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March 10, 2010

To: WASC Assessment Committee

From: Maria Pallavicini, Dean, School of Natural Sciences MP

Subject: Dean's Analysis of Faculty Assessment of Major Program Learning Objectives

Assessment of the program learning objectives (PLOs) for five majors and one minor in the School of Natural Sciences was performed by faculty groups led by Faculty Accreditation Organizers (FAOs). Each of the programs evaluated PLO#1 and one program also evaluated PLO #2.

In general the assessments were carefully developed and analyzed. The assessments in some programs (particularly earth systems science) need further development and refinement. In all programs, the faculty members indicated that they will modify the assessment process based on knowledge gained during this first round.

The amount of time the faculty spent on the assessment process is large. While I have not obtained estimates of the numbers of hours devoted to this process, its very clear that that the assessment process is a large time commitment for the involved faculty members.

The SNS has provided support for the assessment in multiple ways. The SNS has devoted a portion of Dr. Masa Watanabe's time to the effort and re-directed the effort of Alice Moua, Administrative Analyst, to assist the faculty. Dr. Watanabe works with the faculty in data analysis and reports. He holds the title of Director of Student Success for SNS and has responsibility for assessment of student progress in lower division core courses. The Provost has committed funds to support Dr. Watanabe in the future (63% 10-11, and 100% permanent beyond 2011). It is essential that this commitment be honored. Furthermore, while the SNS has re-directed a portion of the efforts of Alice Moua to assist in this process, it is at the expense of her other responsibilities/activities. The SNS requests 25% of Alice Moua's fte provision for assessment.

The needs and resource implications for each of the individual programs are summarized in the attached table. My assessment of the likelihood that each need can be met with current resources or whether new resources are needed is also shown below.

PLO Assessment Summary - March 1, 2010

Program	Gap/Need	Faculty Recommendation	Dean's Analysis	Dean's Recommendation	Dean's Priority
Applied Mathematics	Continue to collect evidence.	Continued CRTE interactions. Collaborate with IPA to create dynamic database of support. Coordinate data collection.	Evidence is key. Math has identified good strategies to address gap. School should/will support as feasible.	Continue support from school staff in data collection and analysis	High
Biology	Uncertainty and perhaps unevenness in quality of lower division courses, which constrain meeting learning goals in upper division courses.	LPSOE would be valuable.	LPSOE much needed at this point	Include LPSOE in strategic hiring	High
	Critical thinking needs to be further developed	Adjust the curriculum	Some ud classes may need to be smaller to allow more faculty interactions	Identify selected courses that would emphasize analysis and limit enrollments	Medium this year (plan for following academic year)
Chemistry	Assessment should have externally calibrated standards.	Purchase ACS exams.	Standardized exams would be helpful.	School purchase exams.	High
	Students lack skills and in communication and scientific ethics	New course to be developed	Agree	New course development and faculty teaching assignments. Instituted for next fall already	High
Earth Systems Science	Evolve the major	Continued support of SNS and increased support from SSHA, SoE and eventually SoM	Increasing student enrollments will garner more resources. ESS faculty need to be aggressive about recruiting students to the major.	Continue to support ESS major and minor evolution. This program needs to recruit students to the major.	High (assuming student enrollments increase). Low to moderate if enrollments continue to be low.
Physics	Student weakness in thermodynamics	Implement a new thermodynamics course	Additional instructional support.	Provide instructional support to enable course offering. Consider LPSOE within next three years.	

PLO Assessment Summary - March 1, 2010

Program	Gap/Need	Faculty Recommendation	Dean's Analysis	Dean's Recommendation	Dean's Priority
NSED minor	More students want fieldwork courses.	Add additional fieldwork only courses	Would be desirable.	Lecturer and staff management costs need to be assessed. This course will be taught by a new faculty recruitment in AY 09-10 and then ever other year thereafter.	Moderate (for the forthcoming year)
	Math teaching prep not as extensive as it should be.	Math NSED course needs to be distinct from science fieldwork	Agree this is desirable if there are sufficient student enrollments for both.	Project feasibility of two separate courses based on student enrollments.. Design a model to increase capacity for student enrollment/course to justify staff/lecturer time.	Moderate
	Lack of staff resources hampered data collection	More staff?	Data collection should be included in lecturer and SMI staff workload.	Include data collection in lecturer responsibilities. Include data analysis in SMI Project leader responsibilities. Need partial salary support for this effort from the Provost. Involve School Analyst and Director of Student Success in the analysis.	High