Program Name: M.S. in Marine Sciences

Faculty Member(s) Responsible for Data:
Ronald Coleman
Criterion 1: Quality of Curriculum, Instructional Personnel, and Curriculum Delivery

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Contemporary Curriculum

The curriculum at Moss Landing is cutting-edge, delivered by recognized leaders in their respective fields. The courses make extensive use of the marine resources of Monterey Bay and the extensive facilities that constitute the Moss Landing Marine Labs.
Use of Technology, as appropriate for discipline

Moss Landing has more technology than most departments at CSUS could ever hope for, probably more than the entire college of NSM combined. For example, the lab operates the R/V Point Sur, a 135-foot research vessel. They have extensive laboratory facilities (wet labs, dry labs, specimen collections) with massive amounts of instrumentation that allows them to do cutting-edge research ranging from an ultra-modern Scanning Electron Microscope, to Trace Element Instrumentation, Isotope Analysis, Diving Equipment, etc.
Criterion 2: Clearly Developed Learning Outcomes

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Because the program at Moss Landing is singular, i.e., all the graduate students are there to pursue the same degree, namely an MS in Marine Sciences by doing thesis research, the expectations and procedures for achieving this are clearly laid out. They are spelled out on the Moss Landing website http://www.mlml.calstate.edu/
Section: Advising Program and Graduation Success

Criterion 3: Advising Program and Graduation Success

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The faculty members at Moss Landing work extensively with their students and achieve a phenomenal success rate. For example, Gregor Caillet, now Emeritus since retiring in 2009, graduated over 100 Masters students during his career at Moss Landing. We do not have access to all their records, but they graduate many students. For example, in Fall 2010 alone, nine MS students graduated, while ten graduated in Fall 2007. From the most recent Moss Landing Report, their enrollment between Fall 2006 and Spring 2011 ranged between 76 and 111 graduate students in the program.
Criterion 4: Strength of Teaching Performance

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Because of the unique relationship this program has to each of the seven “home” campuses, their RTP process is necessarily extraordinarily complex. Each faculty member is in fact appointed to a “home” campus and must follow that campus’s policies and procedures in addition to those of Moss Landing. There are no faculty members at Moss Landing at this time who have Sacramento State as their home campus.
Criterion 5: Program History and Development Status

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Section: Impact, Justification and Centrality to University Mission

**Criterion 6: Impact, Justification and Centrality to University Mission**

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This program is critical to the Mission of not only CSU Sacramento, but to the Mission of the CSU system at large. It is a showcase for what the CSU can do, given the opportunity and resources. It produces vast numbers of marine scientists who go on to positions all over the country. The research generated by the student and faculty research is critical to our understanding of marine systems in California and the world at large.

While CSU Sacramento is a relatively minor player, we provide perspective and have been actively involved with the Board of Governance during the period 2006 until present.

Program Name: M.S. Marine Sciences
Section: Impact, Justification and Centrality to University Mission

Moss Landing was also critical in the formation of the highly successful COAST (CSU Council on Ocean Affairs, Science and Technology) system-wide affinity group for marine and coastal related activities in which Sacramento State faculty have been active participants. Partly because of our presence, COAST has recognized the importance of watersheds in marine dynamics. As a direct consequence, one of our Conservation graduate students recently received a COAST fellowship for her graduate research. Although she is not part of the MS in Marine Sciences program per se, this illustrates the value of our affiliation with this program.
Section: External Demand for the Program

Criterion 7: External Demand for the Program

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It is beyond the scope of this analysis to acquire and analyze the extensive data pertaining to this program. Qualitatively, the program has strong external demand.
Section: Program Size, Scope

Criterion 8: Program Size, Scope

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**Criterion 9: Internal, Non-major Demand for the Program**

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Because the program is taught entirely at Moss Landing Marine Laboratories, in Moss Landing, CA there is no other internal demand at Sacramento State for this program.
Criterion 10: Quality of Program and Resource Utilization

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Because Moss Landing is not in itself a degree-granting entity in the CSU system, degrees are actually granted by one of the “home” institutions. As such, a student must be accepted and enroll simultaneously in both a “home” institution, as well as at Moss Landing. Any changes to the program itself must also be approved not only among the faculty permanently housed at Moss Landing, but also by each of the “home” institutions. As such, the program must satisfy the rules, policies and procedures of ALL of the “home” campuses, no mean feat to say the least. At each “home” institution, a department is designated as the contact/liaison for the program.

At Sacramento State, the liaison is the Department of Biological Sciences. It is critical to understand, however, that a student in this program may have research interests much more aligned with Chemistry or Geology; nonetheless, they are administered through Biological Sciences. The complexity of administration as well as the distance between Sacramento and Moss Landing means that in reality very few Sacramento State students enroll in the graduate Marine Sciences program. In fact, at present we have none. The great bulk of students choose Monterey Bay as their “home” campus, with San Jose State as the next most common.

As far as quality is concerned, this program is regarded as one of the best Marine Science programs in the country.
Section: Revenue and Other Resources Generated by Program

Criterion 11: Revenue and Other Resources Generated by Program

The MS Program in Marine Sciences is a unique program whose context must be understood to be evaluated. The actual program, i.e., all teaching, takes place at the Moss Landing Marine Laboratories (MLML) located at Moss Landing, California. This facility, operated by the California State University, serves as an extension of seven CSU campuses, namely Sacramento, Fresno, Hayward, San Francisco, San Jose, Stanislaus and Monterey Bay (called “home” campuses) and is regarded as one of the jewels of the CSU system, for its unique combination of intense instruction and enormous research productivity in the marine sciences. It is a highly competitive program for prospective graduate students to try to gain admission.

Extensive information about Moss Landing Marine Labs is available on their website: http://www.mlml.calstate.edu/

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Moss Landing Marine Laboratory faculty pull in an enormous amount of grants, contracts, etc. For example, in fiscal year 2009-2010, the total grants awarded to Moss Landing faculty was approximately $19,000,000 (taken from Spring 2011 Financial Report to the Board of Governors, April 6, 2011).