UC San Diego - WASC Exhibit 7.1
Inventory of Educational Effectiveness Indicators

Academic Program	(1) Have formal learning outcomes been developed?	(2) What are these learning outcomes? ___ Where are they published? (Please specify)	(3) Other than GPA, what data/evidence is used to determine that graduates have achieved stated outcomes for the degree? (e.g., capstone course, portfolio review, licensure examination)	(4) Who interprets the evidence? What is the process?	(5) How are the findings used?	(6) Date of last Academic Senate Review?
Program: ***Environmental Systems*** **Majors:** *Environmental Systems/Earth Sciences* *Environmental Systems/Ecology, Behavior and Evolution* *Environmental Systems/Environmental Chemistry* *Environmental Systems/Environmental Policy*	**Yes**	**Students graduating with a degree in Environmental Systems should be able to:** 1) *Define and explain the basic principles and concepts of chemistry, physics, biology, calculus, economics and political sciences.* 2) *Apply their understanding of the fundamentals of science and mathematics to the description and quantification of the interactions of the atmosphere, hydrosphere, lithosphere, and biosphere, including humans.* 3) *Plan and execute experiments that demonstrate the use and understanding of field techniques, modern instruments, accurate quantitative measurements, appropriate recording skills, safe lab and field practices, and appropriate use of computer and statistical applications.* 4) *Demonstrate interpretative skills including the ability to analyze data statistically, assess reliability, interpret results and draw reasonable conclusions.*	• *Outcome 1 is met successfully by completion of lower-division pre-requisites in each of the tracks i.e. Math 10A-C or 20A-D, Physics 1 sequence or Physics 2A-C, Chemistry 6 sequence , Chemistry 7L, Biology 3, Economic 1 etc. as required lower division courses and Political Science core course for all tracks.* • *Outcome 2 is met by completion of the core curriculum: ESYS101, ESYS102 and ESYS103.* • *Outcome 3 is met by completion of upper division required courses and electives in each of the tracks.* • *Outcome 4 is met by completion of a rigorous statistic course requirements for each of the tracks (i.e. Math 183, BIEB 100 or ECON100B) and through upper division coursework in laboratory and other hands-on courses.* • *Outcome 5 and 6 are met by completion of ESYS190A and ESYS190B, the senior project/internship requirement and presentation of results.* • *Outcome 7 is met throughout the coursework and in*	• *Associate Director of the ESYS major oversees requirements which are endorsed by the Director and affiliated faculty and have been approved by CEP.* • *The Associate Director acts on all requests/petitions for all variations of requirements.* • *The ESYS program collects student feedback on all courses. This material is reviewed by the Associate Director.* • *The ESYS program collects an exit survey of all majors just before graduatation. This material is reviewed by the Associate Director.* • *The ESYS program connects to alumni and other professionals in the field. We use regular alumni surveys and evaluations and surveys of other professionals in the field to assess the success of our graduates to follow their career paths.*	• *Individual course instructors use feedback to modify their courses.* • *The department periodically reviews the majors and restructures course requirements.*	*The ESYS major has a scheduled review in 2012-2013.*

		5) *Effectively communicate in written and oral form, demonstrating the ability to create an appropriate annotated bibliography and the ability to use effective presentation skills.* 6) *Demonstrate capacity to investigate, diagnose and propose solutions to environmental problems in complex multi-issue, multi-stakeholder milieus and create practical solutions to environmental issues through innovative practices as shown through capstone projects and successful completion of internships at relevant organizations.* 7) *Have a sense of community responsibility and develop awareness of scientific issues in the larger social context.* **Learning outcomes published:** *http://physicalsciences.ucsd.edu/ programs/esys/about.html*	*ESYS190B.*			