/2012 - 93% met or exceeded (4 on rubric) **Target Met:** Evaluation - Met Target **Reporting Period:** 2011 - 2012 **Related Documents:** Data - Course Assignments 2011-12 EST 494 Survey Data UGAssessmentRubricwiPLO IdentifiedFINAL.xlsx	11/07/2012 - Continue course as is.
		10/17/2012 - EST 361 Critical Thinking Distribution of Assignment Grades Percentage Distribution of Grades Percentage Meeting/ Exceeding LO Percentage Working Toward Meeting LO Percentage Not Meeting LO As or 90%+ 17 28 75 20 5 Bs or 80-89% 28 47 Cs or 70-79% 12 20 Ds or 60-69% 2 3.3 F or < 60% 1 1.7 Total # Students 60 **Target Met:** Evaluation - Met Target **Reporting Period:** 2011 - 2012	11/26/2012 - Review all required courses for additional and/or better measures of critical thinking PLO. 10/23/2012 - EST 361 should be examined for possible adjustments to help improve critical thinking and/or selection and grading of assignment used to assess this PLO should be adjusted to reflect the PLO. **Follow-Up:** 11/26/2012 - UG Program Committee to complete this. 11/26/2012 - Instructor will be asked to review and adjust syllabus and share with UG Program Committee.
	Measurement Scale: EST 132 Survey Results Question 4a-c Strongly Agree (5); Somewhat Agree(4); Agree(3); Somewhat Disagree(2); Strongly	11/29/2012 - More than 80% received 3 or better **Target Met:** Evaluation - Met Target	11/29/2012 - Continue program as is, but also work on developing a more precise survey instrument

Program Assessment Report - 4 Column

SUNY - College of Environmental Science and Forestry

Program (FNRM) - Forest Ecosystem Science BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (FNRM) - Forest Ecosystem Science BS - Understand Forests 11-12 - Explain and interpret the relationships among flora and fauna including the biological and physical requirements of different plant and animal species within a forested ecosystem. **Outcome Year(s):** 2011 - 2012			
Program (FNRM) - Forest Ecosystem Science BS - Measure Forests 11-12 - a) Plan, conduct, and analyze forest inventories including biological, physical, and social-economic elements using appropriate statistical sampling methods. b) Identify the major species, both flora and fauna, in a given area correctly. c) Project stand and forest development using computer based and non-computer based growth and yield models. **Outcome Year(s):** 2011 - 2012			
Program (FNRM) - Forest Ecosystem Science BS - Manipulate Forests 11-12 - a) Describe alternative ways to change or maintain forest structure. b) Prescribe, justify, and implement treatments in accord with owner objectives. **Outcome Year(s):** 2011 - 2012			
Program (FNRM) - Forest Ecosystem Science BS - Manage Forests 11-12 - a) Evaluate tradeoffs among biological			

Program Assessment Report - 4 Column

SUNY - College of Environmental Science and Forestry

Program (FNRM) - Forest Resources Management BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (FNRM) - Forest Resources Management BS - Understand Forests 11-12 - Explain and interpret the relationships among flora and fauna including the biological and physical requirements of different plant and animal species within a forested ecosystem. **Outcome Year(s):** 2011 - 2012 **Outcome Status:** Inactive			
Program (FNRM) - Forest Resources Management BS - Manipulate Forests 11-12 - a) Describe alternative ways to change or maintain forest structure. b) Prescribe, justify, and implement treatments in accord with owner objectives. **Outcome Year(s):** 2011 - 2012 **Outcome Status:** Inactive			
Program (FNRM) - Forest Resources Management BS - Measure Forests 11-12 - a) Plan, conduct, and analyze forest inventories including biological, physical, and social-economic elements using appropriate statistical sampling methods. b) Identify the major species, both flora and fauna, in a given area correctly. c) Project stand and forest development using computer based and non-computer based growth and yield models. **Outcome Year(s):** 2011 - 2012			

Program Assessment Report - 4 Column

SUNY - College of Environmental Science and Forestry

Program (FNRM) - Natural Resources Management BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (FNRM) - Natural Resources Management BS - Understand Natural Environments 11-12 - Explain and interpret the relationships among organic and inorganic resources, including the biological and physical requirements of different plant and animal species, within forest and watershed ecosystems, and how humans interact with these resources. **Outcome Year(s):** 2011 - 2012 **Outcome Status:** Completed **PLO Target Met?:** 3 - Met expectations	**Measurement Scale:** 1 = Not meeting expectations 2 = Working towards meeting expectations 3 = Meets expectations 4 = Exceeds expectations **Assessment Method:** Capstone Assignment/Project **Rubric:** No rubric used	02/04/2015 - 3 = Meets expectations **Target Met:** No Evaluation - Data Point **Reporting Period:** 2011 - 2012 **Related Documents:** FOR490 Capstone Course	02/04/2015 - No action required
Program (FNRM) - Natural Resources Management BS - Measure Natural Resources 11-12 - a) Identify the major species, both flora and fauna, in a given area correctly. b) Assess the extent of human impacts on forests, watersheds, and other natural areas. c) Plan, conduct, and analyze forest and watershed ecosystem and/or natural area inventories, including biological, physical, and social resources. d) Describe and apply different statistical sampling methods to user groups, forests, watersheds and/or natural areas. **Outcome Year(s):** 2011 - 2012 **Outcome Status:** Completed **PLO Target Met?:**	**Measurement Scale:** 1 = Not meeting expectations 2 = Working towards meeting expectations 3 = Meets expectations 4 = Exceeds expectation **Assessment Method:** Capstone Assignment/Project **Rubric:** No rubric used	02/04/2015 - 2 = Working towards meeting expectations **Target Met:** Evaluation - Met Target **Reporting Period:** 2011 - 2012 **Related Documents:** NRM Curriculum Proposal 1 NRM Curriculum Proposal 2	02/04/2015 - Revised NRM curriculum. See NRM Curriculum Proposal.

Program Assessment Report - 4 Column

SUNY - College of Environmental Science and Forestry

Program (LA) - Landscape Architecture BLA

Program Assessment Report - 4 Column

SUNY - College of Environmental Science and Forestry

Program (PBE) - Bioprocess Engineering BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (PBE) - Bioprocess Engineering BS - ABET - a. Knowledge 11-12 - An ability to apply knowledge of mathematics, science, and engineering **Outcome Year(s):** 2011 - 2012 **Outcome Status:** Inactive	**Measurement Scale:** 4 - Exemplary 3 - Proficient 2 - Apprentice 1 - Novice **Assessment Method:** Presentation/Performance **Target:** At least 85% of the student work is at least at Proficient level (or 3). **Rubric:** Rubric attached in Related Docs **Related Documents:** Table 4-25.docx	11/16/2012 - 169 evaluated at Exemplary, 92 evaluated at Proficient, 31 evaluated at Apprentice and 2 evaluated at Novice. 88.8% meet at least Proficient level (3). **Target Met:** Evaluation - Met Target **Reporting Period:** 2011 - 2012 **Related Documents:** Table 4-25.docx	11/19/2012 - There is no action planned for this outcome.
	Measurement Scale: 4 - Exemplary 3 - Proficient 2 - Apprentice 1 - Novice **Assessment Method:** Lab Project **Target:** At least 85% of the student work is at least at Proficient level (or 3). **Rubric:** Rubric attached in Related Docs **Related Documents:** Table 4-39.docx	11/19/2012 - In leading a group, Table 4-39 infer that 65 out of 67 evaluations or 97% were assessed to be able to gather background information. **Target Met:** Evaluation - Met Target **Reporting Period:** 2011 - 2012 **Related Documents:** Table 4-39.docx	11/19/2012 - There is no actions planned for this outcome.
	Measurement Scale: 4 - Exemplary 3 - Proficient 2 - Apprentice 1 - Novice **Assessment Method:** Lab Project **Target:**	11/19/2012 - In a team, Table 4-40 infer that 68 out of 74 evaluations or 92% were assessed to be able to learn from the project. Therefore, the outcome is achieved. **Target Met:** Evaluation - Met Target **Reporting Period:** 2011 - 2012	11/19/2012 - There is no action planned for this outcome.

Program Assessment Report - 4 Column

SUNY - College of Environmental Science and Forestry

Program (PBE) - Paper Engineering BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (PBE) - Paper Engineering BS - ABET - a. Knowledge 11-12 - An ability to apply knowledge of mathematics, science, and engineering **Outcome Year(s):** 2011 - 2012 **Outcome Status:** Inactive	**Measurement Scale:** %, An exam is given at the first day of class in PSE 370 (Mass and energy balances) that covers general chemistry, physics, and calculus for the PSE 370 course. The exam should help students identify their deficiencies and prepare them for the upcoming assignments in the course. **Assessment Method:** Exam/Quiz - In Course **Target:** We expect that 80% of the students will score 75% or above on the exam. We expect all students to score 60% or above. **Rubric:** No rubric used	11/20/2012 - PSE 370 Prerequisite Exam (a): Chemistry Physics, Calculus Year Students Average Above 75% Above 60% Benchmark score 80% 100% 2007 10 60.9% 20% 50% 2008 25 77.8.% 60% 84% 2009 34 80.8.% 59% 82% 2010 24 79.9% 63% 100% 2011 37 85.6% 86% 95% 2012 N/A N/A% The prerequisite exam in PSE 370 serves multiple purposes. First of all, it identifies to students those areas in which a review of basic material may be needed. It also serves to inform students more strongly of the expectations of knowledge going into the class. In general, students over the past five (5) years have been prepared for PSE 370, which represents the first engineering course taken by most of the students. Over this time frame, only in 2011 and 2010 students exceeded the benchmark. No concerning weaknesses were found amongst all students, indicating that the Chemistry, Physics, and Calculus courses are appropriately preparing students for their engineering classes. Any systematic weaknesses would be communicated to the instructors of these courses, although this has not been necessary. **Target Met:** Evaluation - Met Target **Reporting Period:** 2011 - 2012	11/20/2012 - No action planned for this outcome.
	Measurement Scale: %, Pre-requisite exam in PSE 468. A quiz	11/20/2012 - PSE 468 Prerequisite Exam (a): Engineering calculations, Papermaking	

Program Assessment Report - 4 Column

SUNY - College of Environmental Science and Forestry

Program (PBE) - Paper Science BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (PBE) - Paper Science BS - ABET - a. Knowledge 11-12 - An ability to apply knowledge of mathematics, science, and engineering **Outcome Year(s):** 2011 - 2012 **Outcome Status:** Inactive	**Measurement Scale:** %, An exam is given at the first day of class in PSE 370 (Mass and energy balances) that covers general chemistry, physics, and calculus for the PSE 370 course. The exam should help students identify their deficiencies and prepare them for the upcoming assignments in the course. **Assessment Method:** Exam/Quiz - In Course **Target:** We expect that 80% of the students will score 75% or above on the exam. We expect all students to score 60% or above.	11/26/2012 - PSE 370 Prerequisite Exam (a): Chemistry Physics, Calculus Year Students Average Above 75% Above 60% Benchmark score 80% 100% 2007 10 60.9% 20% 50% 2008 25 77.8.% 60% 84% 2009 34 80.8.% 59% 82% 2010 24 79.9% 63% 100% 2011 37 85.6% 86% 95% 2012 N/A N/A% The prerequisite exam in PSE 370 serves multiple purposes. First of all, it identifies to students those areas in which a review of basic material may be needed. It also serves to inform students more strongly of the expectations of knowledge going into the class. In general, students over the past five (5) years have been prepared for PSE 370, which represents the first engineering course taken by most of the students. Over this time frame, only in 2011 and 2010 students exceeded the benchmark. No concerning weaknesses were found amongst all students, indicating that the Chemistry, Physics, and Calculus courses are appropriately preparing students for their engineering classes. Any systematic weaknesses would be communicated to the instructors of these courses, although this has not been necessary. **Target Met:** Evaluation - Met Target **Reporting Period:** 2011 - 2012	11/26/2012 - No action planned.
	Measurement Scale: %, Pre-requisite exam in PSE 468. A quiz was administered in the first week of the class to ensure general papermaking knowledge for the PSE 468 course. **Assessment Method:** Exam/Quiz - In Course **Target:**	11/26/2012 - PSE 468 Prerequisite Exam (a): Engineering calculations, Papermaking Knowledge Year Students Average Above 75% Above 60% Benchmark score 80% 100% 2007* 8 N/A N/A N/A N/A 2008** N/A N/A N/A N/A 2009 7 74.7 71.4% 71.4% 2010 10 75.8 40% 80% 2011 7 90.6 85.7% 100% 2012 11 87.4 90.9% 100% The prerequisite exam in PSE 468 serves multiple	11/26/2012 - No action planned.

Program Assessment Report - 4 Column

SUNY - College of Environmental Science and Forestry

Program (SCME) - Construction Management

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (SCME) - Construction Management - CPC Exam - Ability to successfully earn the designation of Associate Certified Professional Constructor (CPC) through passing the Associate Constructor examination, the initial step for earning the professional designation of Certified Professional Constructor (CPC) **Outcome Year(s):** 2011 - 2012 **Start Date:** 11/01/2009 **Inactive Date:** 07/31/2012 **Outcome Status:** Inactive **PLO Target Met?:** 3 - Met expectations	**Measurement Scale:** 4 Exceeding expectations > 80% pass rate 3 Meeting expectations > 70% pass rate 2 Approaching expectations > 60% pass rate 1 Not meeting expectations < 60% pass rate **Assessment Method:** Exam/Quiz - Standardized **Target:** 3 meeting expectations **Rubric:** Rubric attached in Related Docs **Related Documents:** Program objectives 2009-2012-Rubric for Standardized Exam Scores.xlsx	11/30/2012 - In 2011-12 the pass rate was 72%, higher than the national average of 70% This is an improvement over 2010-11 (68%) and 2009-10 (46%) **Target Met:** Evaluation - Met Target **Reporting Period:** 2011 - 2012	11/30/2012 - In 2008-09 there was a temporary change in instructor for three courses. This affected scores for several years. The scores improved after the former instructor was reinstated
		05/15/2011 - 68% pass rate **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2011 - 2012	11/18/2014 - see action and follow up for 1-15-2013
		05/15/2010 - 46% pass rate **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2011 - 2012	01/15/2013 - In 2008-09 there was a temporary change in instructor for three courses. This affected scores for several years. The scores improved after the former instructor was reinstated
Program (SCME) - Construction Management - Application of fundamentals - Knowledge of and ability to apply construction management fundamentals and sustainable practices to actual construction projects **Outcome Year(s):** 2011 - 2012 **Start Date:** 08/01/2009 **Inactive Date:** 07/31/2012 **Outcome Status:**	**Measurement Scale:** pass/fail **Assessment Method:** Capstone Assignment/Project **Target:** 95% pass rate **Rubric:** Rubric attached in Related Docs **Related Documents:** Program objectives 2009-2012-Rubric for Standardized Exam Scores.xlsx	05/15/2012 - 100% pass rate **Target Met:** Evaluation - Met Target **Reporting Period:** 2011 - 2012	11/18/2014 - The capstone course will continue to be taught in similar manner with similar capsotne assignment as it appears to be successful
		05/15/2011 - 98% pass rate **Target Met:** Evaluation - Met Target **Reporting Period:** 2011 - 2012	11/18/2014 - Students continue to do well on the capstone assignment

Academic Program Assessment Appendix C

Program Assessment Data Collection Reports

Page capture from TracDat - PLOs, Measures and Targets and Results for each PLO for 2012-13, 2013-14 and 2014-15

***Important Note*: No actions are expected in these reports. We use the same report format for data collection in the years between cyclical analyses, therefore the actions column is intentionally blank.**

One page per report is captured in this Appendix
Full reports are available on the ESF TracDat system which will be available to review team as desired during visit

Program Assessment Report - 4 Column

SUNY - College of Environmental Science and Forestry

Program (CHEM) - Chemistry BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (CHEM) - Chemistry BS - Fundamental Chemistry Principles 12-13 - A sound understanding of the fundamental chemical principles and underlying theories in the core areas of chemistry (analytical, organic, inorganic, physical) with an emphasis on critical thinking and problem-solving. **Outcome Year(s):** 2012 - 2013 **Start Date:** 05/25/2010 **Outcome Status:** Inactive	**Measurement Scale:** Course grade of C+ or better in FCH 150-153, FCH 221-224, FCH 360-361, and FCH 380-381. **Assessment Method:** Course Grade **Target:** 80% of students at C+ or better	08/13/2013 - In seven of eleven courses for which data was reported our chemistry majors achieved a C+ or better. In three of the four courses in which this target was not met, it was nearly met (75% of students obtained C+ or better) . No data was obtained for FCH 381: Analytical Chemistry II, FCH 325: Organic Chemistry III, or FCH 384: Spectrometric Identification of Organic Compounds. **Target Met:** No Evaluation - Data Point **Reporting Period:** 2012 - 2013 **Related Documents:** 2013 Core courses plot.xlsx	
	Measurement Scale: Standardized exams designed by the American Chemical Society in General Chemistry and Inorganic Chemistry **Assessment Method:** Exam/Quiz - Standardized **Target:** Class average and median above national average and median	08/26/2013 - Data not collected. **Target Met:** No Evaluation - Data Point **Reporting Period:** 2012 - 2013	
	Measurement Scale: Evaluation of knowledge of Fundamental Chemical Principles in FCH 498 (Senior Research) 1-5 scale 1=Poor 3=Average 5= Outstanding **Assessment Method:** Capstone Assignment/Project **Target:** Average of 3.5	08/13/2013 - The average on the Research Proposal/Final Report was 3.7. **Target Met:** No Evaluation - Data Point **Reporting Period:** 2012 - 2013	

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (ENS) - Environmental Science BS - Fundamental math and science knowledge 12-13 - Demonstrate basic knowledge of fundamental concepts in math and science and the ability to apply them appropriately to a practical problem. **Outcome Year(s):** 2012 - 2013	**Measurement Scale:** Distribution of performance of Env Sci students in four required courses, EFB 101, APM 106, APM 391, and PHY 211, as measured by final grades and mean scores on the American Chemical Society General Chemistry Full Year Exam. **Assessment Method:** Course Grade **Target:** 80% meet or exceed the standard (3 or 4)	02/25/2015 - EFB 101:80% of students meet or exceed standard APM 106:100 % of students meet or exceed standard APM 391:88% of students meet or exceed standard ACS test data not available **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
		02/13/2015 - EFB 101:70% of students meet or exceed standards **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2012 - 2013	
		02/12/2015 - EFB 101 Fall 2012 70% meet or exceed standard(n=46) APM 106:Fall 2012 100% of the students meet or exceed standard (n=5) APM 106 Spring 2013:89% of the students meet or exceed standard (n=28) APM 391 Fall 2012 88% of the students meet or exceed standard(n=24) APM 391 Spring 2013:93% of the students meet or exceed standard (n= 14) PHY 211: Fall 2012:85% of the students meet or exceed standard(n=40) **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: Demonstration of understanding of fundamental mathematics and science		

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Demonstrate knowledge of hydrologic processes on both local and global scales as well as the impacts of human activities on these processes **Outcome Year(s):** 2012 - 2013	EFB 415 and FOR 340 as measured by final grades. **Assessment Method:** Course Grade **Target:** 80% of students meet or exceed standard **Rubric:** No rubric used	FOR 340:67% of students meet or exceed standard **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2012 - 2013	02/26/2015 - Note: The 2013-14 cohort report indicates that 100% of the students meet or exceed the standard. 02/26/2015 - We will monitor the results of the 13-14 through this sequence of courses to determine if a change of content sequence, or differentiated instruction activities are needed to support student learning.
	Measurement Scale: Performance of students on final written and performance requirements for senior synthesis project in ENS 494 course, evaluated for demonstration of content mastery. **Assessment Method:** Capstone Assignment/Project **Target:** 80% of students meet or exceed standard		
Program (ENS) - Environmental Science BS - Option Area: Renewable Energy 12-13 - Demonstrate knowledge of methods of renewable energy generation and ways of increasing efficiency of energy use as well as an understanding of energy markets especially in relation to renewable energy **Outcome Year(s):** 2012 - 2013	**Measurement Scale:** Distribution of performance of students in ENS 325, 335, and 422 as measured by final grades. **Assessment Method:** Course Grade **Target:** 80% of students meet or exceed standard	02/26/2015 - ENS 325:85% of students meet or exceed standard; ENS 335:89%of students meet or exceed standard; ENS 422:93% of students meet or exceed standard. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: Performance of students on final written and performance requirements for senior		

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Program (ERE) - Environmental Resources Engineering BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (ERE) - Environmental Resources Engineering BS - ABET - a. 12-13 - An ability to apply knowledge of mathematics, science, and engineering **Outcome Year(s):** 2012 - 2013 **Start Date:** 08/01/2010 **Outcome Status:** Active	**Measurement Scale:** Exit Survey: Students were asked to indicate their agreement/disagreement level with the statement "I have the ability to apply knowledge of mathematics, science, and engineering." Strongly Agree (5 points) Agree (4 points) Neither Agree nor Disagree (3 points) Disagree (2 points) Strongly Disagree (1 point) **Assessment Method:** Survey of Students **Target:** Average score at or above 4.0	02/11/2014 - 4.7 **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: APM 395: Assessment considers the first four levels of Bloom's Taxonomy: Knowledge, Comprehension, Application and Analysis. Each level is assessed using a quantitative rubric of 0, 1, and 2 points. 2 points - student has fully achieved the expected performance criteria 1 point - some but limited ability to address the performance criteria 0 points - little or no ability to address the performance criteria. **Assessment Method:** Final Project **Target:** An average score of 1 should be obtained for each level	02/11/2014 - Knowledge - Average = 1.4 Comprehension - Average = 1.3 Application - Average = 1.8 Analysis - Average = 1.3 **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: ERE 371: Assessment considers the first four levels of Bloom's Taxonomy: Knowledge, Comprehension, Application	02/11/2014 - Knowledge - Average = 1.7 Comprehension - Average = 1.4 Application - Average = 1.8 Analysis - Average = 1.8 **Target Met:**	

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Program (ES) - Environmental Studies BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (ES) - Environmental Studies BS - Critical Thinking 12-13 - Demonstrate critical thinking skills in relation to environmental affairs **Outcome Year(s):** 2012 - 2013 **Start Date:** 09/30/2009 **Outcome Status:** Active	**Measurement Scale:** Grades on assignment translated to 4-point Rubric As or 90%+=1 Bs or 80-89%=2 Cs or 70-79%=3 Ds or 60-69%=4 F or < 60% **Assessment Method:** Course Assignment **Target:** 80% will meet or exceed (3 or 4 on rubric)	02/03/2014 - 90% of students met the target **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
	Measurement Scale: EST 132 Survey Results Question 4a-c Strongly Agree (5); Somewhat Agree(4); Agree(3); Somewhat Disagree(2); Strongly Disagree (1) **Assessment Method:** Survey of Students **Target:** 80% of students will achieve a 3 or better on rubric		
	Measurement Scale: EST 494 Survey Results Question 4a-c Strongly Agree (5); Somewhat Agree(4); Agree(3); Somewhat Disagree(2); Strongly Disagree (1) **Assessment Method:** Survey of Students **Target:** 80% of students will achieve a 3 or better on rubric	02/03/2014 - 92% of students reached target **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
Program (ES) - Environmental Studies BS - Communication 12-13 - Demonstrate	**Measurement Scale:** Grades on assignment translated to 4-point	02/03/2014 - 70 % met or exceeded	

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Program (FNRM) - Forest Ecosystem Science BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (FNRM) - Forest Ecosystem Science BS - Understand Forests 12-13 - Explain and interpret the relationships among flora and fauna including the biological and physical requirements of different plant and animal species within a forested ecosystem. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** 1 = Not meeting expectations 2 = Working towards meeting expectations 3 = Meets expectations 4 = Exceeds expectations **Assessment Method:** Capstone Assignment/Project **Rubric:** No rubric used	02/05/2015 - 3 = Meets expectations **Target Met:** No Evaluation - Data Point **Reporting Period:** 2012 - 2013 **Related Documents:** FOR490 Capstone Course	02/05/2015 - No action required
	Measurement Scale: 1 - 5 (not confident - very confident) Likert scale **Assessment Method:** Survey of Students **Rubric:** No rubric used	02/05/2015 - 4.2 **Target Met:** No Evaluation - Data Point **Reporting Period:** 2012 - 2013 **Related Documents:** FOR490 Capstone Course	02/05/2015 - No action required
Program (FNRM) - Forest Ecosystem Science BS - Manage Forests 12-13 - a) Evaluate tradeoffs among biological sustainability, economic feasibility, and social acceptability with respect to alternative forest management plans. b) Describe and apply appropriate decision-making tools and techniques (e.g., investment analyses) to evaluate alternative forest management practices. c) Specify and implement management practices appropriate to ownership objectives. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** 1 = Not meeting expectations 2 = Working towards meeting expectations 3 = Meets expectations 4 = Exceeds expectations **Assessment Method:** Capstone Assignment/Project **Rubric:** No rubric used	02/05/2015 - 3 = Meets expectations **Target Met:** No Evaluation - Data Point **Reporting Period:** 2012 - 2013 **Related Documents:** FOR490 Capstone Course	02/05/2015 - No action required
	Measurement Scale: 1 - 5 (not confident - very confident) Likert scale **Assessment Method:** Survey of Students **Rubric:** No rubric used	02/05/2015 - 4.6 **Target Met:** No Evaluation - Data Point **Reporting Period:** 2012 - 2013 **Related Documents:** FOR490 Capstone Course	02/05/2015 - No action required

SUNY - College of Environmental Science and Forestry
Program (FNRM) - Forest Resources Management BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (FNRM) - Forest Resources Management BS - Understand Forests 12-13 - Explain and interpret the relationships among flora and fauna including the biological and physical requirements of different plant and animal species within a forested ecosystem. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Completed **PLO Target Met?:** 3 - Met expectations	**Measurement Scale:** 1 = Not meeting expectations 2 = Working towards meeting expectations 3 = Meets expectations 4 = Exceeds expectations **Assessment Method:** Capstone Assignment/Project **Rubric:** No rubric used	02/03/2015 - 3 = Meets expectations **Target Met:** No Evaluation - Data Point **Reporting Period:** 2012 - 2013 **Related Documents:** FOR490 Capstone Course	02/03/2015 - No action required
	Measurement Scale: 1 - 5 (not confident - very confident) Likert scale **Assessment Method:** Survey of Students **Rubric:** No rubric used		
Program (FNRM) - Forest Resources Management BS - Measure Forests 12-13 - a) Plan, conduct, and analyze forest inventories including biological, physical, and social-economic elements using appropriate statistical sampling methods. b) Identify the major species, both flora and fauna, in a given area correctly. c) Project stand and forest development using computer based and non-computer based growth and yield models. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Completed **PLO Target Met?:** 3 - Met expectations	**Measurement Scale:** 1 = Not meeting expectations 2 = Working towards meeting expectations 3 = Meets expectations 4 = Exceeds expectations **Assessment Method:** Capstone Assignment/Project **Rubric:** No rubric used	02/03/2015 - 3 = Meets expectations **Target Met:** No Evaluation - Data Point **Reporting Period:** 2012 - 2013 **Related Documents:** FOR490 Capstone Course	02/03/2015 - No action required
	Measurement Scale: 1 - 5 (not confident - very confident) Likert scale **Assessment Method:** Survey of Students **Rubric:** No rubric used		

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Program (FNRM) - Natural Resources Management BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (FNRM) - Natural Resources Management BS - Understand Natural Environments 12-13 - Explain and interpret the relationships among organic and inorganic resources, including the biological and physical requirements of different plant and animal species, within forest and watershed ecosystems, and how humans interact with these resources. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Completed **PLO Target Met?:** 3 - Met expectations	**Measurement Scale:** 1 = Not meeting expectations 2 = Working towards meeting expectations 3 = Meets expectations 4 = Exceeds expectations **Assessment Method:** Capstone Assignment/Project **Rubric:** No rubric used	02/04/2015 - 3 = Meets expectations **Target Met:** No Evaluation - Data Point **Reporting Period:** 2012 - 2013 **Related Documents:** FOR490 Capstone Course	02/04/2015 - No action required
	Measurement Scale: 1 - 5 (not confident - very confident) Likert scale **Assessment Method:** Survey of Students **Rubric:** No rubric used	02/04/2015 - 4.2 **Target Met:** No Evaluation - Data Point **Reporting Period:** 2012 - 2013	02/04/2015 - No action required
Program (FNRM) - Natural Resources Management BS - Measure Natural Resources 12-13 - a) Identify the major species, both flora and fauna, in a given area correctly. b) Assess the extent of human impacts on forests, watersheds, and other natural areas. c) Plan, conduct, and analyze forest and watershed ecosystem and/or natural area inventories, including biological, physical, and social resources. d) Describe and apply different statistical sampling methods to user groups, forests, watersheds and/or natural areas. **Outcome Year(s):** 2012 - 2013	**Measurement Scale:** 1 = Not meeting expectations 2 = Working towards meeting expectations 3 = Meets expectations 4 = Exceeds expectations **Assessment Method:** Capstone Assignment/Project **Rubric:** No rubric used	02/04/2015 - 3 = Meets expectations **Target Met:** No Evaluation - Data Point **Reporting Period:** 2012 - 2013 **Related Documents:** FOR490 Capstone Course	02/04/2015 - No action required
	Measurement Scale: 1 - 5 (not confident - very confident) Likert scale **Assessment Method:** Survey of Students **Rubric:** No rubric used	02/04/2015 - 3.9 to 4.3 **Target Met:** No Evaluation - Data Point **Reporting Period:** 2012 - 2013 **Related Documents:** FOR490 Capstone Course	02/04/2015 - No action required

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Program (LA) - Landscape Architecture BLA

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (LA) - Landscape Architecture BLA - Assess & Incorporate Social/Cultural/Behavioral Factors - BLA graduates should be able to consider, assess, and incorporate a broad range of social, cultural, and behavioral factors into design and planning of the land. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Knowledge or understanding of stated outcome as follows: 1 - Strongly Disagree, 2 - Disagree, 3 - neutral/uncertain, 4 - Agree, 5 - Strongly Agree **Assessment Method:** Survey of Students **Target:** 70% of students will agree or strongly agree they have gained knowledge and or an understanding of the stated outcome. **Rubric:** No rubric used	12/31/2012 - LSA433(F12) 75% of all students completed the survey, of those 87% scored 4 or above. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013 **Related Documents:** Fall2012	
	Measurement Scale: Scale of 1 to 5 1- No knowledge of the learning outcome = <59% (F), 2- Little /weak knowledge of the learning outcome = 60-69%(D/D+), 3 - Some knowledge and understanding of the learning outcome = 70-79%(C-,C,C+) 4 - Good working knowledge and understanding of the learning outcome = 80-89%(B-, B, B+), 5 - Excellent\complete understanding and knowledge of the learning outcome = >90% (A-,A) **Assessment Method:** Course Grade **Target:** 70% of students will achieve level 3 or higher **Rubric:** No rubric used	06/26/2013 - LSA470(S13) 100% scored 4 or above. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
		06/26/2013 - LSA327(S13) 96% scored 4 or above, the remaining were all 3s. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
		06/26/2013 - LSA227(S13) 68% scored 4 or above, the remaining were 3s, there were no ones or twos. **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2012 - 2013	
		12/31/2012 - LSA220(F12): 56% of students scored in the 5 range, 37% scored 4, and the remaining 7% scored in the 3 range. There were no twos or ones. One student withdraw.	

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Active	**Rubric:** No rubric used		
	Measurement Scale: Scale of 1 to 5 1- No knowledge of the learning outcome = <59% (F), 2- Little /weak knowledge of the learning outcome = 60-69%(D/D+), 3 - Some knowledge and understanding of the learning outcome = 70-79%(C-,C,C+) 4 - Good working knowledge and understanding of the learning outcome = 80-89%(B-, B, B+), 5 - Excellent\complete understanding and knowledge of the learning outcome = >90% (A-,A) **Assessment Method:** Course Grade **Target:** 70% of students will achieve level 3 or higher **Rubric:** No rubric used	06/26/2013 - LSA470(S13) 100% scored 4 or above. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
		06/26/2013 - LSA327(S13) 96% scored 4 or above, the remaining were all 3s. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	
		06/26/2013 - LSA227(S13) 68% scored 4 or above, the remaining were 3s, there were no ones or twos. **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2012 - 2013	
		12/31/2012 - LSA220(F12): 56% of students scored in the 5 range, 37% scored 4, and the remaining 7% scored in the 3 range. There were no twos or ones. One student withdraw. LSA226(F12): 7% of students scored in the 5 range, 63% scored 4, and the remaining 25% scored in the 3 range. There were no twos or ones. Two students withdraw. LSA311(F12): 6% of students scored in the 5 range, 26% scored 4, 53% scored 3, 12% scored 2, and the remaining 3% scored in the 1 range. LSA321(F12): 40% of students scored in the 5 range, 44% scored 4, 12% scored 3, and the remaining 4% scored 2. There were no ones. One student withdraw. LSA326(F12): 20% of students scored in the 5 range, 53% scored 4, and the remaining 27% scored in the 3 range. There were no twos or ones.	12/31/2012 - By averaging all courses the target was meet. But individually LSA311 missed the target by 38%. The current action plan is to watch LSA311 closely over the next few semesters to see if a trend emerges and if an intervention is warranted.

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Program (PBE) - Bioprocess Engineering BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (PBE) - Bioprocess Engineering BS - ABET - a. Knowledge 12-14 - An ability to apply knowledge of mathematics, science, and engineering **Outcome Year(s):** 2012 - 2013 2013 - 2014 **Outcome Status:** Active	**Measurement Scale:** 4 - Exemplary 3 - Proficient 2 - Apprentice 1 - Novice **Assessment Method:** Presentation/Performance **Target:** At least 85% of the student work is at least at Proficient level (or 3). **Rubric:** Rubric attached in Related Docs **Related Documents:** Rubrics-OralPresentation-a.docx	06/03/2013 - On the identifying the specific objectives, over 94.5% evaluations on individuals were at least proficient. On the gathering and using relevant background and scientific information, over 94.5% evaluations on individuals were at least proficient. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013 **Related Documents:** Table 1-Presentation-a-13.docx	
	Measurement Scale: 4 - Exemplary 3 - Proficient 2 - Apprentice 1 - Novice **Assessment Method:** Lab Project **Target:** At least 85% of the student work is at least at Proficient level (or 3).	06/03/2013 - On gathering and using relevant background and scientific information, 100% leadership evaluations on individuals were at least proficient. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013 **Related Documents:** Table 1-Leadership-a-13.docx	
	Measurement Scale: 4 - Exemplary 3 - Proficient 2 - Apprentice 1 - Novice **Assessment Method:** Lab Project **Target:** At least 85% of the student work is at least at Proficient level (or 3).	06/03/2013 - 100% evaluations on individuals based on their final reports were at least proficient. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013 **Related Documents:** Table 1-Reports-a-13.docx	

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (PBE) - Paper Engineering BS - ABET - a. Knowledge 12-14 - An ability to apply knowledge of mathematics, science, and engineering **Outcome Year(s):** 2012 - 2013 2013 - 2014 **Outcome Status:** Active	**Measurement Scale:** %, An exam is given at the first day of class in PSE 370 (Mass and energy balances) that covers general chemistry, physics, and calculus for the PSE 370 course. The exam should help students identify their deficiencies and prepare them for the upcoming assignments in the course. **Assessment Method:** Exam/Quiz - In Course **Target:** We expect that 80% of the students will score 75% or above on the exam. We expect all students to score 60% or above.		
	Measurement Scale: %, Pre-requisite exam in PSE 468. A quiz was administered in the first week of the class to ensure general papermaking knowledge for the PSE 468 course. **Assessment Method:** Exam/Quiz - In Course **Target:** We expect that 80% of the students will score 75% or above on the exam. We expect all students to score 60% or above.	05/08/2014 - This outcome is addressed with Exam #1 (Take home). It applies knowledge of, science and engineering as it relates to paper making. It indentifies students that have a deficiency in some areas and a review of the basic material may be needed. It also informs the students of the expectations of knowledge going into this class. The average score was 97.23. 100% of the students had a score above 75, were as 100% of the students had a score above 60%. **Target Met:** Evaluation - Met Target **Reporting Period:** 2013 - 2014	
	Measurement Scale: A, B, C, D - In PSE 468 evaluation seminar at the conclusion of the paper machine run, the students give seminars and field questions regarding their plan, performance, and results of the product design	05/08/2014 - Students need to work in teams throughout the class assignments. The student work is evaluated in a final seminar were each team presents their work, followed by an oral examination involving the entire class in a questions and discussions related to the paper	

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (PBE) - Paper Science BS - ABET - a. Knowledge 12-14 - An ability to apply knowledge of mathematics, science, and engineering **Outcome Year(s):** 2012 - 2013 2013 - 2014 **Outcome Status:** Active	**Measurement Scale:** %, An exam is given at the first day of class in PSE 370 (Mass and energy balances) that covers general chemistry, physics, and calculus for the PSE 370 course. The exam should help students identify their deficiencies and prepare them for the upcoming assignments in the course. **Assessment Method:** Exam/Quiz - In Course **Target:** We expect that 80% of the students will score 75% or above on the exam. We expect all students to score 60% or above.		
	Measurement Scale: %, Pre-requisite exam in PSE 468. A quiz was administered in the first week of the class to ensure general papermaking knowledge for the PSE 468 course. **Assessment Method:** Exam/Quiz - In Course **Target:** We expect that 80% of the students will score 75% or above on the exam. We expect all students to score 60% or above.	02/13/2015 - This outcome is addressed with Exam #1 (Take home). It applies knowledge of, science and engineering as it relates to paper making. It identifies students that have a deficiency in some areas and a review of the basic material may be needed. It also informs the students of the expectations of knowledge going into this class. The average score was 97.23. 100% of the students had a score above 75, were as 100% of the students had a score above 60%. **Target Met:** No Evaluation - Data Point **Reporting Period:** 2013 - 2014	
	Measurement Scale: A, B, C, D - In PSE 468 evaluation seminar at the conclusion of the paper machine run, the students give seminars and field questions regarding their plan, performance, and results of the product design experience. Each team has approximately 30 minutes for a presentation and 60	02/13/2015 - Students need to work in teams throughout the class assignments. The student work is evaluated in a final seminar were each team presents their work, followed by an oral examination involving the entire class in a questions and discussions related to the paper machine run. The average score of both seminars was 92.14. The average score of the first seminar	

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Program (SCME) - Construction Management

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (SCME) - Construction Management - management and delivery fundamentals - 1. apply construction management fundamentals to successfully manage the delivery of construction projects within the contractually defined delivery system by completing a project on time, under budget, of desired quality in a safe manner **Outcome Year(s):** 2012 - 2013 **Start Date:** 08/01/2012 **Outcome Status:** Active	**Measurement Scale:** pass/fail **Assessment Method:** Capstone Assignment/Project **Target:** 95% pass rate	05/10/2013 - target met with 100% pass rate in Capstone (in course CME 454) **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013	02/04/2015 - Will continue to monitor student progress
	Measurement Scale: 4 Exceeding expectations > 80% pass rate 3 Meeting expectations > 70% pass rate 2 Approaching expectations > 60% pass rate 1 Not meeting expectations < 60% pass rate **Assessment Method:** Exam/Quiz - Standardized **Target:** 3 meeting expectations **Rubric:** Rubric attached in Related Docs **Related Documents:** Rubric for Standardized Exam Scores 2012-2015.xlsx	04/30/2013 - 56% pass rate on AC exam Not meeting expectations **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2012 - 2013	02/04/2015 - The pass rate (overall exam score) was lower than usual this year. It could be this group of students, or this particular set of exam questions (noise in data).
Program (SCME) - Construction Management - manage materials - 2. manage materials, equipment, cost and personnel in both office and field activities **Outcome Year(s):** 2012 - 2013 **Start Date:** 08/01/2012 **Outcome Status:** Active	**Measurement Scale:** Exceeding expectations > 80% pass rate Meeting expectations > 70% pass rate Approaching expectations > 60% pass rate Not meeting expectations < 60% pass rate **Assessment Method:** Exam/Quiz - Standardized	05/10/2013 - Not meeting expectations 56% pass rate **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2012 - 2013	02/04/2015 - It is unclear why a subset of our students did not perform well on the exam in 2013. It could be the exam questions (that vary year to year, or the students, or differences in preparation (coursework and study sessions) this year
	Measurement Scale: Course CME 343 Construction Estimating	05/20/2013 - 96% with grade of C or better **Target Met:**	

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Program (CHEM) - Chemistry BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (CHEM) - Chemistry BS - Fundamental Chemistry Principles 13-14 - A sound understanding of the fundamental chemical principles and underlying theories in the core areas of chemistry (analytical, organic, inorganic, physical) with an emphasis on critical thinking and problem-solving. **Outcome Year(s):** 2013 - 2014 **Start Date:** 05/25/2010 **Outcome Status:** Inactive	**Measurement Scale:** Course grade of C+ or better in FCH 150-153, FCH 221-224, FCH 360-361, and FCH 380-381. **Assessment Method:** Course Grade **Target:** 80% of students at C+ or better		
	Measurement Scale: Standardized exams designed by the American Chemical Society in General Chemistry and Inorganic Chemistry **Assessment Method:** Exam/Quiz - Standardized **Target:** Class average and median above national average and median		
	Measurement Scale: Evaluation of knowledge of Fundamental Chemical Principles in FCH 498 (Senior Research) 1-5 scale 1=Poor 3=Average 5= Outstanding **Assessment Method:** Capstone Assignment/Project **Target:** Average of 3.5		
	Measurement Scale: Rated performance in Lab in FCH 498 (Senior Research) 1-5 scale 1= Poor 3= Average 5=Outstanding		

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Program (ENS) - Environmental Science

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (ENS) - Environmental Science BS - Fundamental math and science knowledge 13-14 - Demonstrate basic knowledge of fundamental concepts in math and science and the ability to apply them appropriately to a practical problem. **Outcome Year(s):** 2013 - 2014	**Measurement Scale:** Distribution of performance of Env Sci students in four required courses, EFB 101, APM 106, APM 391, and PHY 211, as measured by final grades and mean scores on the American Chemical Society General Chemistry Full Year Exam. **Assessment Method:** Course Grade **Target:** 80% meet or exceed the standard (3 or 4)	02/25/2015 - EFB 101:59% of students meet or exceed standard APM 106: 86% of students meet or exceed standard APM 391 95% of students meet or exceed standard PHY 211: 81% of students meet or exceed standard ACS exam data not available **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2013 - 2014	02/26/2015 - One factor contributing to the high number of students missing the target for biology is that international students entering our program are struggling with oral and written language skills. We are collaborating with Admissions and the Office of International student programs to create a more robust support system for these students. One option may be to have new transfers take Physics during their first year and take biology the second year--giving our students more time to build language skills and thus provide more support for the vocabulary intensive content in biology.
	Measurement Scale: Demonstration of understanding of fundamental mathematics and science concepts in Senior Synthesis project. INSERT RUBRIC **Assessment Method:** Capstone Assignment/Project **Target:** 80% of students meet or exceed standard (3 or 4 on rubric).	02/25/2015 - The Senior Synthesis project has proven itself to be an unreliable assessment method for basic science concepts. Upper divisions concepts, especially those in the student's option area may be assessed by this method. Fundamental concepts, especially outside the option area are not well evaluated by this method. **Target Met:** No Evaluation - Data Point **Reporting Period:** 2013 - 2014	

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Program (ES) - Environmental Studies BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (ES) - Environmental Studies BS - Critical Thinking 13-14 - Demonstrate critical thinking skills in relation to environmental affairs **Outcome Year(s):** 2013 - 2014 **Start Date:** 09/30/2009 **Outcome Status:** Active **PLO Target Met?:** 3 - Met expectations	**Measurement Scale:** Grades on assignment translated to 4-point Rubric As or 90%+=1 Bs or 80-89%=2 Cs or 70-79%=3 Ds or 60-69%=4 F or < 60% **Assessment Method:** Course Assignment **Target:** 80% will meet or exceed (3 or 4 on rubric)		
	Measurement Scale: EST 132 Survey Results Question 4a-c Strongly Agree (5); Somewhat Agree(4); Agree(3); Somewhat Disagree(2); Strongly Disagree (1) **Assessment Method:** Survey of Students **Target:** 80% of students will achieve a 3 or better on rubric		
	Measurement Scale: EST 494 Survey Results Question 4a-c Strongly Agree (5); Somewhat Agree(4); Agree(3); Somewhat Disagree(2); Strongly Disagree (1) **Assessment Method:** Survey of Students **Target:** 80% of students will achieve a 3 or better on rubric		
		03/11/2014 - 83 percent of students met critical thinking target.	

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
		Target Met: Evaluation - Met Target **Reporting Period:** 2013 - 2014	
Program (ES) - Environmental Studies BS - Ecological Literacy 13-14 - Demonstrate an awareness, knowledge, and appreciation of the intrinsic values of ecological processes and communities. **Outcome Year(s):** 2013 - 2014 **Outcome Status:** Active **PLO Target Met?:** 1 - Expectations Not Met	**Measurement Scale:** Grades on assignment translated to 4-point Rubric As or 90%+=1 Bs or 80-89%=2 Cs or 70-79%=3 Ds or 60-69%=4 F or < 60% **Assessment Method:** Course Assignment **Target:** 80% will meet or exceed target **Rubric:** No rubric used		
		03/11/2014 - The majority of students did not meet target. **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2013 - 2014	
Program (ES) - Environmental Studies BS - Sustainability 13-14 - Demonstrate an integrative approach to environmental issues with a focus on sustainability. **Outcome Year(s):** 2013 - 2014 **Outcome Status:** Active	**Measurement Scale:** Grades on assignment translated to 4-point Rubric As or 90%+=1 Bs or 80-89%=2 Cs or 70-79%=3 Ds or 60-69%=4 F or < 60% **Assessment Method:** Course Assignment **Target:**		

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Program (FNRM) - Forest Ecosystem Science BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (FNRM) - Forest Ecosystem Science BS - Understand Forests 13-14 - Explain and interpret the relationships among flora and fauna including the biological and physical requirements of different plant and animal species within a forested ecosystem. **Outcome Year(s):** 2013 - 2014 **Outcome Status:** Active **PLO Target Met?:** 3 - Met expectations	**Measurement Scale:** 1 = Not meeting expectations 2 = Working towards meeting expectations 3 = Meets expectations 4 = Exceeds expectations **Assessment Method:** Capstone Assignment/Project	02/05/2015 - 3 = Meets expectations **Target Met:** No Evaluation - Data Point **Reporting Period:** 2013 - 2014	02/05/2015 - No action required
	Measurement Scale: 1 - 5 (not confident - very confident) Likert scale **Assessment Method:** Survey of Students	02/05/2015 - 4.5 **Target Met:** No Evaluation - Data Point **Reporting Period:** 2013 - 2014 **Related Documents:** Assessment from Annual Report 2013-14	02/05/2015 - No action required
	Measurement Scale: Independent evaluation of program by SAF Visiting Team **Rubric:** No rubric used	02/05/2015 - Learning outcomes met **Target Met:** Evaluation - Met Target **Reporting Period:** 2013 - 2014 **Related Documents:** SUNY ESF Visiting Team Report 02June2014	02/05/2015 - No action required
Program (FNRM) - Forest Ecosystem Science BS - Manage Forests 13-14 - a) Evaluate tradeoffs among biological sustainability, economic feasibility, and social acceptability with respect to alternative forest management plans. b) Describe and apply appropriate decision-making tools and techniques (e.g., investment analyses) to evaluate alternative forest management practices. c) Specify and implement management	**Measurement Scale:** 1 = Not meeting expectations 2 = Working towards meeting expectations 3 = Meets expectations 4 = Exceeds expectations **Assessment Method:** Capstone Assignment/Project	02/05/2015 - 3 = Meets expectations **Target Met:** No Evaluation - Data Point **Reporting Period:** 2013 - 2014	02/05/2015 - No action required
	Measurement Scale: 1 - 5 (not confident - very confident) Likert scale	02/05/2015 - 4.2-4.7 **Target Met:** No Evaluation - Data Point	02/05/2015 - No action required

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Program (FNRM) - Forest Resources Management BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (FNRM) - Forest Resources Management BS - Understand Forests 13-14 - Explain and interpret the relationships among flora and fauna including the biological and physical requirements of different plant and animal species within a forested ecosystem. **Outcome Year(s):** 2013 - 2014 **Outcome Status:** Active	**Measurement Scale:** 1 = Not meeting expectations 2 = Working towards meeting expectations 3 = Meets expectations 4 = Exceeds expectations **Assessment Method:** Capstone Assignment/Project	02/03/2015 - 3 = Meets expectations **Target Met:** No Evaluation - Data Point **Reporting Period:** 2013 - 2014	02/05/2015 - No action required
	Measurement Scale: 1 - 5 (not confident - very confident) Likert scale **Assessment Method:** Survey of Students **Rubric:** No rubric used	02/05/2015 - 4.5 **Target Met:** No Evaluation - Data Point **Reporting Period:** 2013 - 2014 **Related Documents:** Assessment from Annual Report 2013-14.pdf	02/05/2015 - No action required
	Measurement Scale: Independent evaluation of program by SAF Visiting Team **Rubric:** No rubric used	02/05/2015 - Learning outcome met **Target Met:** Evaluation - Met Target **Reporting Period:** 2013 - 2014 **Related Documents:** SUNY ESF Visiting Team Report 02June2014	02/05/2015 - No action required
Program (FNRM) - Forest Resources Management BS - Manage Forests 13-14 - a) Evaluate tradeoffs among biological sustainability, economic feasibility, and social acceptability with respect to alternative forest management plans. b) Describe and apply appropriate decision-making tools and techniques (e.g., investment analyses) to evaluate alternative forest management practices. c) Specify and implement management	**Measurement Scale:** 1 = Not meeting expectations 2 = Working towards meeting expectations 3 = Meets expectations 4 = Exceeds expectations **Assessment Method:** Capstone Assignment/Project	02/05/2015 - 3 = Meets expectations **Target Met:** No Evaluation - Data Point **Reporting Period:** 2013 - 2014	02/05/2015 - No action required
	Measurement Scale: 1 - 5 (not confident - very confident) Likert scale	02/05/2015 - 4.2-4.7 **Target Met:** No Evaluation - Data Point	02/05/2015 - No action required

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Program (FNRM) - Natural Resources Management BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (FNRM) - Natural Resources Management BS - Understand Natural Environments 13-14 - Explain and interpret the relationships among organic and inorganic resources, including the biological and physical requirements of different plant and animal species, within forest and watershed ecosystems, and how humans interact with these resources. **Outcome Year(s):** 2013 - 2014 **Outcome Status:** Active	**Measurement Scale:** 1 = Not meeting expectations 2 = Working towards meeting expectations 3 = Meets expectations 4 = Exceeds expectations **Assessment Method:** Capstone Assignment/Project	02/05/2015 - 3 = Meets expectations **Target Met:** No Evaluation - Data Point **Reporting Period:** 2013 - 2014	02/05/2015 - No action required
	Measurement Scale: 1 - 5 (not confident - very confident) Likert scale **Assessment Method:** Survey of Students	02/05/2015 - 4.4 **Target Met:** No Evaluation - Data Point **Reporting Period:** 2013 - 2014 **Related Documents:** FOR490 Capstone Course	02/05/2015 - No action required
	Measurement Scale: Independent evaluation of program by SAF Visiting Team **Rubric:** No rubric used	02/05/2015 - Learning objective met **Target Met:** Evaluation - Met Target **Reporting Period:** 2013 - 2014 **Related Documents:** SUNY ESF Visiting Team Report 02June2014	02/05/2015 - No action required
Program (FNRM) - Natural Resources Management BS - Measure Natural Resources 13-14 - a) Identify the major species, both flora and fauna, in a given area correctly. b) Assess the extent of human impacts on forests, watersheds, and other natural areas. c) Plan, conduct, and analyze forest and watershed ecosystem and/or natural area inventories, including biological, physical, and social resources.	**Measurement Scale:** 1 = Not meeting expectations 2 = Working towards meeting expectations 3 = Meets expectations 4 = Exceeds expectations **Assessment Method:** Capstone Assignment/Project	02/05/2015 - 3 = Meets expectations **Target Met:** No Evaluation - Data Point **Reporting Period:** 2013 - 2014	02/05/2015 - No action required
	Measurement Scale: 1 - 5 (not confident - very confident) Likert scale **Assessment Method:**	02/05/2015 - 4.4 **Target Met:** No Evaluation - Data Point **Reporting Period:**	02/05/2015 - No action required

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Program (LA) - Landscape Architecture BLA

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (LA) - Landscape Architecture BLA - Assess & Incorporate Social/Cultural/Behavioral Factors - BLA graduates should be able to consider, assess, and incorporate a broad range of social, cultural, and behavioral factors into design and planning of the land. **Outcome Year(s):** 2012 - 2013 **Outcome Status:** Active	**Measurement Scale:** Knowledge or understanding of stated outcome as follows: 1 - Strongly Disagree, 2 - Disagree, 3 - neutral/uncertain, 4 - Agree, 5 - Strongly Agree **Assessment Method:** Survey of Students **Target:** 70% of students will agree or strongly agree they have gained knowledge and or an understanding of the stated outcome. **Rubric:** No rubric used	05/17/2014 - LSA327(S14) 95% scored 4 or above. **Target Met:** Evaluation - Met Target **Reporting Period:** 2013 - 2014 **Related Documents:** Spring2014	
	Measurement Scale: Scale of 1 to 5 1- No knowledge of the learning outcome = <59% (F), 2- Little /weak knowledge of the learning outcome = 60-69%(D/D+), 3 - Some knowledge and understanding of the learning outcome = 70-79%(C-,C,C+) 4 - Good working knowledge and understanding of the learning outcome = 80-89%(B-, B, B+), 5 - Excellent\complete understanding and knowledge of the learning outcome = >90% (A-,A) **Assessment Method:** Course Grade **Target:** 70% of students will achieve level 3 or higher **Rubric:** No rubric used	05/17/2014 - LSA327(S14):100% of students scored in the 3 or above range. **Target Met:** Evaluation - Met Target **Reporting Period:** 2013 - 2014	
		05/17/2014 - LSA227(S14): 100% of students scored in the 3 or above range. **Target Met:** Evaluation - Met Target **Reporting Period:** 2013 - 2014	
		12/20/2013 - LSA459(F13): 94% of students scored in the 3 or above range and the remaining 6% in the 2 range. **Target Met:** Evaluation - Met Target **Reporting Period:** 2013 - 2014	
		12/20/2013 - LSA458(F13): 85% of students scored in the 3 or above range and the remaining 15% in the 1 range. **Target Met:**	

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Program (PBE) - Bioprocess Engineering BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (PBE) - Bioprocess Engineering BS - ABET - a. Knowledge 12-14 - An ability to apply knowledge of mathematics, science, and engineering **Outcome Year(s):** 2012 - 2013 2013 - 2014 **Outcome Status:** Active	**Measurement Scale:** 4 - Exemplary 3 - Proficient 2 - Apprentice 1 - Novice **Assessment Method:** Presentation/Performance **Target:** At least 85% of the student work is at least at Proficient level (or 3). **Rubric:** Rubric attached in Related Docs **Related Documents:** Rubrics-OralPresentation-a.docx	06/03/2013 - On the identifying the specific objectives, over 94.5% evaluations on individuals were at least proficient. On the gathering and using relevant background and scientific information, over 94.5% evaluations on individuals were at least proficient. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013 **Related Documents:** Table 1-Presentation-a-13.docx	
	Measurement Scale: 4 - Exemplary 3 - Proficient 2 - Apprentice 1 - Novice **Assessment Method:** Lab Project **Target:** At least 85% of the student work is at least at Proficient level (or 3).	06/03/2013 - On gathering and using relevant background and scientific information, 100% leadership evaluations on individuals were at least proficient. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013 **Related Documents:** Table 1-Leadership-a-13.docx	
	Measurement Scale: 4 - Exemplary 3 - Proficient 2 - Apprentice 1 - Novice **Assessment Method:** Lab Project **Target:** At least 85% of the student work is at least at Proficient level (or 3).	06/03/2013 - 100% evaluations on individuals based on their final reports were at least proficient. **Target Met:** Evaluation - Met Target **Reporting Period:** 2012 - 2013 **Related Documents:** Table 1-Reports-a-13.docx	

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Program (PBE) - Paper Engineering BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (PBE) - Paper Engineering BS - ABET - a. Knowledge 12-14 - An ability to apply knowledge of mathematics, science, and engineering **Outcome Year(s):** 2012 - 2013 2013 - 2014 **Outcome Status:** Active	**Measurement Scale:** %, An exam is given at the first day of class in PSE 370 (Mass and energy balances) that covers general chemistry, physics, and calculus for the PSE 370 course. The exam should help students identify their deficiencies and prepare them for the upcoming assignments in the course. **Assessment Method:** Exam/Quiz - In Course **Target:** We expect that 80% of the students will score 75% or above on the exam. We expect all students to score 60% or above.		
	Measurement Scale: %, Pre-requisite exam in PSE 468. A quiz was administered in the first week of the class to ensure general papermaking knowledge for the PSE 468 course. **Assessment Method:** Exam/Quiz - In Course **Target:** We expect that 80% of the students will score 75% or above on the exam. We expect all students to score 60% or above.	05/08/2014 - This outcome is addressed with Exam #1 (Take home). It applies knowledge of, science and engineering as it relates to paper making. It indentifies students that have a deficiency in some areas and a review of the basic material may be needed. It also informs the students of the expectations of knowledge going into this class. The average score was 97.23. 100% of the students had a score above 75, were as 100% of the students had a score above 60%. **Target Met:** Evaluation - Met Target **Reporting Period:** 2013 - 2014	
	Measurement Scale: A, B, C, D - In PSE 468 evaluation seminar at the conclusion of the paper machine run, the students give seminars and field questions regarding their plan, performance, and results of the product design	05/08/2014 - Students need to work in teams throughout the class assignments. The student work is evaluated in a final seminar were each team presents their work, followed by an oral examination involving the entire class in a questions and discussions related to the paper	

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Program (PBE) - Paper Science BS

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (PBE) - Paper Science BS - ABET - a. Knowledge 12-14 - An ability to apply knowledge of mathematics, science, and engineering **Outcome Year(s):** 2012 - 2013 2013 - 2014 **Outcome Status:** Active	**Measurement Scale:** %, An exam is given at the first day of class in PSE 370 (Mass and energy balances) that covers general chemistry, physics, and calculus for the PSE 370 course. The exam should help students identify their deficiencies and prepare them for the upcoming assignments in the course. **Assessment Method:** Exam/Quiz - In Course **Target:** We expect that 80% of the students will score 75% or above on the exam. We expect all students to score 60% or above.		
	Measurement Scale: %, Pre-requisite exam in PSE 468. A quiz was administered in the first week of the class to ensure general papermaking knowledge for the PSE 468 course. **Assessment Method:** Exam/Quiz - In Course **Target:** We expect that 80% of the students will score 75% or above on the exam. We expect all students to score 60% or above.	02/13/2015 - This outcome is addressed with Exam #1 (Take home). It applies knowledge of, science and engineering as it relates to paper making. It identifies students that have a deficiency in some areas and a review of the basic material may be needed. It also informs the students of the expectations of knowledge going into this class. The average score was 97.23. 100% of the students had a score above 75, were as 100% of the students had a score above 60%. **Target Met:** No Evaluation - Data Point **Reporting Period:** 2013 - 2014	
	Measurement Scale: A, B, C, D - In PSE 468 evaluation seminar at the conclusion of the paper machine run, the students give seminars and field questions regarding their plan, performance, and results of the product design experience. Each team has approximately 30 minutes for a presentation and 60	02/13/2015 - Students need to work in teams throughout the class assignments. The student work is evaluated in a final seminar were each team presents their work, followed by an oral examination involving the entire class in a questions and discussions related to the paper machine run. The average score of both seminars was 92.14. The average score of the first seminar	

Program Assessment Report - 4 Column

SUNY - College of Environmental Science and Forestry

Program (SCME) - Construction Management

Program Learning Outcomes	Measures & Targets / Tasks	Results	Action & Follow-Up
Program (SCME) - Construction Management - management and delivery fundamentals - 1. apply construction management fundamentals to successfully manage the delivery of construction projects within the contractually defined delivery system by completing a project on time, under budget, of desired quality in a safe manner **Outcome Year(s):** 2012 - 2013 **Start Date:** 08/01/2012 **Outcome Status:** Active	**Measurement Scale:** pass/fail **Assessment Method:** Capstone Assignment/Project **Target:** 95% pass rate	05/09/2014 - pass rate of 85.6% 14.4 % of students failed the course CME 454 **Target Met:** Evaluation - Did Not Meet Target **Reporting Period:** 2013 - 2014	02/04/2015 - Need to identify reasons why students failed the project, and develop corrective action.
	Measurement Scale: 4 Exceeding expectations > 80% pass rate 3 Meeting expectations > 70% pass rate 2 Approaching expectations > 60% pass rate 1 Not meeting expectations < 60% pass rate **Assessment Method:** Exam/Quiz - Standardized **Target:** 3 meeting expectations **Rubric:** Rubric attached in Related Docs **Related Documents:** Rubric for Standardized Exam Scores 2012-2015.xlsx	04/30/2014 - 84 % pass rate for exam date April 2014; exceeding expectations **Target Met:** Evaluation - Met Target **Reporting Period:** 2013 - 2014	02/04/2015 - For overall exam score, student performance showed significant improvement over 2013. It could be the exam questions, or differences in groups of students, or differences in preparation for exam.
Program (SCME) - Construction Management - manage materials - 2. manage materials, equipment, cost and personnel in both office and field activities **Outcome Year(s):** 2012 - 2013 **Start Date:** 08/01/2012 **Outcome Status:** Active	**Measurement Scale:** Exceeding expectations > 80% pass rate Meeting expectations > 70% pass rate Approaching expectations > 60% pass rate Not meeting expectations < 60% pass rate **Assessment Method:** Exam/Quiz - Standardized	05/09/2014 - Meeting expectations with a 79% pass rate **Target Met:** Evaluation - Met Target **Reporting Period:** 2013 - 2014	02/04/2015 - 79% of our students passed the exam this year; this was greater and compares well with national pass rate
	Measurement Scale: Course CME 343 Construction Estimating Exemplary (% of students with A) Proficient (%of students with B)	05/20/2014 - 94.3% with grade of C or better **Target Met:** Evaluation - Met Target **Reporting Period:**	02/04/2015 - identify reasons for success and continue

Academic Program Assessment Appendix D
2012 Cyclical Assessment Data Analysis Recommendations by Program

Program	2012 Actions Taken[1]
Chemistry	Revision of Assessment plan Institute a one semester terminal General Chemistry course for students in CMWPE and 2 of 3 FNRM majors. Without these students in the General Chemistry I, all students in this course, including Chemistry majors, may have a deeper learning experience. Teach Inorganic Chemistry every academic year instead of every other year in order to reduce class size and make it easier to use a guided inquiry style. In order to reduce the size of laboratory groups in Analytical Chemistry from 4-5 to sizes more productive of student learning (3) it was proposed to run four (4) different experiments at one time, instead of three (3). This has required allocation of temporary service funds for preparation for instrumentation for labs and additional supervision of students. To add focus to issues of safety and ethics (among other topics), it was proposed to add a 1-credit course which would incorporate safety, ethics, writing skills, and library skills.
Environmental Science	The Senior Synthesis project has proven itself to be an unreliable assessment method for basic content concepts. Upper division concepts, especially those in the student's option area, can be assessed by this method. Fundamental concepts, especially those outside of the option area are not well evaluated by this method. A closer involvement with EWP 405 process would allow evaluation of research planning at a more appropriate stage. Efforts are underway to make this possible. Only two students in the sample chose this option. Neither of these students chose a project on a health-related topic, except peripherally. There may be a disconnect between the goals of students choosing this option and the understanding of evaluators. It is also possible this is purely a result of the low sample size. This result is a cause for concern, but we will continue to watch this in future years and make changes as we see fit. It is possible that the new Environmental Health major will render this problem moot. The use of capstone projects to evaluate student retention of content is problematic. In general, the students who included the listed content in their projects met or exceeded the standards at the desired rate (>80%). Only in the area of statistics did fewer than 80% of students meet or exceed the standard. We are already exploring the possibility of requiring a more rigorous statistics course for Environmental Science students. The problem arises because such high proportions of student projects failed to include sufficient content to evaluate (only 10% of projects included calculus content). We will explore alternative ways to evaluate student retention of content.
Environmental Resources Engineering	Average was below target level. Need to monitor this outcome to evaluate if lack of attainment related to lack of understanding on part of individual students. Direct assessment of outcome using other measures suggests outcome is being attained. Target was not met for one level evaluated. Given this is the first time this outcome produced a trigger, the initial response will be to allocate more time in APM395 to course related student learning outcomes and to reassess this outcome next year.

	Environmental Studies	Continue assignments For 2 measures, continue course as is For 4 measures, continue program as is but also develop more precise survey instrument For 2 measures, EST 361 should be examined for possible adjustments to help improve critical thinking and/or selection and grading of assignment used to assess this PLO should be adjusted to reflect the PLO Instructor will be asked to review and adjust syllabus and share with UG Program Committee. UG Program Committee to complete this. For 3 measures, measurement will be reviewed to determine adequacy as indicator. Review student grades in the course overall as an additional indirect measure. Determine where in the rest of the curriculum this PLO is addressed Collect ES student grades in EFB 120 (2009-2011). Determine other places in ES curriculum this PLO is addressed. For 2 measures, review all required courses for additional and/or better measures of critical thinking PLO For 7 measures, Work on developing survey instrument that measures outcomes more precisely
FNRM	**Forest Ecosystem Science**	For 16 measures, no action required for all
	Forest Resources Mgt.	For 4 measures, no action required for all
	Natural Resources Mgt.	For 7 measures, no action required Revised NRM curriculum. See NRM Curriculum Proposal.
	Landscape Architecture	By averaging all courses the target was met. But individually LSA206 fell just a few points short of target while LSA311 missed the target by 38%. The current action plan is to watch LSA311 closely over the next few semesters to see if a trend emerges and if an intervention is warranted. For 2 measures, by averaging all courses the target was met. But individually LSA311 missed the target by 38%. The current action plan is to watch LSA311 closely over the next few semesters to see if a trend emerges and if an intervention is warranted. LSA 455 will be revised the next time the OAP is updated to address this issue.
PBE	**Bioprocess Engineering**	For 2 measures, continue to improve on the design project to enrich student experience. Continue to improve on the lab and design courses to enhance students' experience in team work. Continue to watch for the changes in pre-requisite courses. The results here

		mostly reflect the high school science plus freshman math skills. Including more emphasis on references for report writing in BPE 440 in future deliveries. For 34 measures, no action needed.
	Paper Engineering	Continue to watch the trend and improve on the design course. For 58 measures, no action planned for all
	Paper Science	For 31 measures , no action planned for all
	Construction Mgt.	For 3 measures, a course was added, CME 306 Engineering Materials for Sustainable Construction that adds topics in steel and concrete to the curriculum. For 3 measures, a new course was developed, CME 255 Plan Interpretation and Quantity Take-off. The course was approved by the Committee on Curriculum and the ESF Faculty April, 2010. 2010 http://www.esf.edu/coc/archives/2009-10.asp. The course was added as a requirement for the construction management curriculum. This was approved by COI and the ESF Faculty March 3, 2010 For 5 measures, department will review 2012-2013 and prepare an action plan The course is taught in the spring semester senior year; the students take the standardized exam halfway through the course For 6 measures, in 2008-09 there was a temporary change in instructor for three courses. This affected scores for several years. The scores improved after the former instructor was reinstated It is unclear why students did not perform well on the AIC exam in this category; the students performed very well in the OSHA-based course. Department will review 2012-2013 and prepare an action plan. Related courses are CME 255 and CME 343. Specific assignments should be developed to use for assessment Scores are improving after replacement of temporary instructor Scores improved likely a reflection of the removal of a temporary instructor and reinstatement of faculty member assignment to this course see action and follow up for 1-15-2013 see action item from 2010 See action plan for "rating systems" LO For 2 measures, see results for "Rating Systems" For 2 measures, seniors are on the old curriculum that did not require the new course, CME 306 Engineering Materials, so this may explain the response in the 2012 senior exit survey. We will continue to track the surveys as students on the new curriculum graduate to see if students are satisfied with the new course on steel and concrete (CME306). This will complement the existing courses on renewable materials and composite materials.

	slight improvement in AIC exam scores; we will look at scores in specific categories to see if there are any deficiencies Student performance was not meeting expectations; department should consider additional review of engineering principles prior to the examination Students are doing better each year on the national exam For 2 measures, students are doing well in the course. Students are doing well in the course, but AIC exam scores in this category are not meeting the target. Specific assignments need to be used to assess student achievement Students are gaining competency in knowledge of sustainable construction projects; the course CME 304 will continue to be a required course Students are performing well in CME 215; the course will continue to be a required course Students are performing better on the Management Concepts category of the exam. The department will continue to track next year and then review for potential changes in course content, possibly in senior seminar Students are performing well on the budgeting costs and cost control category of the AIC exam Students are performing well on the capstone assignment. The course will continue to be taught in similar manner For 2 measures, students continue to do well on the capstone assignment students continue to perform well in this course Students did not comment in the senior survey on lack of course content on construction materials A course was added by curriculum action spring of 2010 on concrete and steel to add to courses on wood and composites. Students perform well in the course using this metric, grade of C or better. The metric could be changed to grade of B or better or A to more closely match student performance on the AIC exam. Students scores continue to improve over scores from 2010 and 2011 Students were meeting or exceeding expectation in prior years; could this be normal variation in student population? Department will follow in subsequent years Students take the course in the spring senior year and they take the exam in March/early April of the senior year. Department will consider if the course should be offered in the fall instead. target has been met; capstone assignment will continue Target was met this year. This is the first year that a new course was taught so this new course may be helping to improve students' communication skills The 60% pass rate did not meet expectations; this could be a reflection of

	different student population; temporary instructor assignment may have influenced the results; instructor back from leave For 2 measures, the capstone course will continue to be taught in similar manner with similar capstone assignment as it appears to be successful The course CME 255 is being phased in as a requirement, current students can take as elective. The course will continue to be offered; students are performing well; course content appears to provide suitable awareness of rating systems For 2 measures, the course, CME 202 Introduction to Professional Communication was added to our curriculum first offered in 2010-2011. The department considered adding a new course The new course, CME 202 Intro to Professional Communications was first offered in the academic year 2010-11. We will continue to track the exam results to see if scores improve with the offering of this new course. The pass rate on the exam exceeded expectations; no actions considered The students did not perform up to expectations in the category "Project Administration" on the AIC exam. Faculty should investigate how to better deliver green content of the courses related to project management Three courses were added to the program requirements: - CME 215 Sustainable Construction - CME 304 Environmental Performance Measures - CME 306 Energy Systems in Buildings

[1] Supporting documentation is located in Appendix B-Academic Program Assessment