

The California Maritime Academy

The Educational Effectiveness Review Report



Educational Effectiveness Review Report
Prepared by the California Maritime Academy

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THE EDUCATIONAL EFFECTIVENESS REVIEW

A note on the text:

This Self-Study (including its appendices and affiliated supporting documents) is submitted in hard copy and electronic form. Evidentiary support and reference for stated claims may come in a variety of forms – citation in endnotes, cross-references to tables, charts, rubrics or information located in other sections of the review, or material stored on Cal Maritime’s website. Much information used in this Review and material that is available to the campus community to help demonstrate educational effectiveness can be found at www.csum.edu/wasc. Additionally, a glossary of acronyms is provided in Appendix IX. In the electronic version of this document, text in blue indicates a hyperlink which will draw the reader to the appropriate external source. Like the compass rose which serves as the metaphoric emblem of our institutional identity, these tools of orientation should help navigate across and through various sections of this Review.

I. INTRODUCTION

The California Maritime Academy (referred later as Cal Maritime or CMA), nationally recognized by *U.S. News and World Report* and *Forbes* in their rankings of the best colleges in the United States, hereby presents its Educational Effectiveness Review to the Western Association of Schools and Colleges (WASC) in partial fulfillment of institutional reaffirmation of accreditation.¹ As evidenced from this self-study, Cal Maritime is committed to providing a superior education in business, engineering, operations and policy of transportation and related fields of the maritime world. Concomitant to this objective is the provision of knowledge, skills, experiences, and perspectives to enable students to make connections among disciplines and expand their intellectual capacities to take part in a wide range of human interests and activities.

It should be noted from the outset that Cal Maritime’s small size belies a complex structure: it is a campus of the California State University and thus enjoined with that system’s educational aims, objectives, and mandates, but it is also a federally sponsored maritime academy under the auspices of the U.S. Maritime Administration and, therefore, bound by specific regulations and requirements which are overseen by the U.S. Coast Guard for the certification of merchant marine officers under U.S. law and the International Standards of Training, Certification, and Watchkeeping (STCW). More autonomously, Cal Maritime values and maintains a system of beliefs and principles including the significance of experiential learning, the development of personal and professional ethics, and the importance of student-centered inquiry to confront the personal, moral, and social problems that are an inevitable part of human life.

II. SUMMARY HISTORY OF ACCREDITATION

Previous WASC Review

The last comprehensive review by WASC took place in 2001-2002. In defining its mission at that time, Cal Maritime articulated the student experience as a triad consisting of intellectual learning, applied technology,

¹ <http://www.forbes.com/2010/08/01/best-buys-colleges-money-opinions-colleges-10-value.html>;
http://www.forbes.com/lists/2010/94/best-colleges-10_California-Maritime-Academy_94055.html
<http://colleges.usnews.rankingsandreviews.com/best-colleges/vallejo-ca/cal-maritime-1134>

and leadership development. The WASC reaccreditation report of that cycle observed that work needed to be done to integrate these elements into the academic programs, and the WASC team viewed Cal Maritime as having set a vision, but had only begun to define its desired results without a clear plan for how to achieve those results.

Since then, Cal Maritime has undergone significant changes both in terms of growth (of facilities, students, and faculty) and maturity (a deepened awareness of the significance of intellectual learning, a better developed sense of scholarly activities, and a recognition of the importance of continuously refining pedagogical practices). In 2001 the school was just six years old as a campus of the California State University; subsequently, the student body has grown by over 50 percent. A new major in Global Studies and Maritime Affairs has been implemented, a Masters Degree in Supply Chain Management was approved, and a Masters Degree in Transportation Engineering and Management has been approved for implementation in fall of 2011. There have been major academic re-organizations including the founding of The ABS School of Maritime Policy and Management and major facilities improvements including the construction of a fifteen-million-dollar, state-of-the art Simulation Center for ship handling courses and training exercises and a new Technology Center with classrooms, laboratories, and faculty offices. The last decade has been witness to an exciting era in the history of Cal Maritime – one marked by expansion and new opportunities, but one which also saw growing pains in the struggle to balance the Academy’s proud traditions with the need to adapt to an increasingly complex and globalized 21st Century.

Current WASC Review Cycle

Cal Maritime’s Institutional Proposal was submitted to WASC in February of 2007 and in that document the campus took up the challenge of framing specific outcomes and objectives from a strategic planning perspective that took as its foundation the four points of the institution’s mission: Intellectual Learning, Global Awareness, Applied Technology and Leadership Development. Whereas the 2001 Self-Study was crafted around a “triad,” this current institutional assessment process is firmly grounded in quadrants: not only does this new schema better reflect the full nature of our mission, but it enables us to more deeply examine our commitment to global awareness. The Capacity and Preparatory Review was presented to WASC in February of 2009, and after the on-site visit in March of 2009, several recommendations from the CPR Report and Action Letter were received, acknowledged, and addressed in the spirit with which they were offered. This Educational Effectiveness Review (EER) will holistically demonstrate how these recommendations were embraced, but they are also treated with much more specificity in Appendix II. To note in brief: since the issuance of the CPR Report in May of 2009 and the Action Letter in June of 2009, Cal Maritime has:

- Drafted and approved an Academic Master Plan,
- Developed and implemented a Graduation and Retention Plan to monitor and improve student success,
- Revised and implemented a new Program Review Policy,
- Written and approved Institution-wide student learning outcomes (IW-SLOs),
- Developed a comprehensive assessment plan for measuring whether IW-SLOs are achieved,
- Assured that all academic programs have established Student Learning Outcomes,
- Conducted an Academic Senate retreat for all faculty on establishing a Culture of Evidence,
- Created a task force on diversity issues on campus which in turn established a Unity Council to work towards equality, fairness and understanding,
- Conducted major re-design of the entire campus web presence for better internal and external communication capabilities,
- Contracted with EBI, Inc. for better collection and management of co-curricular assessment data,
- Migrated educational technology platform to Moodle for more efficient educational data management and pedagogical practices, and
- Established The Office of the Registrar and hired a Registrar for more effective management of institutional data.

III. ORGANIZATION OF THIS EDUCATIONAL EFFECTIVENESS REVIEW

As noted above, Cal Maritime's EER is composed of four core essays and a concluding integrative chapter, each of which corresponds to an aspect of the campus' mission. In the final report, the CPR team found this plan acceptable "provided assessment strategies and data-gathering infrastructure to support findings is fully represented." Additionally, Cal Maritime's WASC Steering Committee felt this particular organizational strategy would prove effective because:

- It is explicitly tied to our mission, and it seemed both logical and philosophically sound to represent our educational effectiveness through the lens of what we strive to accomplish as an institution;
- It gives us a chance to examine how we've progressed since the last comprehensive review because it enables easily identifiable points of comparison; and
- It is a schematic which allows us to adequately articulate where specific Criteria for Review (CFR) are being cited.

There are, however, additional CFRs that are addressed in this EER, as well as specific recommendations by WASC which don't lend themselves neatly to our four essays, which are acknowledged in the appendices.

When the WASC Steering Committee met during the summer and fall of 2009 to discuss the content and framework of the EER and recognized the need to align the document with language within the Institutional Proposal, it was determined that each essay should conform to a specific structure. For each of our focal points, a series of questions, concerns and ideas were thought to be important. Ultimately, every essay was written with the following sections:

1. The introduction of each Essay is simply termed DEFINITION. In this section, we interpret the central term under inquiry - Intellectual Learning, Applied Technology, Global Awareness, or Leadership Development - according to our institutional philosophy which is in turn informed by the world at large and shaped for the needs of our students. This section answers the question, "How do we define 'it?'"
2. The following section of each Essay, termed VALUE, argues for the significance of each of these four entities in the context of institutional identity. In other words, *why* do we privilege these concepts over others? How do we see these entities as being truly essential in the educational development of our students? This section addresses the claims, "this is why we do 'it' and "this is why we think it's important."
3. The third section, PROCESS, describes in detail how we move the concept under discussion into the educational field itself. Now that we've established that, say, "Global Awareness" is important to our institution and we have determined a definition of the entity that works for us, how exactly do we teach it? What is the nature of the knowledge delivery system? Where is this done? This is *how* we do 'it.'
4. The fourth section is ASSESSMENT. Here attention will be given to the various assessment strategies, plans, and documents that relate to the entity in question. This addresses the statement, "How do we *measure* it?"
5. The penultimate section is DISCOVERY. As the logical development from the previous section, this area describes the analysis of the data generated by assessment. What do our findings say about how well we are accomplishing our mission? What are we doing well? What needs additional work? This is what we found out about "it."

6. The final section is ACTION. Once the data has been gathered and analyzed, what course of action should be taken? What resources need to be devoted to improve our educational mission? What new standards need to be put into place? This is what we're going to do with 'it' because of what we've found.

It was the opinion of the WASC Steering Committee that the organization of the Self-Study in this manner - with the WASC Standards and Criteria for Review integrated into these essays - would best reveal the particular educational strengths of our institution. It must be understood, however, that these mission-oriented categories certainly merge and comingle in many ways. "Global Awareness," for example, can be conceived as a manifestation of "Intellectual Learning." Likewise, attention to "Applied Technology" can lead to intellectual learning. "Leadership Development" happens in the classroom, on the athletic fields, and in the Corps of Cadets. A student in charge of a team of cadets within the Department of Marine Engineering Technology may apply his intellectual learning to the calibration of an instrument in the engine room of the Training Ship on its way to Busan, Korea. A Global Studies major participating in a simulated terrorist exercise with advanced technology may make an executive decision about foreign port security based on classroom lectures. Thus, while our EER parses out the quadrants of our mission, they are by no means discrete categories. When possible, hyper linking and cross-indexing are intended to deepen and reinforce these implicitly interdisciplinary connections. Additional information, document (including required data elements) and key assessment documents will be found under separate cover in the Appendices.

Appendix I	is the WASC Standards/CFR Matrix which cross references specific CFRs with the location they are addressed in the text.
Appendix II	addresses recommendations from the WASC CPR Review Report.
Appendix III	addresses 2008 Revisions to the CFRs.
Appendix IV	holds all the WASC required Data Exhibits, including the Table of Educational Effectiveness Indicators, The Inventory of Concurrent Accreditation and Key Performance Indicators, and the Summary Data Form.
Appendix V	is a copy of our College Portrait.
Appendix VI	holds all key organizational charts.
Appendix VII	contains key affiliated documents including the recent Academic Master Plan, the Graduation and Retention Plan, Unity Council documents and numerous assessment exhibits.
Appendix VIII	contains additional tables and figures referenced in the EER that are not embedded in the report.
Appendix IX	provides a glossary of the myriad technical and nautical terms that pervade the maritime environment.

IV. CHALLENGES AND OBSTACLES TO THE WASC REVIEW

It must be acknowledged that Cal Maritime has undergone some significant changes in administrative and academic leadership during this current review process. Change is inevitable, and change provides opportunity, but often there is a palpable disconnect which is accompanied by a loss of institutional memory. In particular, new administrators – capable and experienced – must quickly learn the intricacies of a specialized campus with overlaying functions and regulatory bodies.

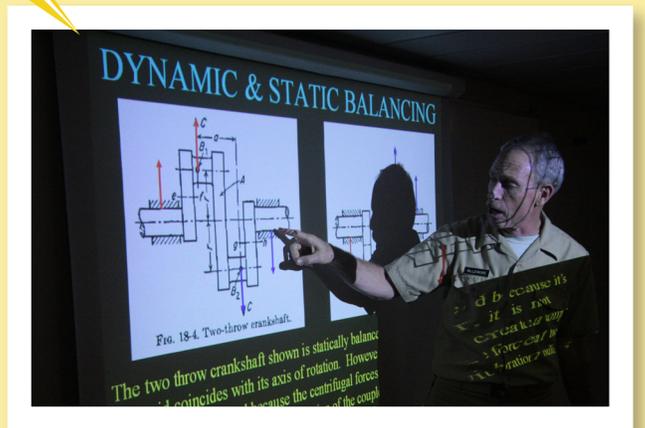
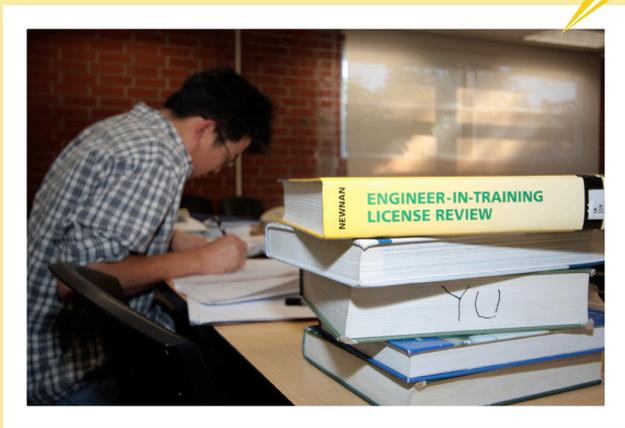
Since the Institutional Proposal was submitted in March of 2007 the Dean of Instructional Support, who also held the Chair of the WASC Steering Committee and the Post of Accreditation Liaison Officer, retired. Our Chief Academic Officer and Vice President of Academic Affairs (VPAA) left to assume a Presidency in the New York State University System. The interim VPAA was on campus one year before being succeeded by a new VPAA who also stepped into the newly-created role of Provost. The Vice-President of Marine Programs and Captain of the Training Ship retired. In addition, personnel from the following offices left for other posts: the Dean of Sponsored Projects and Extended Learning, the Dean of Students, the Commandant of the Corp of

Cadets and the Director of the Library. Fortunately, all these positions have been filled. Global, national and state financial crises led to the deepest budget cuts in the California State University system in decades. In 2009, The CSU had a reduction of more than \$584 million in state support, of which Cal Maritime faced cuts of \$2,984,270 or roughly a 17% reduction of the base general fund budget.² Cal Maritime, as with all other CSUs, instituted drastic measures to address the shortfall, including employee furloughs, student fee increases, and limits on student enrollment. These cuts have been deep, and affect virtually every segment on campus. Moreover, the mandated furloughs reduced faculty and staff salaries and time-based workloads by 10%, with a corresponding loss in productivity. This complicated and challenged Cal Maritime's commitment to demonstrating its educational effectiveness. Furthermore, due to the small size of the institution wherein one individual may perform several administrative and educational functions, budget cuts and furloughs have been disruptive.

Nonetheless, Cal Maritime overcame the challenges presented by fiscal crises by applying the full use of the abilities, energy and resources of the administration, faculty and staff. It is our hope that this review shall serve not only as testament to our educational effectiveness, but also function as a valuable learning tool for self-improvement. We remain extremely optimistic about the direction Cal Maritime is taking, even as we acknowledge the work that must be done to maintain and foster academic excellence.

² Documented by Steve Mastro, Budget Officer.

Intellectual Learning



Intellectual Learning

Definition

Citizens preparing for the globalized workforce of today require a wide range of skills, knowledge, and attitudes. These demands include not only a highly specialized knowledge in a particular field of endeavor but also a broader range of competencies and appreciations. In 2001, Cal Maritime introduced this conceptualization of intellectual learning, which is largely patterned after Benjamin Bloom's hierarchy of educational objectives:

“Intellectual learning begins with the acquisition of data and culminates in analysis, synthesis, and evaluation. The initial stage is the acquisition of key facts, terms, precepts, and methodologies in a discipline. When these are synthesized, internalized, and integrated, the learner is able to construct a conceptual framework of the field, then reason about new situations. One who has mastered such a process will be able to solve problems, apply and evaluate theories, and construct new and meaningful syntheses from facts within the field.

The levels of mastery involved in this process will differ according to the student's level of development. The beginning student learns key facts and theories. The intermediate student applies this knowledge to ever more challenging problems. Finally, the advanced student demonstrates the ability to think critically and learn independently, enabling him or her to acquire insights and accomplishments throughout life”³

The adherence to such a characterization of intellectual learning has served to guide the institution through the past decade, especially in its quest to find the proper balance between a philosophy of liberal education and the need for specialized technical and program-based knowledge in the undergraduate curriculum. As noted by WASC in 2002, while General Studies originally led the IL effort “all Departments ... must recognize that they have a responsibility to and ownership of the Intellectual Learning mission.”⁴ Not only have other departments embraced this challenge as evidenced in the mission statements of their respective programs, but what has changed most dramatically in the past decade is the implementation of the *means* by which we measure our success in attaining the “levels of mastery” of Intellectual Learning. Moreover, greater attention is now given to our students' ability to communicate this mastery. Regardless of specific academic program, *all* students have access to, and undertake, a quality education grounded in intellectual learning and the value of intellectual curiosity.

Value

The importance of Intellectual Learning for any educational institution should be self-evident: as with all other campuses of the California State University, Cal Maritime offers a curriculum and faculty that challenge students to attain intellectual achievements and its academic departments with their programs of majors and minors are primarily responsible for developing the highly detailed and specialized skills and knowledge called for in today's world. Additionally, Cal Maritime is committed to the tenets of *Access to Excellence*, the CSU Strategic Plan, especially in its call for each campus to provide a “high quality, learning centered and outcomes based education.”⁵ Of the many challenges to be encountered by the 21st-Century college graduate, chief

³ “Higher Education as a Triad: The Self-Study of the California Maritime Academy” (2001) p. 26.

⁴ Report of WASC Visiting Team 2002 p. 8

⁵ <http://www.calstate.edu/accesstoexcellence/executive-summary.shtml>

among them will be the need to adapt quickly to changing technological, sociological, and cultural movements in a globalized environment. The best preparation for adaptation is to develop the capacities of intellectual learning through the implementation of a curriculum that emphasizes critical thinking skills and knowledge. The Association of American Colleges and Universities (AACU) recently called on its member institutions to focus on the following five valued sets of educational outcomes: (1) analytical, communication, quantitative, and information processing skills; (2) understanding inquiry practices of the natural sciences, social sciences, humanities, and arts; (3) intercultural knowledge and collaborative problem-solving skills; (4) proactive sense of responsibility for individual, civic, and social choices; and (5) habits of minds that foster integrative thinking and the ability to transfer knowledge and skills from one setting to another.”⁶ Cal Maritime has embraced these educational outcomes as a means of strengthening its commitment to Intellectual Learning – especially in the development of our own learning outcomes-- and the subsequent sections of this essay demonstrate how this was accomplished.

Process

In Cal Maritime’s Institutional Proposal, under its “Approach for the Educational Effectiveness Review,” it is stated that “within the mission area of intellectual learning our objective is to ensure all degree programs are intellectually challenging. Expected outcomes include establishment of institutional student learning outcomes [CFR 1.2], expansion of student research opportunities [CFR 2.5], implementation of an academic program review process [CFR 2.7], and reassurance of compliance with State of California general education requirements [CFR 2.2].”⁷ Furthermore, the CPR visiting team, in their written report, expressed satisfaction “with this plan, but believes additional work is necessary on the assessment strategies and data-gathering infrastructure to support findings” (CPR Report 27). Toward this end, this section is broadly divided into five subsections focusing on the following elements which contribute to the mission of comprehensive Intellectual Learning on campus:

- A. Learning Outcomes on the Institutional and Program Levels,
- B. The Program Review: Process and Progress,
- C. Cal Maritime’s General Education Program: Past, Present and Future,
- D. The Campus Intellectual Environment, and
- E. Research on Student Learning and Student Research Opportunities.

A. LEARNING OUTCOMES ON THE INSTITUTIONAL AND PROGRAM LEVELS

Institution-Wide Student Learning Outcomes (IW-SLOs)

While the majority of our academic programs had student learning outcomes before 2008, there was no formalized articulation of specific educational expectations for the Cal Maritime graduate at the university level. A subcommittee of the Curriculum Committee was created to develop Institution-Wide Student Learning Outcomes (IW-SLO). The challenge was to develop outcomes that would best reflect the unique nature of the Academy and simultaneously encompass a set of more generalized competencies. This committee first identified the constitutive features in Cal Maritime’s academic and co-curricular programs and measured these features against cohort educational institutions across the country. The first draft of the IW-SLOs was deeply based on the AACU’s 2005 national initiative “Liberal Education and America’s Promise” (LEAP) as well as those learning-centered, outcome-oriented aspects of The California State University’s nascent Strategic Plan *Access to Excellence*. After successive revisions, a set of IW-SLOs was approved by the Curriculum Committee and ultimately the Academic Senate in May of 2009. In the summer of 2009, a

⁶ <http://www.aacu.org/about/index.cfm>

⁷ <http://www.csum.edu/wasc/> p. 12

preliminary assessment plan for the IW-SLOs was developed by the Accreditation Liaison Officer (ALO) and the Academic Department Chairs. In October of 2009, a delegation from Cal Maritime attended the WASC Academic Resource Workshop in San Jose, California with the specific purpose of submitting the learning outcomes and assessment plan for review by assessment experts. In consultation with several leaders in the field, our IW-SLOs were then re-organized to eliminate redundancy and simplify the assessment planning process. These were then presented to the entire faculty body in November of 2009 and approved. In the summer of 2010, the results of the first phase of the assessment plan were published, and with the assistance of the Summer Faculty Committee on Educational Effectiveness, an Institution-Wide Assessment Council (IWAC) was created to implement this more comprehensive and long term assessment plan. The IWAC Portfolio is located in Appendix VII, and in subsequent sections of this essay attention will be given to how these outcomes were embedded in an assessment plan, measured, and analyzed.

Program-Level Student Learning Outcomes (P-SLOs)

As noted previously, prior to the approval of the IW-SLOs, many academic programs had Student Learning Outcomes, but there were some gaps in coverage across the Academy. Surveys completed by Department Chairs from 2008 to 2009 revealed a clearer picture of the uneven development of learning outcomes on both the program and course levels. Armed with this knowledge, the Academic Senate – which sponsors an annual faculty-wide retreat on an issue pertinent to campus life – pledged support for the development and articulation of learning objectives across departments. In consultation with the ALO, the Director of Faculty Affairs, and the Center for Engagement, Teaching and Learning, the 2009-10 Senate Retreat was devoted to Student Learning Outcomes. Prior to the retreat, through questionnaires and rubrics, each academic program was reviewed and categorized as “Beginning”, “Intermediate” or “Advanced” in relation to its development of Program-Level Student Learning Outcomes and affiliated assessment plans. These distinctions were made in part by administering the WASC rubric on Educational Effectiveness Indicators to Department Chairs. In general, programs with external accrediting bodies were found to be at more advanced stages of measuring student success, while non-degree granting academic programs were at a more basic level. After plenary sessions devoted to understanding the significance and relevance of learning outcomes for measuring student success, assessment counselors from CSU Los Angeles and CSU Long Beach facilitated workshops with individual departments. The objective of the retreat was to ensure all academic programs have student learning objectives. This objective was accomplished. Program Student Learning Objectives are acknowledged on Cal Maritime’s main assessment page and are published on each departmental web page. Evidence and affiliated data for the implementation of these outcomes are listed in the Inventory of Educational Effectiveness Indicators. [See Appendix IV].

Of course, the development and publication of specific Program-Level Student Learning Objectives is only one step in demonstrating educational effectiveness. Every program has an assessment plan which situates and aligns its P-SLOs vertically between the course-level outcomes (most of which are published in individual syllabi and stored in a central repository through the Office of the Academic Dean) and with the IW-SLOs. A summary of this activity is discussed in the next section on the development of the academic program review process on campus.

B. PROGRAM REVIEW: PROGRESS AND PROCESS

The conclusion of the Report of the WASC Capacity and Preparatory visiting team cited the declaration in Cal Maritime’s Institutional Proposal to “ensure all programs conduct program review”⁸ as a worthy and appropriate objective, and the need for a sound program review process is reinforced by the WASC 2008 revisions to the handbook.

At Cal Maritime, several academic programs accredited by external regulatory bodies have already undergone recent program review, and the departments of Mechanical Engineering and Marine Engineering Technology

⁸ “Report of the WASC CPR” p. 26, www.csum.edu/wasc

have undertaken significant efforts to modify and improve their respective program assessment plans since the issuance of the CPR Report in May of 2009. In addition, a federally mandated audit by the U.S. Coast Guard for compliance with international Standards and Training for Certification and Watchkeeping (STCW) of those programs granting licenses took place in 2010. These plans will be examined in more detail in the “Applied Technology” Essay of the EER.

Cal Maritime policy governing academic program review falls under the purview of the Curriculum Committee. As a resource for completing Program Review, each department is encouraged to follow the Program Review Guide [see Appendix VII]. This Guide, initially modeled on ABET policies and procedures, was recently modified in order to incorporate many valuable criteria from the “WASC Guidelines for Good Program Review.” Department Chairs also completed the WASC Program Review Rubric prior to the revision of the Program Review Guide, and in light of those findings, other adjustments were made as well. Per CSU protocol, all campuses must complete Program Review for all academic programs, and this schedule must be submitted to the Chancellor’s Office on an annual basis. The Schedule of Academic Program Reviews for Cal Maritime is as follows:

1.1 Schedule of Academic Program Reviews

Academic Program	Review Commenced	External Review Completed	Internal or Campus Review Completed	Next Review
Business Administration:				
International Business and Logistics	2010-11			
Culture and Communications				2011-2012
Facilities Engineering Technology	2005-06	2006	2007	2012-2013
Global Studies and Maritime Affairs	2010-11			
Marine Engineering Technology	2005-06	2006	2007	2012-2013
Marine Transportation	2008-09	2009	2010	2015-2016
Maritime Operations				2012-2013
Mechanical Engineering	2007-08	2008	2009	2014-2015
Science and Mathematics				2011-2012
General Education Program				2011-2012

It is important to note that the program in Culture and Communication, the Department of Science and Mathematics and the Department of Marine Operations are non-degree granting academic entities. The General Education Program Review is conducted by the General Educational Committee, and this process has been aligned with the review of Science and Mathematics and the program in Culture and Communications. The 2011-12 date for these reviews will reflect and make use of data collected not only by the program reviews of Culture and Communications, Math and Science, and additional GE-identified courses, but also from the IW-SLO assessment results as well.

Finally, a crucial concern in the recent and comprehensive campus web redesign effort was the need to make Program Review processes and other assessment and accreditation documentation more transparent and available to the wider campus and public communities. Not only is there a highly visible link directly from the “Academics” page to “Assessment” which displays all Program Review resources but each individual departmental page also has its own menu with an assessment and (if appropriate) accreditation links contained therein.

C. CAL MARITIME'S GENERAL EDUCATION PROGRAM: PAST, PRESENT AND FUTURE

Cal Maritime is a unique institution, but it is also part of a greater whole, and its uniqueness should not separate it from the world at large. In order to be a well-educated, successful, and valuable participant in our rapidly changing global community, students need more than professional training. Prior to 2002, general education was handled primarily by the General Studies Department. In 2002 that department was split into two entities because of the increasingly complex evolution of the institution. At that time it was recognized that a committee was needed to oversee General Education matters. A Committee on General Education – subsequently formalized as a standing committee of the Academic Senate – was created, and a General Education Policy was drafted. The primary objective of the GE committee in the past few years has been to expand the program and to work with degree-granting departments to ensure CSU compliance with GE Subject Areas. Initially, the small size and limited resources of Cal Maritime presented challenges in adopting a GE program designed with larger public institutions in mind. Furthermore, the special dispensations granted to Cal Maritime as a State Maritime Academy under Education Code Title Five Section 090100, coupled with the high unit loads of many disciplines, presents challenges to the GE curriculum. Nonetheless, many positive changes have been made.

1. A General Education Policy built upon the CSU Subject Area Distribution Model (itself influenced from AACU's LEAP initiative) has been written to replace the earlier, more basic General Studies model.
2. This policy lists all GE Courses currently in the curriculum and has categorized them within the CSU five subject areas.
3. Technological registration systems and catalog curriculum sheets have been changed to accommodate this policy.
4. Mechanical Engineering and Marine Engineering Technology expanded their General Education requirements.
5. Marine Transportation has revised and expanded its General Education requirements.

The secondary objective of the General Education committee has been to develop a comprehensive assessment plan. While the dissolution of the General Studies Department initially created an organizational vacuum in GE assessment efforts, with the creation of IW-SLOs, and the coordination of efforts between the program in Culture and Communication and the Department of Science and Mathematics, a more efficient GE Assessment Plan is in development. Through the efforts of the Summer Faculty Committee on Educational Effectiveness, the GE Assessment Plan has been aligned with the Institution-Wide Student Learning Outcomes. The assessment of M/S and C/C – previously done autonomously – will now feed into the database of material collected by the Institution-Wide Assessment Council, and can be sorted for General Education purposes and objectives.

D. CULTIVATING AN INTELLECTUAL ENVIRONMENT TO SUPPORT TEACHING AND STUDENT LEARNING

While every institution of higher learning must encourage and sustain an intellectual climate, Cal Maritime faces specific issues that require consistent negotiation. First, like many small colleges, our academic departments are often comprised of just a few faculty members and care must be given to encourage faculty development and intellectual growth through a commitment to an intellectual community that resides outside of the campus walls. Second, the specialized mission of the institution means there are fewer “cohort institutions” with which to share concerns and compare academic notes. Third, the need and desire to recruit faculty with industry experience as opposed to a more traditional scholarly expertise is fraught with certain risks. To resist intellectual isolationism, therefore, efforts at Cal Maritime have been channeled towards cultivating an environment for both faculty and student to support and encourage intellectual thought. This section of the essay documents: D1) the use of resources to attract renowned scholars to Cal Maritime through

hosting national and international conferences; D2) the concerted effort by the Center for Engagement, Teaching and Learning, various departmental efforts, and the Office of the President to promote a variety of workshops and lecture series; D3) the position of the campus library as a center and resource for intellectual activity; and D4) the increase of student research opportunities and faculty research on student learning.

D1. National and International Conferences at Cal Maritime

In its bid to enhance Cal Maritime's position as a leading educational institution recognized for excellence in maritime and related industries, the campus has played host to several prominent national and international conferences. In the past few years, the following organizations have come to campus, bringing hundreds of scholars and teachers to enrich our faculty's connection to a greater intellectual sphere.

- *International Association of Maritime Universities*, www.iamu.org October, 2008. 9th Annual General Assembly of a consortium of fifty-two maritime academies across the globe.
- *North American Maritime Teaching and Learning Conference*. Inaugural Conference; March, 2007. Conference on pedagogy and scholarship exploring the challenges and opportunities of maritime education.
- *Women on the Water*, www.marad.gov. April, 2008. 3rd Annual Conference hosted by The United States Maritime Administration and The California Maritime Academy.
- *Maritime Security Conference*. July 2008. Cal Maritime hosted 150 representatives of the regional maritime industry for a conference sponsored by the U.S. Coast Guard.
- *North American Society of Oceanic History*, 28th Annual Conference; May, 2009. A forum devoted to the study and promotion of naval and maritime history.

D2. Workshops and Lecture Series

Multiple lecture series and workshops have been funded and offered through a variety of offices which are designed to increase thought-provoking and critical engagement with the global community on a variety of issues.

The Rizza Lecture Series - Made possible by a generous endowment grant from Rear Admiral Joseph P. Rizza (Ret.) who served as President of the California Maritime Academy from 1972 to 1983, the series is open to the public, and it is the goal of these lectures to expose cadets, faculty, staff, and industry leaders to new ideas and perspectives over a longer timeframe – ideas and views which will help stimulate thinking about where maritime industries are heading.

Faculty Development Workshops and Brown bag Luncheon Series - Funded by the Center for Teaching, Engagement, and Learning, these workshops and informal talks have multiple objectives. They allow faculty to share research and scholarly agendas with one another to cultivate intellectual and interdisciplinary collegiality; they allow faculty to share practical teaching tips based on pedagogical experience, and they serve as an opportunity for students and faculty to discuss social, political, and cultural current events that they may not otherwise have exposure to in their formalized curriculum. [See Figure 1.2, Appendix VIII].

The Maritime History and Culture Series - brings scholars and researchers to Cal Maritime for purposes of expanding the intellectual realm of all students in order to situate their maritime education in a broader context. [See Figure 1.3, Appendix VIII].

The Academic Senate Retreat, held every January between terms, is an instrumental tool in developing and maintaining an intellectual environment for the campus. While not every retreat is devoted specifically to a

field or element of Intellectual Learning, consistently the workshops, speakers, and agendas have served to deepen faculty commitment to Cal Maritime's mission. Agendas and minutes for all Retreats can be found at http://www.csum.edu/academics/AcademicSenate/CMA_AcademicSenate.asp.

D3. The Library as Center and Resource for Intellectual Learning

The Cal Maritime Library is committed to providing access to essential information resources through onsite collections, electronic networks, and cooperative agreements. Regarding its onsite collections, the Library strives to be a pre-eminent maritime library with exceptional holdings in the areas of marine engineering, marine technology, and marine transportation. In addition to its print and audiovisual collection, the Library provides access to approximately 40 article and reference databases, both general and specialized, for the use of students, staff and faculty. We are members of the OCLC Pacific Network of cooperating libraries that provides access to the holdings of essentially all the academic, public, and special libraries in the United States.

The Library's Information Fluency Program is dedicated to ensuring that all graduates are able to effectively navigate the vast amount of information available in a digital society. To meet this goal, the program employs a variety of instructional methods designed to meet the general and discipline-specific needs of students and faculty. These methods include curriculum-integrated information fluency sessions, a full-term class (LIB 100: Information Fluency in the Digital World), reference assistance, and individual research consultation. In order to track how efficiently information fluency instruction in any given discipline addresses the ACRL Standards, the Library uses a method called "curriculum mapping." Curriculum maps are reviewed every two years and shared with department chairs in order to plan for adjustments in course content. Student learning in the Information Fluency Program is assessed via a standardized test that is administered to entering freshmen and then again to graduating seniors. The assessment of the Informational Fluency Program is attached in Appendix VII.

In addition to its on-campus facility and services, the library has established a core collection of books and electronic full-text materials for the library located on the Academy's Training Ship *Golden Bear*. The library on the *Golden Bear* is staffed with a professional librarian for the full length of both training cruises, to provide reference assistance and readers' advisory services. During the 2010 Cruise One, the ship librarian facilitated a book group for all interested students and faculty.

D4. Faculty Research on Student Learning and Student Research Opportunities

In part because of Cal Maritime's need for highly specialized instructors which draws faculty from industry as well as traditional academic fields, in the past decade the institution has looked toward Ernest Boyer's influential *Scholarship Reconsidered* as a model for wedding scholarly pursuits to engaged teaching at the undergraduate level. As Boyer writes, "the most important obligation now confronting the nation's colleges and universities is to break out of the tired old teaching versus research debate and define, in more creative ways, what it means to be a scholar. It's time to recognize the full range of faculty talent and the great diversity of functions higher education must perform. For American higher education to remain vital we urgently need a more creative view of the work of the professoriate. In response to this challenge, we propose in this report four general views of scholarship - discovery, integration, application and teaching. In suggesting these activities we underscore the point that our intention is to spark discussion, not restrict it."⁹ This particular relationship between "scholarly activity" and "teaching" can be viewed from two perspectives that mirror and reinforce one another: faculty research on student learning and student research based on their educational interests. In brief, as this research contributes to the overall environment of intellectual learning (and also contributes to the scholarly field of educational reform), a representative sample of faculty

⁹ Ernest Boyer, "*Scholarship Reconsidered: Priorities of the Professoriate*" <https://depts.washington.edu/gs630/Spring/Boyer.pdf>

publications and presentations are included in Figure 1.4, Appendix VIII. Additional recent scholarly work in experiential learning is documented in the next essay, “Applied Technology”.

Additionally, student research opportunities are also a hallmark of a campus committed to Intellectual Learning, and this, too, was an objective of Cal Maritime in the Institutional Proposal submitted to WASC. While financial shortfalls have limited or in some cases completely suspended internal and external funding opportunities for research, we are committed to this endeavor, with the following as examples of student research

- *International Association of Maritime Universities Student Program.* Every year that a student program is offered, Cal Maritime sends students to participate fully in the Annual General Assembly of this prestigious organization. Two to five cadets have been sent to Maritime Academies across the world, including Busan, Korea; St. Petersburg, Russia; Dalian, China and Alexandria, Egypt. Student Research is usually presented in the General Assembly itself in front of all conference participants.
- Student presentation: “Transnational Crime in Asia” at the Western International Studies Association in Los Angeles, September 24-25, 2010.
- Student participation in the CSU Undergraduate Research Competition, 2007 and 2008 (continued participation has been difficult as the competition is always held during our graduation or after our spring semester has completed for the year).
- Student research assistance on faculty publications (both paid from research grants or unpaid, as volunteer research assistants); for example, see D. Nincic, "The Radicalization of Maritime Piracy: Implications for Energy Security," *Journal of Energy Security*, November 2010, www.ensec.org (student assistance is acknowledged on the title page).
- Capstone Projects. Certain majors require a capstone project in partial fulfillment of requirements for the degree. In the Global Studies and Maritime Affairs (GSMA) Senior Seminar, all students are required to successfully complete a two-semester course sequence (GMA 400 and 401) that culminates in a 40-page thesis of original research in the social sciences. For the Mechanical Engineering Capstone Projects – Senior ME students are required to successfully complete a three semester course sequence to identify, research, design, analyze and fabricate a product to satisfy a perceived customer/client need. This effort results in a comprehensive design reports at the end of the sequence which are bound and archived in the Cal Maritime Library.

Assessment

In the previous section, attention was given to the various processes - either well-established or recently put into place – which serve to create and promote an environment of Intellectual Learning on this campus. This section describes the various assessment strategies, plans, and documents that serve to help this institution measure its effectiveness in student success as it can be applied to the very broadly-defined category of Intellectual Learning. The assessment of Intellectual Learning draws from many sources and occurs on many interdependent levels. First, each academic department promulgates its own internal assessment plan as part of its Program Review which draws upon data generated from coursework. (Much of this assessment material will be discussed in subsequent “Assessment” sections of later essays in the EER.) Second, the assessment of Cal Maritime’s Institution-Wide Student Learning Outcomes provides an additional, comprehensive measurement of student intellectual development. Third, mechanisms are in place to continually monitor and evaluate the efficacy of faculty instruction and faculty resources which help determine the quality of the intellectual dimension of student learning.

Responsibilities of the Institution-Wide Assessment Council (IWAC) include notifying the campus community of the learning objectives to be assessed prior to the commencement of the academic year, identifying and notifying appropriate faculty and instructors for assessment practices, collecting and organizing assessment data, maintaining the IWAC database, publishing the results of the assessment cycle, and recommending actions to be taken based on assessment findings. This council also proposes revisions to the Institution-Wide Student Learning Outcomes and the assessment cycle as needed, and liaises with academic departments, program review coordinators, the WASC Coordinator and other accrediting bodies. Any instrument used across all academic disciplines for the purposes of assessment will inevitably be cast in broad terms; however, by aligning this “top-down” assessment process with “bottom-up” course and program level assessment processes, the two systems aim to cast two nets, which together provide a deep, meaningful analysis of learning outcomes. Also, the ease in pulling information from individual program reviews to supplement IWAC data serves to paint a more sophisticated portrait of specific educational strengths and to identify points for improvement. The IWAC Portfolio in Appendix VII contains evidence which demonstrates the process by which assessment material is collected, maintained, and sustained for optimal efficiency.

Case Study: The Assessment of Written Communication. In order to demonstrate how program assessment tools, IWAC assessment, and national benchmarking information systems can work in concert with one another, this essay will present a case study of the recent assessment of written communication. In its endeavor to further develop a comprehensive culture of evidence for effective student learning, the faculty of the Writing Program, in conjunction with the Institution-Wide Assessment Council, set out to measure written communication through a variety of assessment instruments, including Graduate Writing Exam data, College Learning Assessment (CLA) examinations, cross-disciplinary and campus wide surveys, and data collection for multiple types of student writing. The results – displayed in the next sections of this essay under “Discovery” and “Action” (and further documented in its entirety in Appendix VII) -- yielded a multi-faceted, aggregated and disaggregated analysis of student performance in written communication.

Intellectual Learning in the Classroom. In addition to course, program, and institutional assessment of specific competencies, Cal Maritime utilizes a variety of campus-wide assessment tools and agencies to measure educational effectiveness. For a direct indicator of teaching effectiveness, Cal Maritime uses the SUMMA Corporation’s “Student Opinion of Instruction” surveys. In accordance with the Collective Bargaining Agreement of the California Faculty Association, instructors submit SUMMA review forms for no fewer than 50% of the courses they teach. From the Director of Summa, concerning the national database,

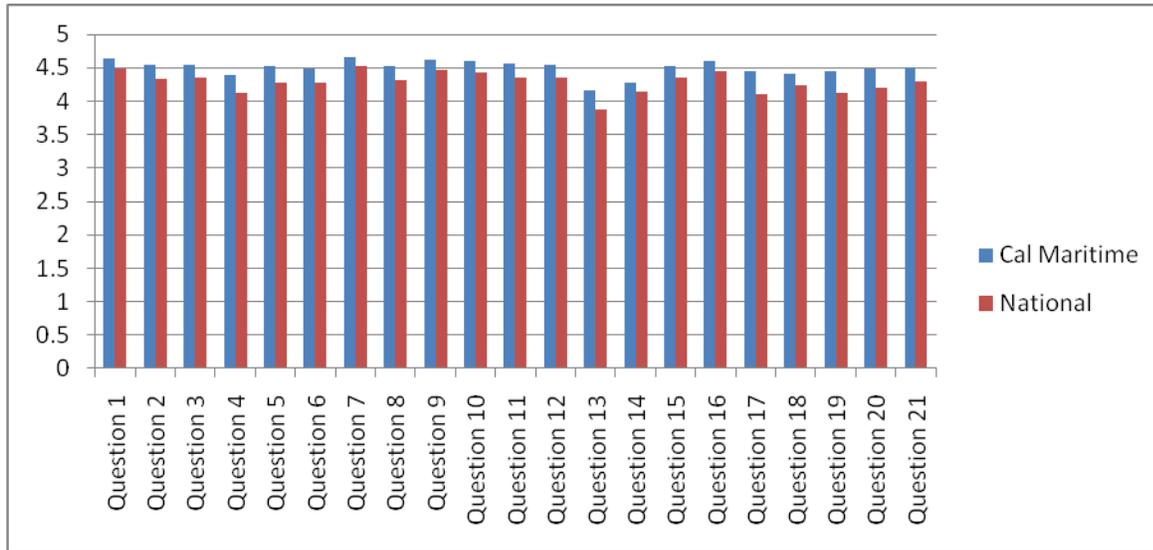
“More than eighty percent of the colleges and universities in the database are public institutions. The private institutions tend to be smaller than the public schools and we estimate that more than ninety percent of the student responses are from the public institutions. [...]. The geographic distribution of institutions that use Summa closely matches the population distribution within the United States. With the exception of a very small number of schools, the colleges and universities that use Student Opinion of Instruction™ conduct the survey in all of the classes that have more than five students and at all levels [...] The comparison database generally reflects the size distribution of institutions of higher education in the United States.”¹⁰

Aggregated data from spring 2009 and spring 2010 show that Cal Maritime is consistently above the national mean in all categories. Individual faculty members have access to these evaluations, and in consultation with their department chair, use them in the improvement of their teaching.

¹⁰ Email, 7/2010, SUMMA Corp.

Fig 1.5 Cal Maritime Aggregated Student Opinion Forms Spring, 2010

2,411 student responses = 73.6% participation



Questions posed in teaching evaluation Student Opinion Forms:

- | | |
|---|--|
| 1. The clarity and audibility of the instructor's speech are excellent | 12. Course objectives are being achieved |
| 2. The contents of the assignments contribute to my understanding of the subject | 13. During the term, I looked forward to attending this class |
| 3. The requirements of the course (projects, papers, exams, etc.) were explained adequately | 14. Compared with other courses on this level carrying an equal amount of credit, the effort I put into this course is as much as in other courses |
| 4. The instructor's presentation often causes me to think in depth about this subject | 15. Course objectives have been expressed clearly |
| 5. The instructor has adequate means for evaluating my learning | 16. The instructor demonstrates a personal commitment to high standards of professional competence |
| 6. The methods being used for evaluating my work (such as tests, projects, etc.) are reasonable | 17. The instructor provides useful feedback on student progress (identifying strengths and weaknesses) |
| 7. Adequate opportunities are provided by the instructor for me to ask questions | 18. In this course, I am learning much |
| 8. The instructor is teach the course material or skills clearly | 19. The out-of-class assignments are challenging |
| 9. The instructor seems well prepared | 20. The instructor relates underlying theory to practice |
| 10. The instructor seems to care about my learning | 21. Overall, I rate this a good teacher |
| 11. The course appears to have been carefully planned | |

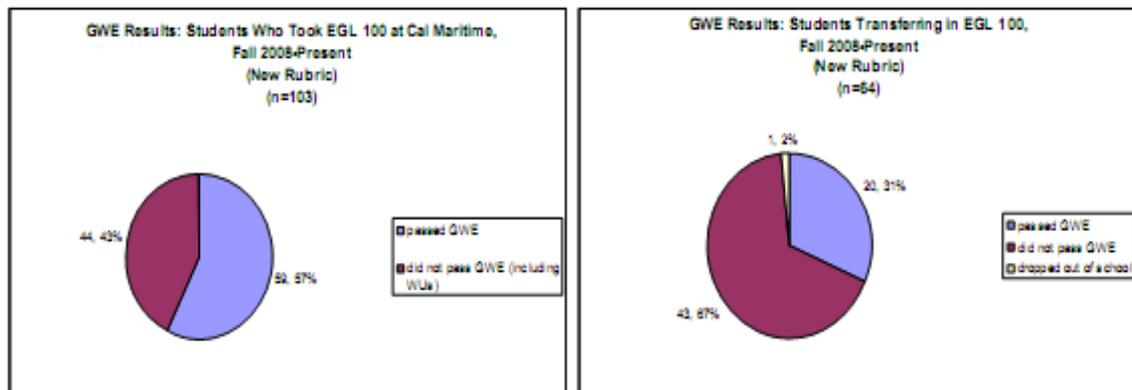
Discovery

Given the various assessment tools and measurement strategies enumerated in the previous section, the next and obvious questions concern the cumulative results: what did we find out? For the specific assessment of student learning, each academic department's findings are analyzed initially by the department itself, and these findings are located in their respective assessment plans with the results located in those plans and fed into the IWAC database when appropriate. Due to space limitations, this section of the essay will track one specific student learning outcome – the ability to coherently and persuasively share information through written communication – and the discoveries revealed via internal and external assessment tools.

CASE STUDY: THE ASSESSMENT OF WRITTEN COMMUNICATION

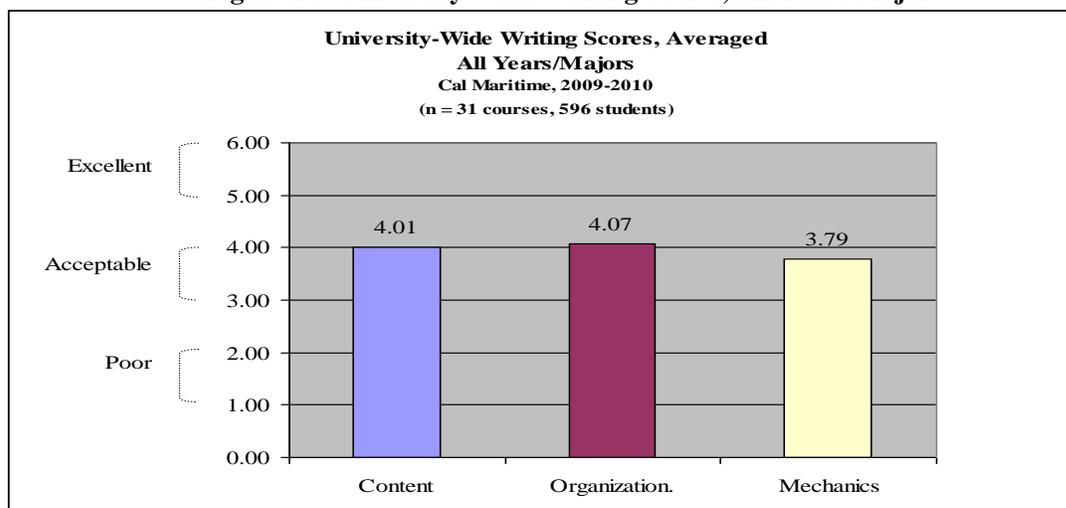
One keystone in the assessment of written communication at Cal Maritime is the Graduate Writing Exam, which is administered in partial fulfillment of the Graduate Writing Assessment Requirement of the CSU. In 2009, Cal Maritime participated in the College Learning Assessment examinations, which provided information on the writing skills of first year and fourth year students. It was discovered that while our incoming students performed satisfactorily, these skills do not improve in alignment with benchmarks. As a result of this information, the grading rubric for the GWE was tightened considerably, resulting in more junior-level students needing to fulfill the GWAR through the completion of an upper-level writing course. (A full description of the GWE/GWAR can be found on page 61 of the Cal Maritime General Catalog 2009-2011.) As an example, the following charts show pass rates using the “new” rubric which are then sorted by students who have completed their introductory composition class at Cal Maritime versus those who have transferred in that requirement. The results provide us with quite useful information concerning lower-level transfer credits.

Figure 1.6 GWE Passing Rates for Transfer Credit of EGL 100



Additionally, given that written communication was the Institution-Wide Student Learning Outcome up for assessment in 2009-2010, an initial survey was distributed to determine: 1) the kind and amount of student writing required in all classes offered in an academic year and 2) faculty opinions on the quality of student writing. A simple rubric was devised to be used across disciplines and across the curriculum; the results of both the survey and the rubric were then inserted into the Writing Program's annual assessment report. These data were disaggregated further by upper and lower division courses, by GE and major, by department, with the entire report and affiliated charts found in Appendix VII, Section J. The following chart indicates the writing scores averaged from all majors and years.

Figure 1.7 University-Wide Writing Scores, All Years/Majors



Thus, this exhibit should adequately demonstrate how an assessment processes on campus work from collecting the data to displaying the data for optimal analyses, to recording what we learn and discover from these data. The following section of the essay, “ Action”, will continue this case study in order to demonstrate how these finding are used to increase effectiveness.

The above section documents, in part, how the IW-SLOs works in conjunction with Program objectives and how a variety of tools can be used to produce a single report. Discoveries for program level student learning outcome are located in program reviews, based in independent program annual learning reports, and are embedded in the program reviews of each department. Recent examples of program level assessment will be demonstrated in subsequent essays; particularly in “Applied Technology” and “Global Awareness.” Several examples of departmental assessments, including The Mechanical Engineering Assessment Manual and The Information Fluency Program annual assessment report are located in Appendix VII, Section J.

Action

Actions based on assessment material outlined above show how Cal Maritime has engaged with the evidence tied to Intellectual Learning, and how it proposes to act on evidence recently collected. This section of the essay is divided into two parts. The first is an example of the plans developed in response to the analysis of data derived from the Institution-Wide Assessment Plan (this involves a continuation of the exhibit began in the previous section). The second part of this section will describe and summarize a set of actions taken on the institutional level which were informed by other, interconnected assessment processes enumerated above.

Actions on Institution-Wide Assessment of Student Learning Outcomes

Again, to carry through with the case study articulated in the previous section, what follows is the continued exhibit of the case study of our “Institution-Wide Assessment of Written Communication.

Below is an excerpt from the Assessment report on Written Communication (itself modeled after the John F. Kennedy University “Annual Learning Results” template), specifically Table 5 of our report, entitled: “Now What? (Plan to Improve Our Program)”. This table lists proposed changes, rationale

for the changes, those responsible for implementing changes (including the vetting to stakeholders and shepherding changes), budget integration, improvement of target goals and evidence of effectiveness.

Fig 1.8 Excerpt from 2009-2010 Annual Writing Results

	Proposed Change #1	Proposed Change #2	Proposed Change #3
Proposed Changes	Faculty poll, asking: <ol style="list-style-type: none"> 1. Definition of mechanics 2. What kinds of mechanics issues are being seen on the upper-division level. 3. What writing genres are common to upper-division writing. 	More specific assessment of mechanics issues on the lower-division level, across the Culture & Communication program, and implementing changes in the relevant course(s).	A plan for improving GWE pass rates for more technical majors (especially FET students) should be developed.
Rationale for Proposed Changes	<ol style="list-style-type: none"> 1. It is not known whether faculty subscribe to a common definition of writing mechanics. 2. It is not known what kinds of mechanics problems are occurring on the upper-division level, and why. 3. It is not known whether these errors are due to higher-order writing conventions (e.g. complex sentences), conventions of genre (e.g. lab reports), or both. 	<ol style="list-style-type: none"> 1. It is not known how much and what kind of mechanics instruction is occurring in C&C courses, especially EGL 100. 2. What is being taught in the C&C program is not adequate for upper-division students in the majors. 	<ol style="list-style-type: none"> 1. Students in technical fields fall well below the average in passing the GWE.
Proposed Completion Date	Fall 2010	Fall 2010-Spring 2011	Fall 2010-Spring 2011
Stakeholders Involved	C&C Program	C&C Program	C&C Program; core faculty
Vetting to Stakeholders	Writing Program Coordinators	Writing Program Coordinators	Writing Program Coordinators
Shepherding Changes	Writing Program Coordinators	Writing Program Coordinators	Writing Program Coordinators
Budget Integration	N/A	N/A	IWAC?
Incorporating Changes	Writing Program Coordinators	Writing Program Coordinators	Writing Program Coordinators
Improvement Target Goals	Better skill transference in mechanics, between lower and upper division writing.	Equal coverage of common mechanics issues in lower-division composition courses.	Less disparity in the pass rates of students majoring in technical fields, on the GWE.
Evidence of effectiveness	Less disparity between lower- and upper-division mechanics scores, on the next iteration of the UW writing assessment.	Less disparity between lower-and upper-division mechanics scores, on the next iteration of the UW writing assessment.	Less disparity in the pass rates of students majoring in technical fields, on the GWE.

The final table of this report documents several reflections on the assessment process itself. One of the issues the IWAC team has struggled with is a desire to avoid redundancy of practices, and this table reflects those concerns.

Fig 1.9 Excerpt from 2009-2010 Annual Writing Results

	Reflection #1	Reflection #2	Reflection #3
Strengths	A large amount of data/multiple assessment tools yielded a great deal of information.	Assessment was developed and implemented efficiently and in a timely manner.	Assessment tools were developed in accordance with UW- and Program SLOs.
Modifications	Assessment tools need to be fine-tuned to ensure that all data is statistically significant.	Faculty buy-in needs to be stronger. In some cases, data samples were too small.	Technology support needs to be more consistent/robust. Data collection/analysis tools needs standardization.

Other Actions Impacting Intellectual Learning Taken As a Result of Institutional Assessment and Planning Processes

The institution is also continuously seeking ways to improve academic effectiveness, including the following:

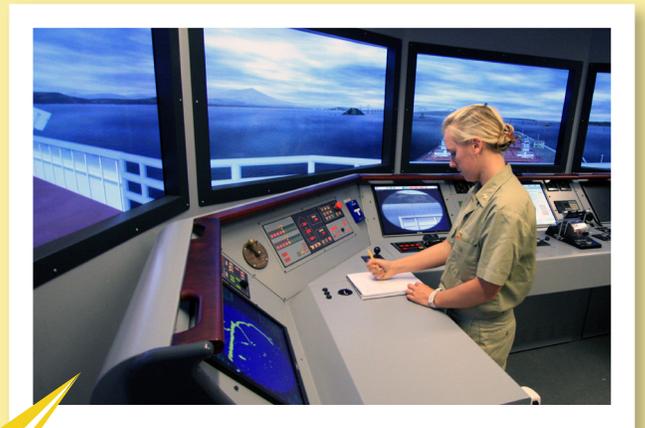
Academic Department Re-organization for more development and efficiency. A \$3 million gift in the fall of 2008 allowed Cal Maritime to create its first school: The ABS School of Maritime Policy and Management. The ABS School pulled together three academic entities – Business Administration/International Business and Logistics; Global Studies and Maritime Affairs; and Culture and Communications – into a single organizational structure with the purpose of deepening the educational opportunities and experience for the students, and to engage the faculty in more cross-disciplinary exchanges and initiatives. The creation of the ABS School addresses the need expressed by our External Advisory Board and industry partners that our graduates have solid leadership skills as well as education in maritime policy, corporate marine finance and insurance, logistics and environmental responsibility. The vision of the ABS School of Maritime Policy and Management is to be a center of excellence in issues of international business and management; global maritime policy; and culture, communications and social responsibility.

Creation of the Academic Master Plan. This plan, researched and drafted over an eighteen month period, provides several actions to be taken toward the sustainability and growth of Intellectual Learning as well as ensure student success. The Academic Master Plan in its entirety is attached as Appendix VII.

Development of Master of Science in Transportation and Engineering Management. Cal Maritime's proposed Master of Science in Transportation and Engineering Management is an advanced course of study in business and management fundamentals combined with specialized preparation for career advancement in Engineering, Transportation, or Humanitarian/Crisis Management. The degree is a natural outgrowth of Cal Maritime's vision and mission statements ("leading educational institution," and "provide continuing education opportunities"), and its core undergraduate strengths in marine transportation and engineering, combined with a growing emphasis on social responsibility being developed and expanded in the undergraduate curriculum. While humanitarian and disaster relief are not current strengths of Cal Maritime's course offerings, these areas are fundamentally maritime and transportation-based, and should be part of the work done by a maritime institution. This Master Program has recently been granted Approval by WASC in November, 2010.

Intellectual Learning is and shall remain a cornerstone of The California Maritime Academy experience for student success. The assessment and actions based on assessment of intellectual learning practices on campus are both continuous and episodic. The implementation of the Institution-wide Plan to assess student learning outcomes was important, and the need to develop this plan with a sustainable mechanism and broad connections to program level outcomes was equally significant.

Applied Technology



Applied Technology

Definition

The definition of Applied Technology at Cal Maritime has evolved with the institution. In its original role as a training school for merchant mariners, Applied Technology was the aspect of students' education concerned with learning practical skills, techniques and operational experience applicable to the profession, largely through direct experiential methods. As the institution has evolved, this aspect of a mariner's education has not diminished in importance. However, the idea of what is described by the term "Applied Technology" has broadened to encompass the mission of an institution with broader educational objectives and an increased variety of majors and departments. In its current use, the term "Applied Technology" might be described as the use of direct experiential methods, both in classes and through immersion in professional environments, with the objective of learning the skills, techniques and attitudes appropriate to a student's chosen profession, particularly those aspects of a profession that are difficult to learn through traditional academic coursework. As expressed in Cal Maritime's mission statement, our intention is that Applied Technology augment, enrich and supplement traditional classroom lecture and discussion, which we categorize as "intellectual learning". The outcome of these activities consist of graduates who have enhanced professional abilities that allow them to step into their roles in the maritime industry, but also in other industries, government or other areas.

Value

The importance of Applied Technology in the learning environment of Cal Maritime has been a natural extension of its origins as a school for professional mariners, but it would not be justifiable to incorporate its use institution-wide solely on this basis. We must ask what the potential benefits of these activities are and must also assess to what extent we are seeing these benefits.

In the educational community, there is persuasive evidence that the activities we describe as Applied Technology can enhance student education, though much of the research is at the secondary, two-year post-secondary and vocational level. These activities are also extensively used to good effect in the training of professionals in teaching, nursing and other professions, in addition to our own long experience with training professional mariners.

Here at Cal Maritime, we seek to have students' engagement in the practical applications of knowledge add a number of important dimensions to their learning. These include enabling students to utilize the knowledge they acquire in real-life situations, develop their abilities to use technical tools, increase their confidence in mastering new tasks, synthesize and apply knowledge gained in various classes, gain job skills, practice decision-making, and understand the job requirements of a professional. To more clearly align these expectations with our mission, we have identified institution-wide learning outcomes to which Applied Technology contributes.

Specific institution-wide student learning outcomes associated with Applied Technology include the following:

IWSLO-F: Demonstrate competency in discipline-specific, maritime-related fields.

IWSLO-G: Define a specific need for information; then locate, access, evaluate and effectively apply the needed information to the problem at hand; and effectively use simulators, computers and

computing applications in order to create, access, store, process, analyze and communicate information.

Process

In Cal Maritime's academic programs Applied Technology takes place in many venues, some discipline specific and some more generic. These venues include computer centers, simulators, science and engineering labs, technology labs, capstone and special projects, operational labs (such as small boat operations and firefighting), the bridge and engine room of the Training Ship *Golden Bear*, and summer experiences that include internships with government and industry, cruises on commercial shipping, and exposure to international business and logistics through travel to foreign sites. Activities included in this category can take such forms as (a) kinesthetic activities such as operating or repairing systems or equipment, (b) problem solving and skill application using either simulation or actual immersion in real situations and organizations, (c) laboratory work that demonstrates the application, strengths and limitations of theory and modeling through the use of controlled environments, and (d) design projects and other capstone experiences which call upon students to integrate their knowledge and abilities and demonstrate their professional capabilities in a substantial manner.

These activities require considerable support in order to be effective. Since Cal Maritime became a campus of the California State University system in 1995, there have been a number of significant capital investments in the facilities that enable experiential learning at the Academy.

- A new engineering laboratory building with chemistry, physics, fluid mechanics, engineering materials and instrumentation laboratories was completed in 1998.
- A technology center with new facilities for instruction in electrical circuits and machinery, electronics, refrigeration and air conditioning, and power engineering opened in 2004. A full-mission diesel plant simulator employing modern system control technologies found in the merchant fleet was installed in the center. The machine shop adjacent to the Technology Center was refurbished, and a welding laboratory was added at the same time.
- The Simulation Training Experiential Learning & Research Center (STELAR) opened in 2008. The Center houses classrooms, conference meeting rooms, simulator instructor stations and the latest in simulation equipment and software including:
 - Two 360° View Full Mission Bridge Simulators with TRANSAS NTPRO software
 - One 225° View Full Mission Bridge Simulator with TRANSAS NTPRO software
 - An 8-station integrated bridge electronic systems technology (IBest) Lab with Radar/ARPA/ECDIS Simulators operating with TRANSAS software (with view screens)
 - A Multi-Threat/Hazard Crisis Management Center with simulation support provided by the TRANSAS PISCES2 Crisis Management Simulation System. The Crisis Management Center incorporates geographic information system (GIS) integrating hardware, software, and data for capturing, managing, analyzing, and displaying all forms of geographically referenced information. Cal Maritime became a member campus of the California State University Consortium for Geographic Information Science in 2010 and participates in a software site license with Environmental Systems Research Institute (ESRI) for GIS software, and ERDAS for remote sensing and image processing software.
 - A full-mission Steam Plant Simulator with HAVEN AUTOMATION/MPRI software
 - A full-mission Diesel Plant Simulator

- A Liquid Cargo Handling Simulator (LCHS) with LNG capability with TRANSAS software.
- STELAR offers unique opportunities for training in Bridge and Engine Room Team Management, Security Response, Crisis Management, Oil Spill Response, Ship and Tug Handling, Radar/ARPA and much more.
- The ABS Lecture Hall opened in 2010. This facility houses a state-of-the-art lecture hall and conference room. Both rooms are equipped with white boards, SMART Boards, computers, Internet connections, DVD/VHS players and video projectors to enable multi-media presentations.
- All Cal Maritime classrooms are outfitted with white boards, overhead projectors, computers, Internet connections, DVD/VHS players and video projectors to enable multi-media presentations. The Engineering Laboratory Building houses a Distance Learning Center to enable classroom presentations in remote locations with video teleconferencing capability.
- In 2008 Cal Maritime adopted the Moodle instructional technology and course management system for campus-wide usage

Figure 2.1, contained in Appendix VIII, identifies the laboratory, simulator, internship and afloat experiences that bring applied technology to life in the curriculum of every degree program at Cal Maritime.

At Cal Maritime students in every discipline develop an ability to define a specific need for information and then to locate, access, evaluate, and effectively apply the needed information to the problem at hand. They learn to effectively use computers and computing applications in order to create, access, store, process, analyze and communicate information. While information technology is not unique to Cal Maritime, its utilization in the curriculum is pervasive, with applications from word processing to controlling functions of a 15,000-horsepower engineering plant aboard the Training Ship *Golden Bear*.

The Cal Maritime Library sponsors a campus-wide Information Fluency Program. The semester-long, two-credit course “LIB 100, Information Fluency in the Digital World” introduces freshmen in the Global Studies and Maritime Affairs program and both Engineering Technology programs to computing, critical thinking, information access, ethical research practices and evaluation skills. Components of the Information Fluency Program are integrated into course work at all levels of every major. Introductory English composition classes meet in a computer laboratory and utilize the computer as a writing aid and tool for searching both the Internet and library databases. Laboratory courses utilize computers for data gathering and analysis. Figure 2.2, contained in Appendix VIII, illustrates how students in every degree program at Cal Maritime develop their abilities to effectively use computers and learn the computing applications employed in their chosen profession.

The Cal Maritime faculty is actively engaged in the continued development of Applied Technology for the practical training of mariners. Recent examples of scholarly work and creative activity in experiential learning at the Academy include the following.

- Oil Spill/Crisis Management Simulator and ICS Training Program – Initially funded through a congressionally directed grant in the amount of \$476,000. Faculty efforts continue in the development of an Oil Spill/Crisis Management Simulator and intermediate level ICS (Incident Command System) course focusing on roles and responsibilities of managers and responders in the event of piracy/terrorist acts in the maritime environment.

- Practice-based Rules of the Road Training – A study to examine the effect, if any, on participant learning and understanding derived from adding simulation, with advanced electronic navigation capability, into Rules of the Road (NAU 305), a cadet’s first course in collision avoidance at the Academy.
- Practice-based Navigation Training – A study to examine the effect, if any, on participant learning and understanding derived from adding simulation with advanced electronic navigation capability into Navigation I (NAU 102), a cadet’s first navigation course at the California Maritime Academy. Heretofore this basic navigation course has not included any simulation in its 2-hour-per-week lab component.
- e-Navigation Course and Navigation System Research and Development – The Marine Transportation Department is now in the process of reviewing its program with an aim of making the navigation curriculum more efficient. The old methods of teaching navigation are being questioned, given new technologies and their inclusion in the bridge resource management concept. This review includes consideration of course content, sequencing, and pedagogical philosophy. The world maritime community is currently considering many of these same issues in light of the recent requirements for adding new navigation technology to the mandated standard STCW curriculum and the promotion of the concept of *e*-Navigation by the International Maritime Organization and a partnership with the Jeppesen Company in development and testing of a new integrated navigation system tentatively known as a Next Generation Integrated System (NGIS).
- Integration of Global Perspectives through Inter-departmental Simulation Training – A faculty effort to reinforce the concept of interplay between all aspects and departments of shipboard operations.
- Utilization of Electronic Coaching and Assessment Software in Engine Simulator Laboratories – Development of a methodology for developing simulator scenarios that was found to enhance instructor effectiveness and improve student learning outcomes. The approach uses digital logic blocks which can electronically recognize when students have met certain goals or have taken actions which are inappropriate. Electronic coaching tools were also developed and found to enhance student learning speed and comprehension.
- Instructors in the ABS School of Maritime Policy and Management utilize real time information on the Global Incident Map <http://cma.globalincidentmap.com> to relate classroom lessons to current events.

Assessment

The assessment of Applied Technology at Cal Maritime draws from many sources. Currently the assessment plans of individual academic programs embody the principal evaluations of the competency of Academy graduates in discipline-specific, maritime-related fields. The development of the IW-SLOs and an assessment plan at Cal Maritime will in the future contribute to the overall assessment of Applied Technology. Program assessment plans are available in Appendix VIII of this document. This section of the essay will provide examples of assessment methods applied to several of the program evaluations associated with Applied Technology.

- A. Surveys of employers sponsoring Co-Ops, Internships and Commercial Cruise to evaluate the professional preparation of Academy students
- B. U.S. Coast Guard audit of Academy compliance with the Standards of Training, Certification and Watchkeeping for Seafarers (STCW)

- C. Professional licensing and certification examinations
- D. Graduate placement statistics
- E. Surveys of graduating seniors, faculty, alumni and employers to evaluate the professional competency of Academy graduates

A. SURVEYS OF EMPLOYERS SPONSORING CO-OPS, INTERNSHIPS AND COMMERCIAL CRUISE

Students in the Marine Transportation, Marine Engineering Technology and Mechanical Engineering (Third Assistant Engineer's License Option) embark on a commercial vessel for a minimum period of 60 days. Feedback from ship's officers regarding the practical skills Cal Maritime's mariners-in-training is a measure of effectiveness of these programs in preparing students for the real world.

Industry internships and cooperative education programs are also incorporated into the curricula of the Facilities Engineering Technology, International Business and Logistics, Global Studies and Maritime Affairs and Mechanical Engineering programs. Feedback from corporate managers regarding the practical skills of Cal Maritime's interns is a measure of effectiveness of these programs in preparing the students for the real world.

B. U.S. COAST GUARD AUDIT OF ACADEMY COMPLIANCE WITH THE STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS (STCW)

Students in US Merchant Marine licensing programs acquire a wide array of seamanship and advanced mariner skills in the simulators, on the waterfront and aboard Training Ship *Golden Bear*. Students are required to individually demonstrate their knowledge and practical skills, according to the international Standards of Training, Certification and Watchkeeping (STCW). Faculty assessment of the required competencies for Third Mates or Third Assistant Engineers is integrated into the course work for each license-track program. The effectiveness of faculty efforts to develop and assess the professional competencies of professional mariners is periodically evaluated by the STCW Audit Team of the US Coast Guard and U.S. Maritime Administration.

C. PROFESSIONAL LICENSING AND CERTIFICATION EXAMINATIONS

Students in the Marine Transportation program receive extensive training in piloting and navigation, shipboard operations and safety, and international and federal regulations in simulators and aboard Training Ship *Golden Bear*. These students also acquire the managerial skills for ship operations in the bridge, radar and liquid cargo handling simulators and shipboard watch team experiences. Graduates of the Marine Transportation program are required to pass the U.S. Coast Guard licensing examination for the Second Mate and Officer in Charge of the Navigational Watch examination. This results in the issuance of a Third Mate's license, which is essential for a graduate seeking employment as a licensed deck officer on a commercial vessel. One measure of effectiveness for Applied Technology in the Marine Transportation program is student success rate on the license examination. [See Figure 2.4].

Students in the Marine Engineering Technology program receive extensive training in electrical and mechanical maintenance in the laboratory and aboard Training Ship *Golden Bear*. These students also acquire the managerial skills for power plant operations during their propulsion plant simulator and shipboard watch team experiences. Graduates of the Marine Engineering Technology program are required to pass the U.S. Coast Guard licensing examination for Officer in Charge of the Engineering Watch examination. This results in the issuance of a Third Assistant Engineer license, which is essential for a graduate seeking employment as a licensed engineering officer on a commercial vessel.

One measure of effectiveness for Applied Technology in the Marine Engineering Technology program is student success rate on the license examination. [See Figure 2.5].

For Facilities Engineering Technology, developing the requisite knowledge-base of professional facility engineers is a specific educational objective of the program. Students are required to individually demonstrate the knowledge and ability to perform analysis, applications engineering, and system or process development in large commercial, industrial, institutional and power generation facilities, and successfully pass the Certified Plant Engineer-In-Training (CPE-IT) examination prior to the award of a bachelor of science degree. The examination, which evaluates student readiness for employment in a large-scale facilities, commercial buildings, power plants and manufacturing facilities, is administered by the Association of Facilities Engineering (AFE). One measure of effectiveness for Applied Technology in the Facility Engineering Technology program is student success rate on the CPE-IT examination.

D. GRADUATE PLACEMENT STATISTICS

The Career Development Center at Cal Maritime assists graduating seniors in their job search. Through exit interviews the Center also gathers statistics for use in program assessments to evaluate the competency of Academy graduates in discipline-specific, maritime-related fields.

E. SURVEYS OF GRADUATING SENIORS, FACULTY, ALUMNI AND EMPLOYERS

One of the stated program outcomes for the mechanical engineering program is “an ability to apply “hands on” knowledge to solve/understand engineering design problems/systems.” The Mechanical Engineering program has defined an assessment system to identify how well program outcomes and objectives are being met, and to use this information to improve the program’s performance. This system uses evaluation of coursework, along with surveys of students, faculty, alumni, graduating seniors and employers. A number of courses have been identified as contributing to Applied Technology. These include laboratory classes, two manufacturing processes classes, a welding class, one training cruise aboard the Training Ship *Golden Bear*, cruise preparatory classes in marine engineering systems, and summer internships.

Discovery

This section of the essay provides samples of the evidence collected in some of the assessment processes for Applied Technology.

A. SURVEYS OF EMPLOYERS SPONSORING CO-OPS, INTERNSHIPS AND COMMERCIAL CRUISE

Industry internships and cooperative education programs are incorporated into the curricula of the Facilities Engineering Technology, International Business and Logistics, Global Studies and Maritime Affairs and Mechanical Engineering programs. Feedback from corporate managers regarding the practical skills of Cal Maritime’s interns is a measure of effectiveness of these programs in preparing the students for the real-world. Figure 2.3 shows a sample of the results from surveys of Chief Engineers and First Assistant Engineers supervising Cal Maritime marine engineers during their commercial cruise. These results are used in the evaluation the Marine Engineering Technology program.

The following table reports the level of agreement with the several statements concerning the effectiveness of the Engineering Technology program at Cal Maritime, where:

Figure 2.3 Commercial Cruise Supervisor Survey

Strongly Agree = 5 Agree = 4 Neutral = 3 Disagree = 2 Strongly Disagree = 1

Graduates of the Engineering Technology Program are well prepared to:

MET Learning Outcomes		Score
2	Apply current knowledge and emerging applications of math, science, engineering and technology	4.2
6	Apply engineering fundamentals to technical problems	4.1
4	Think critically and develop creative solutions	3.9
3	Use instrumentation to measure physical phenomena, analyze and interpret results	3.9
13	Engage in the operation and maintenance of engineering plant	4.1
5	Function effectively and lead teams	3.6
7	Communicate in a technical environment	4.3
11	Make a commitment to quality, safety, timeliness and continuous improvement	4.1
10	Be a professional, ethical and socially responsible engineer	4.2
8	Engage in lifelong learning	4.4

B. U.S. COAST GUARD AUDIT OF ACADEMY COMPLIANCE WITH THE STANDARDS OF TRAINING, CERTIFICATION AND WATCHKEEPING FOR SEAFARERS (STCW)

The effectiveness of faculty efforts to develop and assess the professional competencies of professional mariners is periodically evaluated by the STCW Audit Team of the US Coast Guard. At the conclusion of their visit, 9 and 10 March 2010, the Audit Team reported, “*CMA...has a vigorous deck and engineering training program...the instructors and staff are committed to excellence...The facilities, simulators, laboratories, and training vessels provide an outstanding combination of theoretical and practical coursework to ensure cadet competency is properly demonstrated.*” The full Draft Audit Report is contained in Appendix VIII.

C. PROFESSIONAL LICENSING AND CERTIFICATION EXAMINATIONS

Graduates of the Marine Transportation program are required to pass the U.S. Coast Guard licensing examination for the Second Mate and Officer in Charge of the Navigational Watch examination. Figure 2.4 illustrates the first-attempt pass rates of Marine Transportation majors taking US Coast Guard license examinations.

Figure 2.4 2nd Mate and OIC of the Navigational Watch Exam Results

Year	Exams	Passed in First Attempt		Retests Required		
		#	%	1	2	All
2002	38	20	53	N/A	N/A	N/A
2003	55	14	26	31	15	28
2004	58	21	37	N/A	N/A	N/A
2005	62	24	39	18	15	29
2006	73	33	45	32	20	4
2007	48	26	54	31	12	2
2008	56	24	43	39	11	7
2009	55	19	35	43	13	9
2010	76	32	42	27	15	19

D. GRADUATE PLACEMENT STATISTICS

Figure 2.5 illustrates the placement information for twelve of the fourteen Marine Engineering Technology graduates in the Class of 2009. Three of the graduates entered military service. Nine others were initially employed as Third Assistant Engineers in the maritime industry.

Figure 2.5 Placement of Marine Engineering Technology Majors in the Class of 2009

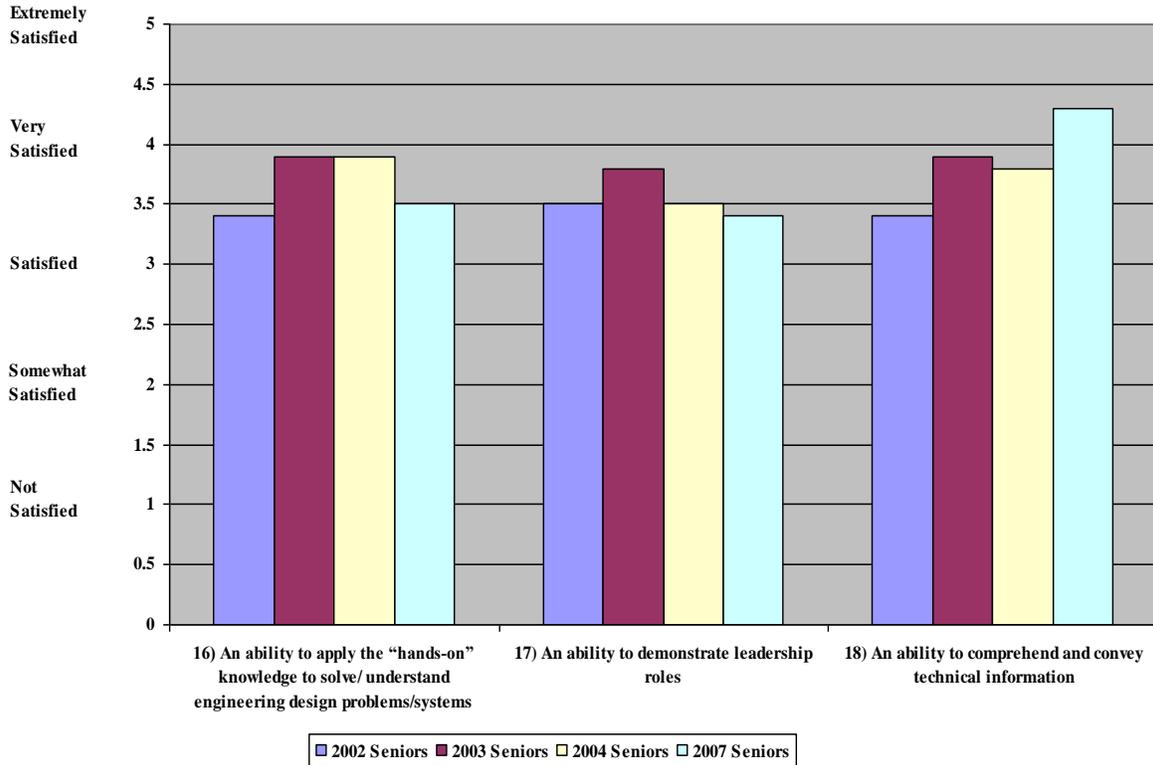
Graduate	Company	Position
1	Transocean	3-A/E
2	Military Sealift Command	3-A/E
3	United Ocean Services	3-A/E
4	MEBA	3-A/E
5	Transocean	3-A/E
6	U.S. Navy	Ensign
7	U.S. Marine Corps	2 nd Lieutenant
8	U.S. Navy	Ensign
9	Crowley Maritime	3-A/E
10	MEBA	3-A/E
11	Transocean	3-A/E
12	Transocean	3-A/E

E. SURVEYS OF GRADUATING SENIORS, FACULTY, ALUMNI AND EMPLOYERS

The Mechanical Engineering program has defined an assessment system to identify how well program outcomes and objectives are being met, and to use this information to improve the program's performance. This system uses evaluation of coursework, along with surveys of students, faculty, alumni, graduating seniors and employers. Figure 2.6 shows the result of a survey of graduating

seniors when they were asked how effective their education at Cal Maritime was in providing them with “hands-on” training.

Figure 2.6 Mechanical Engineering Graduate Survey



An additional survey asked alumni of the mechanical engineering program how important their “hands-on” training had been to their careers, and how well they believed that Cal Maritime had prepared them in this area. The survey used a 1 to 5 scale, with 1 being “not important” and “not prepared” and 5 being “extremely important” and “not prepared”. Importance was rated as 4.1 and preparation as 4.3, indicating that this aspect of their education was considered very important and that they were well prepared by their education.

Action

This section of the essay provides a few examples of actions taken following evaluation of the assessment data collected for Applied Technology.

Students in the Marine Transportation, Marine Engineering Technology and Mechanical Engineering (Third Assistant Engineer’s License Option) embark on a commercial vessel for a minimum period of sixty days. Feedback from ship’s officers regarding the practical skills Cal Maritime’s mariners-in-training is a measure of effectiveness of these programs in preparing students for the real-world. Based on feedback from First Assistant and Chief Engineers, faculty of the Department of Engineering Technology developed and implemented curriculum changes associated with power

engineering technology course work to improve the knowledge-base of graduates regarding high voltage electric propulsion systems.

In response to a decline in first-attempt pass rates of students in the Mechanical Engineering and Marine Engineering Technology programs prior to 2010 the faculty agreed to undertake a project to develop a license preparation web site, which would provide study guides and practice examinations in each of the exam topic areas. Although several tools are already available in the public domain, it was suggested that Cal Maritime develop a site, which would enable the faculty to monitor and mentor students at the Academy preparing for their examination. The Department requested and was awarded a President's Mission Achievement Grant for development of an interactive Third Assistant Engineer license-preparation website. Results of the most recent exam (4-7 January 2010) were added to the database in the MET program was extracted. Although a 70% success rate was not achieved, the results indicated a significant improvement in the first-attempt pass rate for the MET Class of 2010. During the week of 11-15 January three focus group discussions addressed the keys to success in U.S. Coast Guard license examinations for the MET Class of 2010. Focus group recommendations for future license examination preparations were incorporated into the planning for the license preparation web site development.

Leadership Development



LEADERSHIP DEVELOPMENT

Definition

The conceptualization of Leadership Development used by Cal Maritime in 2001 served the institution well, but has since evolved over time: the traditional, more autocratically oriented approach has been modified to incorporate elements of accountability, adaptability, and initiative. As a 21st-century, publically funded institution of higher education, Cal Maritime fully accepts its responsibility in providing a holistically based, democratic environment for learning...and leading.

In the past, the Academy's Leadership Development system largely has been informed by the action-oriented, real-world demands of the maritime industry, into which the majority of our graduates have been launched. Indeed, the campus recognizes that the traditional formulation of leadership -- developed as it was out of the merchant marine environment -- still holds a great deal of foundational significance and value even as it evolves to encompass all our students, regardless of major. Today, Cal Maritime's leadership development program also has become much more intellectually robust and complex; for example, acknowledging the equally vital, but often paradoxical relationship between "followership" and individual agency within an organization or system.

The California State University's emphasis on cultivating critical thinking skills and ethics in its student graduates has provided a vital inroad to more deeply defining effective leadership practices at Cal Maritime. Only active, goal-directed, yet flexible, fluid thinking will allow the Cal Maritime graduate to maintain a competitive edge while navigating his or her course toward the future.

Value

Today's world is dynamic, fast-paced, and complex in both scope and scale. The ability to efficiently and effectively process and prioritize information, and make quick, informed decisions, has never been more precious. America's leading maritime enterprises recognize the need for intelligent, responsible, conscientious, team-oriented graduates who can think critically and creatively while responding to stressful situations.

Cal Maritime graduates can proudly say that from the moment they step foot on campus, they are exposed to leadership opportunities with real-world responsibilities and real-world consequences. Cal Maritime cadets are required to develop and display significant commitment, discipline, and integrity by standing watch on and maintaining a federally owned training ship, train to fight fires and perform rescue operations; organize international relief aid for impoverished communities, and abide by the conduct and grooming standards put forth by the Corps of Cadets. To Cal Maritime students, the work environment is never hypothetical, never purely theoretical; to a great extent, they live it daily.

Process

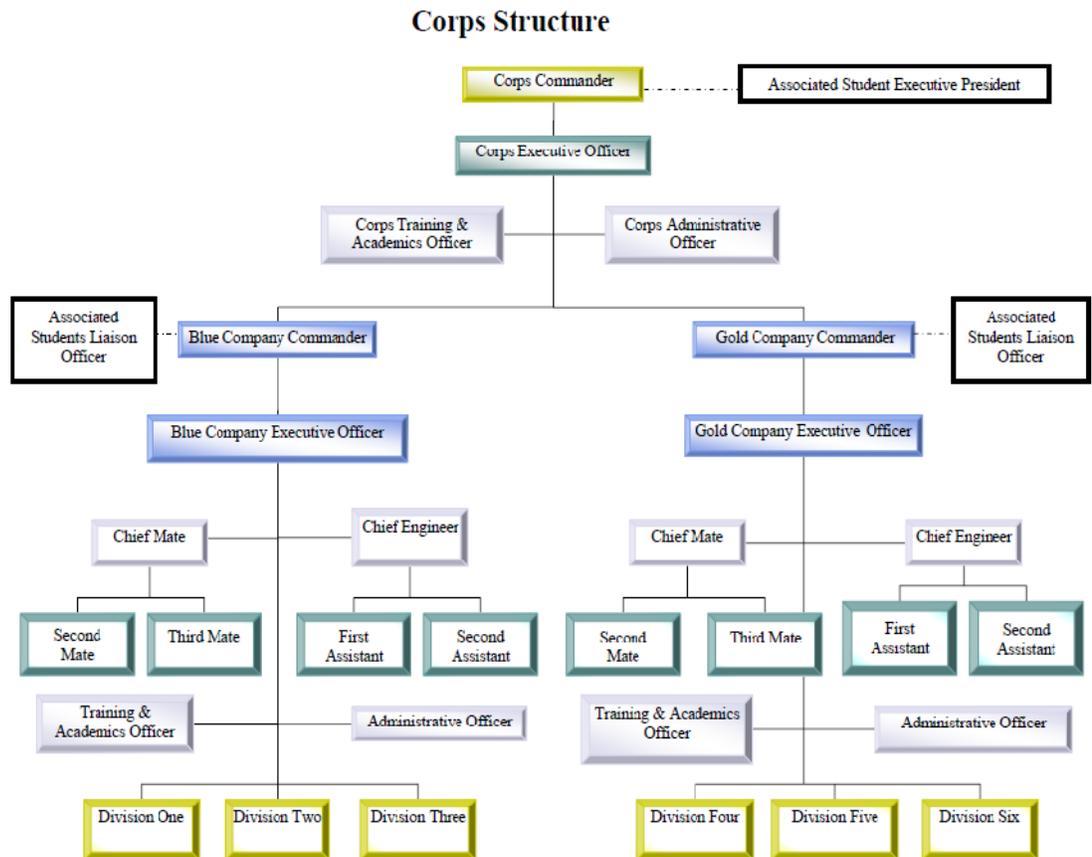
As they do on the large majority of college and university campuses in the United States, leadership opportunities abound at the California Maritime Academy. Student government, housing, campus clubs, organizations, and athletic teams all require student leadership, provided by cadets who have been formally elected, selected, or appointed, and by other students who recognize a leadership void,

and fill that void to the best of their ability. In addition, our academic curriculum demands that every cadet exercise team building and leadership development skills through classroom and lab-based courses requiring participation in a variety of topics, including Marine Survival, Engineering Plant Operations, Small Craft and Ship Handling, and Emergency Response Operations. The Leadership Development Office itself is responsible for overseeing the Corps of Cadets, and it is through the Corps that the widest range of training and leadership development opportunities on campus are offered. The Corps is also what sets Cal Maritime apart from most other leadership programs in other colleges and universities in the United States. Every Cal Maritime student is a cadet in the Corps, and is required to participate in Corps activities.

CORPS OF CADETS AND THE LEADERSHIP DEVELOPMENT OFFICE

Because every Cal Maritime student is a member of the Corps of Cadets, this organization functions as the most visible mechanism for the delivery of the widest range of direct leadership experience opportunities on campus. All corps members develop positive and desirable leadership traits, such as bearing, discipline, initiative, integrity, justice, loyalty, reliability, responsibility, selflessness, and tact. Much is asked of every cadet at this academy, and the development of self-discipline is critical to the success of each man and woman in the Corps. The wire diagram in Figure 3.1 provides a graphic display of the dynamic complexity of the Corps structure: each position outlined is, of course, a student leader position.

Figure 3.1 Corps Structure



CO-CURRICULAR ACTIVITIES AND LEADERSHIP DEVELOPMENT

Cal Maritime offers a variety of co-curricular activities which directly and indirectly strengthen and complement the objectives of the mission of leadership development. While these activities and organizations are not necessarily unique to the Academy, they do provide leadership roles for students in the service of preparing them for success upon graduation.

Students of the California Maritime Academy (ASCMA). The Associated Students uses student funds to create and operate programs to benefit the student community. A student Board of Directors governs the ASCMA, providing board members and class officers ample leadership opportunities during the academic year, and during the training cruises.

Athletics. The academy sponsors nine intercollegiate athletic teams, including three—men’s and women’s basketball and men’s soccer—that are members of the National Association of Intercollegiate Athletics (NAIA) and the California Pacific Conference (CalPac). Building teams and developing leaders has long been recognized as a critical element in successful athletic competition.

Academy Clubs and Organizations. There are many opportunities to get involved in, and lead, a campus club. All campus clubs elect club officers, who lead their respective organizations. Most recent applications for Academy Clubs include the creation of a Campus United Nations Club and the revivification of the student-organized, student written, student-produced campus newspaper.

Housing and Residence Life. The large majority of our cadets live in on-campus residential facilities. Residential life is an important component of a cadet’s experience at Cal Maritime, and housing staff members strive to create a community atmosphere in each of our three residence halls. Resident Assistants (RA) are trained student housing staff members who live in the resident halls, and lead cadets in their respective halls through social and community standards. RAs are selected, based on their maturity level, their willingness to commit to the health and welfare of a larger community, and their ability to maintain a comfortable and safe living environment in the residence halls, including the training ship.

Community Outreach. The community engagement office is involved in many local community development projects and volunteer opportunities (which we hold to be a direct manifestation of leadership development) enable students to participate in Local Community Engagement & Service Learning Credit for community non-profits, conduct Admissions & EAP classroom and administrative outreach to local high schools, and attend CSU and local parents collaboration and outreach programs. Fuller documentation of the participation in community outreach programs is included in Appendix VII, Section I.

Assessment

We expect our graduates to lead the maritime industry through the challenges and opportunities common in the 21st century and we expect Cal Maritime graduates to provide effective and ethical leadership, regardless of their chosen profession or career. Toward this goal, a number of assessment strategies and plans have been implemented.

THE CORPS OF CADETS AND LEADERSHIP DEVELOPMENT

Assessing the planning, execution, and the successful completion of the Leadership Development program by focusing on campus and other academy-sponsored events is an ongoing and ever-changing challenge. Assessment begins nearly immediately, as the academy’s Orientation Program

includes multiple assessments. Every new cadet is required to complete our Alcohol Abuse Awareness Program, currently built on a web-based information seminar. Swim assessments, completed during orientation, indicate which of our new cadets may participate in Marine Safety and Survival programs immediately, and let us know which members of the incoming class require remedial instruction before they can begin more intensive training. Successful completion of the orientation program requires passing a multiple choice exam on academy history, culture, customs, and heritage. Finally, each cadet completing the orientation program is required to complete a post-event survey, which includes questions about the effectiveness of the program, as well as others focusing on expected learning outcomes.

Our cadet formations provide an outstanding forum for the collection of qualitative data about the Corps' personal appearance and ability to wear cadet uniforms in the prescribed manner. And while inspections—from a cadet officer or staff officer—are part of nearly every formation, we do not record the results of every inspection, choosing to make on-the-spot corrections instead and then make informal, undocumented qualitative assessments about the appearance and comportment of a sub-unit in the Corps of Cadets. The objective is to get cadet leaders to engage their peers—up close and personal—and to follow up on trends within their respective units that might require correction, modification, or positive reinforcement. During the 2010-2011 academic year, cadets will be evaluated and assessed during two formal inspections (fall 2010 and spring 2011) that will result in individual and unit (Section, Division, and Company) evaluations and awards.

Every cadet standing watch on campus or aboard the training ship is subject to a written evaluation/assessment at the conclusion of his or her watch. Underclass watch standers are evaluated by a First Class cadet who serves in a senior/supervisory capacity during that watch stander's time on duty. First Class watch standers are given a written assessment of their performance shortly after they have completed that watch, typically by a licensed watch officer, a campus staff officer, or a member of the commandant's staff. All watch standing assessments are retained and are maintained for a period of time, in accordance with U. S. Coast Guard requirements.

As cadets advance through the Corps, they are required to demonstrate increasing knowledge and awareness levels, typically through successful completion of annual "Changeover" exams, normally developed and administered by First Class cadets near the end of each spring semester. These exams are unique for each class and academic program on campus, and are modified each year to accommodate changes in the maritime industry and in other professions, as well. Successfully completing the exams is a prerequisite for advancing to the next class in the Corps of Cadets.

Over the past decade, a series of workshops and retreats specifically devoted to defining and strengthening the Leadership Development Program were conducted. In the 2006 Leadership Development Retreat, a set of learning objectives was established, and an assessment plan was put in place. While this plan laid the groundwork for the current organization and assessment activity of today's Corps, it was also apparent that the outcomes themselves, while very valid, did not lend themselves readily to a system that could measure leadership in ways the institution felt were meaningful, in part because there were too many to be assessed in a manageable timeframe. Subsequent sections of this essay will describe the actions taken as a result of these discoveries.

ASSESSMENT OF LEADERSHIP IN THE ACADEMIC PROGRAMS

The development of Cal Maritime's Institution-Wide Student Learning Outcomes dramatically articulates the importance of leadership development. IW-SLO's H, I, and K – comprising three of the total eleven SLOs – directly and indirectly serve the campus's mission in this realm.

Figure 3.2 Selection of Institution-Wide Student Learning Outcomes related to Leadership Development

H	Work with others in achieving common goals, and when necessary, envision new goals; motivate and empower others to achieve them; interact constructively with a diverse group of people; and foster collegiality, goodwill and community among them	Leadership, Teamwork, and Personal Development
I.	Behave and perform in a manner that is accepted in one’s profession, as well as move oneself continuously toward a goal or set of goals	Professional Conduct
J.	Apply standards of proper conduct and responsibility towards society in one’s professional or personal life	Ethical Awareness

Leadership Development is present in academic coursework both in dedicated courses, in course components, and threaded across the curriculum in a variety of required and elective courses. Each program has specific program learning outcomes, and virtually every program has an outcome related to Leadership Development. For example, the Department of Mechanical Engineering has as two of its P-SLOs “an ability to function on multi-disciplinary teams” and “an understanding of professional and ethical responsibility.” The Department of Marine Transportation’s P-SLOs include “the ability to function effectively on teams” and the “ability to function as a manager in a maritime related business.” Students in the GSMA major must “develop teamwork and leadership skills” and those in BA/IBL should graduate with an ability “to lead a team project or activity, showing responsibility, professional behavior, and mentoring skills.” These P-SLOs are cited directly from individual departmental student learning outcomes, and can be located on the web pages of the respective departments.

Team building in the academy’s classrooms, laboratories, training ship (and other water craft), and simulation centers is commonplace. Leaders are assigned by faculty and staff members in each of these settings, and in a variety of ways. Classes teaching management techniques and ethics are common in each of our academic programs, and are prerequisites for graduation from the Academy. Academic courses and course components may be divided into the following conceptual areas:

Bridge Team Management The relationship of various members of a team on a ship’s bridge is maintained by making full use of all the competencies available and ensuring that all members of the team are aware of their duties and responsibilities. Thus, a leadership development component is clearly required. Coursework in the program of Marine Transportation (including CRU 100, CRU 300 and DL 420) directly embed leadership components into bridge team management exercises.

Business Leadership and Management. Selected individual courses with a leadership component would include “Business Decision Analysis,” “International Business” “Business and Society,” “Strategic Management,” “Quantitative Managerial Methods,” and Business Leadership and Group Dynamics.” Such courses cover management, operations, and human behavior in business settings, as well as the behavioral and psychological aspects of leadership in the business environment.

Foundations of Leadership. A course dedicated solely to assist students with developing the skills necessary for a lifetime of engaged, responsible leadership, LDR 210 (an elective which fulfills the requirement of “Lifelong Learning” within the CSU GE rubric) examines leadership in the context of a changing and culturally diverse workplace; students will gain an understanding of leadership and how this concept has developed over time. Additionally, students reflect on the meaning of ethics and decision-making in the contemporary world.

Critical Thinking and Ethics. “Critical Thinking,” a required lower-level course for all students at Cal Maritime, and “Ethics,” an upper-level Humanities course required for all of our majors, both specifically present issues central to the intellectual foundation of leadership. Critical Thinking, through its emphasis on those structures or elements of thought implicit in all argumentation (including deductive and inductive reasoning, logical fallacies, implications, assumptions, and consequences; and denotative and connotative elements in language) foregrounds the decision-making process as this is integral to leadership development. “Ethics,” additionally, examines moral, political, and social dilemmas from various theoretical perspectives and considers their application to personal and social issues, with an emphasis on moral reasoning and decision-making. Students are also required to apply basic ethical theories to specific moral problems within their own fields of study.

Additional Coursework with Leadership Components. Not only are there specific courses across the curriculum dedicated to leadership development and leadership theory, but many courses also bring leadership issues to the forefront in multiple ways. For example, in many sections of Introduction to College Composition, students are asked to write essays using material from George Orwell, Stanley Milgram, and Martin Luther King on principles of obedience and resistance in the context of leadership. In “Leadership, Ethics, and Naval Science” students are provided with the practical knowledge, leadership, and managerial skills necessary to function as new naval reserve officers.

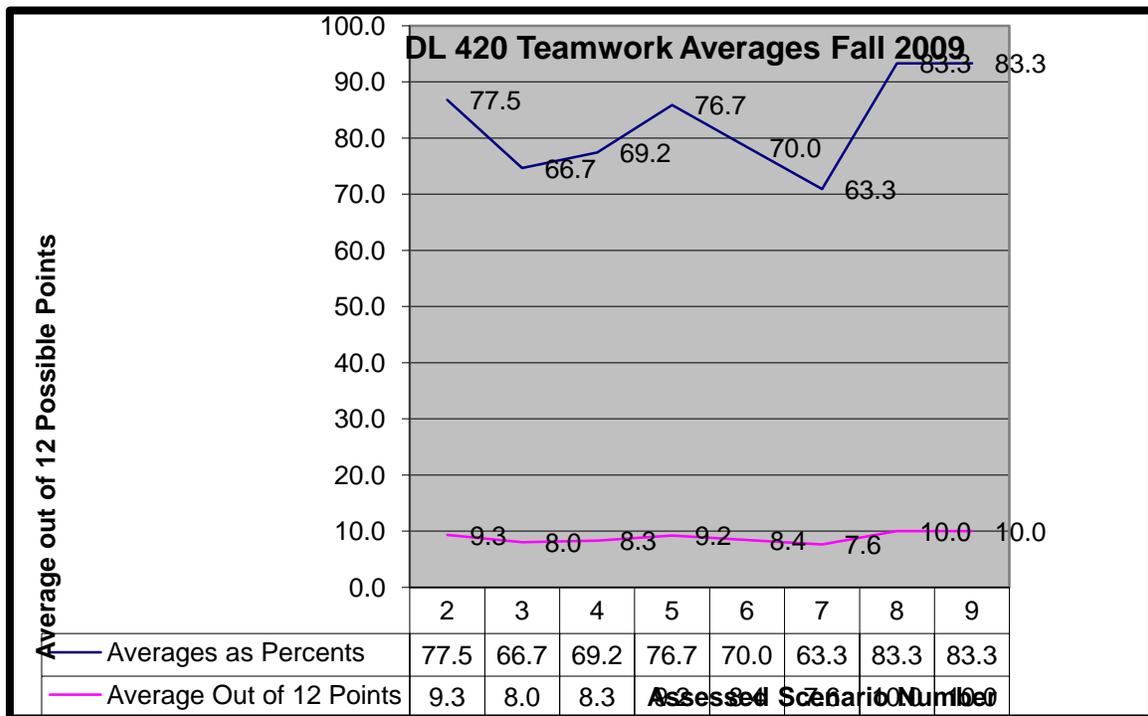
Case Study: Teamwork and Bridge Team Management. The leadership components of Bridge Team Management are embedded throughout the Marine Transportation Curriculum and these are further broken down into followership and leadership components within the cruise and simulation courses of CRU 100 (Sea Training I), DL 320 (Introduction to Bridge Simulation), CRU 300 (Sea Training III), and DL 420 (Watchstanding Simulation – capstone course). CRU 100 primarily introduces the followership component of leadership to cadets as they serve under the supervision of senior cadets. It is at this time that many leadership components are taught directly or indirectly by following the lead of the senior cadets and faculty. The leadership components are further reinforced and implemented in DL 320 as cadets gain their first opportunity to lead a bridge team. Building upon this knowledge/skill base, leadership is further measured in CRU 300 and DL 420. Items that are evaluated are decisiveness, initiative, assertiveness, teamwork, communications, and deportment. These measurement items were chosen by the department as they are consistent with the profession and necessary for the competent execution of all work aboard merchant vessels and, especially, bridge watches.

By departmental consensus, DL 420 instructors measured Teamwork (“3. Ability to function effectively on teams”) for the 2009 fall semester Student Learning Outcome (“SLO”). DL 420 Watchstanding Simulation (“Sim II”) is the capstone course for the Marine Transportation degree program. Classes are conducted in four-hour blocks over nine weeks and student competencies are assessed under STCW 95 guidelines. Four (4) students comprise the enrollment of each section of this experiential, problem-based learning course. Given general voyage and vessel operating characteristics and objectives, each section of students prepares a voyage plan outside of the class session. A briefing session with the section instructor is held prior to the execution of the voyage plan in the full-mission bridge simulator. Instructors assess individual and team competencies during the execution/simulation phase of class sessions. The simulation session concludes with a debriefing/review session. Students rotate through four positions of leadership and team support subsequent to each simulation session.

The assessment form for the team includes a competency block measuring Organization and Teamwork which includes Team Communications, Task Prioritizations, Bridge Resource Management, and Composure. Each sub-competency is measured on a three (3) point scale for a possible total teamwork score of twelve (12) points.

Team Communications include the verbal and non-verbal discussions, orders, and working interactions between and among the team members. Task Prioritizations encompasses the team's ability to continuously gather and evaluate information, determine the need for respondent action, and rank such responses to accomplish the objectives of each voyage. Bridge Resource Management comprises the ability of the team to utilize all Bridge high and low technology sources, to delegate responsibilities, and to execute task prioritizations. Composure measures the overall ability of the team members to exercise a professional level of operational self-control needed to safely maneuver their ship despite the designed, continuous introduction of stressors.

The Teamwork assessments for the ten (10) sections of Sim II measures were recorded and analyzed via Excel. Programmatic and STCW 95 standards require a 70% performance to be assessed as competent; therefore, the MT department utilized the same standard for programmatic success/failure of this SLO at 70%. Projecting a reasonable assessment differential of ± 1 point, the data indicates a successful SLO result well above the performance requirement.



Discovery

Evidence generated through our assessment of the Leadership Development program enables us to identify areas requiring reinforcement, modification, or elimination. In addition, retaining assessment data enables us to renew or re-think our program, and to respond to inquiries from external activities and agencies, including the California State University system, the Department of Transportation and the U. S. Maritime Administration, the United States Coast Guard.

An interesting assessment discovery is the recognition that each of the component parts of our program reflects only a snapshot of the leadership development learning process. Periodically, a

student struggling in one component of the program may be found to be performing significantly better in another component, or might be excelling in another campus activity, perhaps as a Resident Assistant or as part of an academic tutoring team, an academy-sponsored club, or varsity sports program. When this situation is encountered, The Leadership Development Office will contact a sponsor (typically a faculty or staff member) to determine ways to appeal to a cadet's commitment to success in our program. In this way, the assessment data, both quantitative and qualitative, proves both useful and relevant.

One of the most significant discoveries made by Cal Maritime in regards to Leadership Development as a mission point and as a distinct office is the need for greater continuity through personnel changes, and for a more systematic approach for integrating the various leadership development components on campus. These are discussed in the following section.

Action

Over the past few years, cooperation and communication between the Leadership Development Office and staff and faculty and staff members from other academic, campus and training ship departments has increased, with an understanding that more further integration is necessary. The commandant and his staff understand that developing leaders must be a campus-wide effort, and they have solicited assistance and support from academic department heads, the Dean of Students, the Residence Life staff, and the Athletic Director, among others. We believe that every interaction with cadets should be treated as an opportunity to teach them, guide them, and show them the proper way to conduct themselves and to lead others.

In years past, much emphasis was put on the Leadership Development Gold Medal Program, which included a series of seminars based primarily on Steven Covey's "7 Habits of Highly Effective People" program. While the Covey-based training is appropriate in many settings, its effectiveness at Cal Maritime was compromised by the fact that its seminars were (a) far more expensive than other programs of its type; (b) always conducted on weekends; and (c) not well received on this campus. Historically, during the years the Covey-based Gold Medal Program was in place at Cal Maritime, only 9-12 per cent of our cadets participated in any given year. It is not likely that we could have afforded greater participation, and beginning in 2009, resource restrictions and staffing changes put the program out of our reach.

Past emphasis on the Gold Medal Program resulted in too little attention focused on the largest part of our Corps of Cadets; as a result, discipline suffered, unit integrity all-but disappeared, and *esprit* had no place in our corps. In fall 2009, the academy temporarily suspended the Gold Medal Program, and turned its focus to the fundamentals of leadership development that apply to every cadet enrolled at the California Maritime Academy. We have not closed the book on the program, but until we have rebuilt the foundation upon which advance leadership training and education can be built, our intent is to build brilliance in the basics of leadership development, after which, we will consider an advanced program.

For the time being, our focus is on cadets, both leaders and followers. Our cadet leaders are openly encouraged to take ownership of their Corps of Cadets. They are encouraged to consider alternative leadership styles and models. They are required to participate in formal and informal leadership discussion groups and seminars, both on and off campus, and during our annual training cruise. Cadets are asked, encouraged, coached, mentored, and directed to create and participate in an effective and practical system for maintaining the high standards of personal and professional conduct that will have each cadet feeling personally responsible for the Corps of Cadets.

In WASC's letter in response to the CPR Report and Visit, a series of recommendations were made in regards to Leadership Development. Those recommendations are addressed in this chapter, but they are also acknowledged in Appendix II. Finally, in a discussion of Leadership Development practices which brought together the President, the Provost and VPAA, the Academic Dean, the Dean of Students, the Leadership Development Office, the Academic Senate, the Provost's Council and the Chairs' Council, many of the aforementioned challenges were discussed. It was determined that a mechanism must be adopted whereupon the various leadership components can be integrated better. The Provost's Council will guide and assume responsibility for this new Leadership Development Integration Team.

Global Awareness



GLOBAL AWARENESS

Definition

The concept of global awareness is based on substantive and applicable knowledge of a wide range of international issues and cultural perspectives. In the international arena, this type of understanding includes a vast array of issues that can be broken down into broad categories that include international politics and economics, environmental and cultural awareness, and global dynamics.

Numerous contemporary issues face the global community; many of which are having – or will have – significant implications for the greater maritime and transportation industries. These issues range from environmental crises affecting all people to critical political, economic, and social problems that affect much of the world’s population. Global dynamics refers to the understanding of how the world’s complex political, economic, social, and technological systems interact and operate in conjunction with one another. The interdependence of the international community, and its impact on our students and their future, requires an awareness of global dynamics.

Consistent with how we approach the other three points of the mission, Global Awareness at Cal Maritime is significantly more than academic and classroom-based awareness of the issues facing the world today and the diversity of cultures of the greater society in which we live. Rather, we are committed to an understanding and awareness of global issues that is experienced firsthand by all of our students – to this end; all students at Cal Maritime are required to spend time abroad as part of their education. This active, participatory and experiential approach to global awareness makes Cal Maritime unique among many institutions of higher education in the United States.

Value

The forces of globalization have radically transformed the maritime and transportation-related fields. Over 90% of the world’s trade is transported by ship¹¹; 80% of the world’s merchant ships are now multilingual and multiethnic in crew composition¹²; and one in ten ships operates with crews composed of five or more nationalities¹³. Additionally, events happening on the other side of the world – such as maritime piracy, as one example – have real and direct implications for our students and graduates. Because of the nature of the work we do, and the careers for which we prepare our students, Cal Maritime graduates must be aware of the issues facing our planet and its people as they enter their new careers. A broad understanding of cultural variation and international issues along with a specialized knowledge of a particular global field of endeavor are central to producing highly skilled and educated students that are prepared for the modern transportation, engineering, business and policy environments. This understanding is critical not only for licensed Cal Maritime graduates who enter careers aboard ocean-going vessels but also for the many graduates who are employed in a wide variety of shore-side support services that often require direct contact with individuals across the globe. Graduating our students without a basic understanding of the implications of global realities would undermine the goal of providing them a complete and relevant education.

¹¹ The International Maritime Organization. 2010. <http://www.imo.org>

¹² Trenkner, P., Cole, C. “Profiling the Maritime English Instructor,” *Proc. of the 4th General Assembly of the International Association of Maritime Universities*. Alexandria, Egypt. CD-ROM. 2003

¹³ Badawi, E. El Sayed, A. Halawa, A. M. “Maritime Communication: The Problem of Cross Cultural and Multilingual Crews,” *Proc. of the 4th General Assembly of the International Association of Maritime Universities*. Alexandria, Egypt. CD-ROM. 2003

A summary report of the California Community Colleges Chancellor's Office Global Education Task Force recently stated:

"The last decade of the century may well be remembered as the era in which a new global economy took shape. Today we live in a world connected by the unfettered flow of information, thanks to incredible advances in computer and telecommunications technology. This flow of information - across political, economic, and social boundaries - has changed the world, making it a smaller, more interactive place. For instance, it used to be that only the largest companies could manufacture in Asia, sell in Europe, maintain headquarters in California, and house employees in a dozen different cities. But today any company with the right technology, resources, and know-how can do it."

The report goes on to point out that California is poised for unprecedented opportunities and challenges offered by the emerging global economy due to its strategic location on the edge of the Pacific Rim - one of the fastest-growing and most vital economic regions in the world. With the world's most sophisticated high-technology industries, the resources of the world's seventh largest economy, and the most culturally diverse population in the nation, California - and Cal Maritime - is uniquely positioned to play a key role in an increasingly globalized future. In order better to prepare for, and leverage the opportunities presented by, such a future, we have an important role to play in educating our students about the issues raised by globalization and the changing world economy.

Because Cal Maritime's mission statement commits us to "being a leading educational institution recognized for excellence in the business, engineering, operations, and policy of the transportation and related industries of the Pacific Rim and beyond," an awareness of the important issues facing the globe is critical not only for our students' futures, but for the society and economy in which we live.

Process

All of the academic programs at Cal Maritime share a commitment to global awareness. Academic coursework, a summer voyage aboard Cal Maritime's training vessel, international conferences, study abroad programs, and international internship and co-op opportunities are all mechanisms through which Cal Maritime students and faculty incorporate global awareness into their teaching and learning. Global awareness is a critical part of the mission statement of Cal Maritime and the mission statement of several degree-granting and non-degree-granting programs on campus. Discussion of the process through which Cal Maritime moves the concept of global awareness into the educational arena is divided into the following subsections:

- A. The Training Ship *Golden Bear* and the Summer Cruise
- B. Academic Programs
- C. Study Abroad Opportunities
- D. Co-ops and Internships, and the Commercial Cruise
- E. Additional International Experiences and Opportunities
- F. Campus Activities Promoting Global Awareness

A. THE TRAINING SHIP *GOLDEN BEAR* AND THE SUMMER CRUISE

Each of the degree-granting programs at Cal Maritime requires that all students in the major participate in at least one summer cruise aboard the Training Ship *Golden Bear* (TSGB). Thus, all of Cal Maritime's students participate in some form of international experience. The TSGB embarks on two 60-day voyages each summer to multiple ports-of-call in foreign nations throughout the Pacific

Rim. The two-month experience aboard the TSGB offers students, faculty, and staff the opportunity to experience various cultures and global dynamics in a “hands-on” manner.

Aboard the TSGB, students and faculty engage in a variety of academic endeavors specific to their field of study. Students in Marine Transportation (MT), Marine Engineering Technology (MET), and Mechanical Engineering (ME) apply the classroom knowledge acquired during the academic year and serve as the primary source for vessel operations. All other majors pursue traditional coursework aboard the TSGB and serve as crew members through various day-work tasks. While at sea, global awareness is enhanced by the students in Global Studies and Maritime Affairs (GSMA) who offer “port briefs” to the crew of the TSGB when they are on a particular cruise. The briefing sessions include information such as brief histories, political and economic conditions of the foreign nation where the TGSB will make its next port call.

Once the TSGB reaches a port of call, faculty, and staff are provided with a unique and meaningful international experience that greatly enhances global awareness for both the individual and the Cal Maritime community. Within that time frame, students, faculty, and staff are provided time whereby they are able to disembark the vessel and experience the culture, customs, and people of the nation first hand.

Cruise itineraries vary from year to year, but in general there is a three-year cycle whereby the ship will visit Asia, South Pacific, and the Americas. Recently, the TSGB has taken Cal Maritime students, faculty, and staff to the following locations:

South Pacific (2008)

Papeete, Tahiti
Nukualofa, Tonga
Noumea, New Caledonia
Lahaina, Maui, HI

The Americas (2009)

Panama City, Panama
Valparaiso, Chile
Guayaquil, Ecuador
Puerto Vallarta, Mexico

Asia (2010)

Busan, South Korea
Kobe, Japan
Apra, Guam
Saipan, Mariana Islands

Additionally, students have the opportunity to participate in various projects on cruise which enhance global awareness and which use the TSGB as a training platform, delivery mechanism, or scientific research vehicle

Argo Project. Because the TSGB follows an unusual course away from commonly used shipping lanes, it is a major delivery vessel for the Argo Project. The Argo Project is an international cooperative scientific project that places remote sensing devices over most of the oceans of the world in order to provide a wide range of data to oceanographers, climatologists, economists, and others. These sensing devices, once launched, independently dive to various depths to collect information and then periodically rise to the surface, connect to satellites orbiting earth, and transmit the collected data which will be used by scientists around the world. The Argo units require meticulous care in transport, assembly, and launch, after which they are capable of drifting for years on currents. During each cruise six to twelve Argo units are deployed from the *Golden Bear*. Most students in the Maritime Policy and Management program participate in the Argo Project. They learn the importance of the project and how it can be used to predict global changes so that appropriate actions can be taken. Students work in teams to learn and put into practice the proper techniques for handling these delicate and important instruments. And finally, the students launch the Argo units and watch them disappear and begin to collect data. [www.argo.net]

Ballast Water Treatment. Cal Maritime students are also involved with another project that has major global implications. The ballast water treatment infrastructure created on the TSGB before the 2010 voyage allows prototypes of leading edge ballast water treatment systems to be tested and refined through operation and monitoring during the cruises. These systems, many based on the research done on the TSGB, will soon be required for all ships entering international ports in order to reduce or eliminate the serious problem of invasive species in the world’s harbors and coastal waters. Cal

Maritime students are given detailed briefings on the extent of the problem, the techniques used to eliminate the threat, and the engineering requirements of the systems. The students actively participate in many aspects of these experimental operations.

Global Humanitarian Assistance. Cal Maritime students aboard the TSGB are afforded the opportunity to participate in global humanitarian assistance programs where the training vessel makes a port call. Most often, these programs are the result of work by the Academy's Circle K Club – the student chapter of the Kiwanis Club – who establish relationships with various groups in need of assistance and solicit donations of materials such as clothing, medical supplies prior to each summer's voyage. Figure 4.1 in Appendix VIII documents the global humanitarian assistance programs undertaken by students aboard the TGSB over the past decade.

B. PROGRAMS AND THE CONTRIBUTIONS TO GLOBAL AWARENESS

In the last comprehensive WASC Review of 2001, Cal Maritime's mission was articulated as a triad of "Intellectual Learning, Applied Technology, and Leadership Development." Since then, as acknowledged in the Introduction of the EER, "Global Awareness" has assumed a status on equal footing. The direction of the development and evolution of Cal Maritime's academic programs underscore the significance and seriousness of this commitment.

Of particular significance to the development of this point of the institution's mission is the creation of Cal Maritime's pioneering Global Studies and Maritime Affairs (GSMA) major. When it was established in 2003, GSMA was widely recognized as one of the first interdisciplinary undergraduate majors in international studies in the country to focus on maritime affairs. Administratively housed in the newly formed ABS School of Maritime Policy and Management (since Fall 2009) as the result of a three-million dollar gift from ABS (formerly the American Bureau of Shipping), the GSMA major at Cal Maritime remains the only degree-granting program of its kind among the seven maritime academies throughout the United States and among the 23 universities of the California State University System. It has been an ideal program: truly interdisciplinary in character, academically sound, innovative and far-sighted, attractive to students, and an excellent contributor to Cal Maritime's image. In addition, the majority of faculty in the ABS school teach courses available to all students on Cal Maritime's campus.

The recent redevelopment of the Business Administration (B.A.) curriculum toward an International Business and Logistics curriculum also reinforces Cal Maritime's commitment to global awareness. The courses offered by GSMA and BA/IBL are also open to all eligible students, and the contributions to the institution as a whole may be divided into the following conceptual areas:

Maritime Trade, Economics and Business. Academic courses offered under this heading include "The Environment of Modern Business," "International Business I and II" and "Economic Geography." These courses address contemporary issues in international trade, management, and geopolitical economic relations.

International Maritime Environment. A policy area which focuses on maritime environmental and issues pertaining to global shipping, there are a number of courses and interdisciplinary course components which contribute to this field, including "Ocean Politics," "Introduction to Environmental Policy," "Ocean Environmental Management," and "The Geopolitics of Oil."

International Maritime Security. As maritime issues today increasingly center on security concerns, Cal Maritime has developed curricula that examines the different threats in coastal and near-coastal zones, in international waters, and on the high seas. Topics covered include (but are not limited to) sea-lane security, maritime piracy and terrorism, illegal immigration, *force majeure*, and changing naval policies.

Culture and Globalization. Recognizing that global awareness is manifest in many different knowledge regimes, a number of courses have been developed to study global exchanges in the cultural realm. “World Cultural Journeys” is an introduction to the history, culture, and society of specific regions to be visited by the TSGB on its annual cruise, while “The Globalization of Culture” (required for GSMA majors) examines emergent cultural formations brought about by post colonialism, internationalism, and new forms of cultural hybridity. Also included under this banner would be Cal Maritime’s Humanities courses “Perspectives in World Culture,” “World Literature of the Sea,” and “Comparative World Religions.” Additionally, foreign language requirements in the GSMA and BA/IBL majors can be satisfied by taking classes in Spanish and Chinese, with proposals for additional language offerings in the future.

Geographical Information Systems. In additional coursework, Cal Maritime introduces the students to GIS, the electronic mapping technology that allows users to explore the world at their desktops. Students are taught to gather data about a host of global populations, environments and issues; layer that data upon electronic maps; analyze the results for research, planning and impact purposes; and present them graphically to fellow students and faculty. By creating and analyzing spatial relationships in our world, they are able to better understand the world they live in and the accurate and timely impacts that human and natural interactions and actions have. Our faculty are actively involved in the annual ESRI International User Conference held in San Diego, California which provides workshops for faculty and students alike in how to create, use and share GIS products. Using the state of the art GIS tools available that are available, students’ global awareness is greatly enhanced and shared for a variety of purposes, and they can truly recognize their part in the global community and act effectively and consciously.

C. STUDY ABROAD OPPORTUNITIES

Students at Cal Maritime are afforded the opportunity to study abroad for one semester or one full academic year depending on the program of choice. At present, study-abroad opportunities for Cal Maritime students emanate from two different sources: participation in the California State University International Program and partnerships with other academic institutions including maritime universities through memoranda establishing an exchange program.

The CSU International Programs (IP) is the system-wide study abroad program of the CSU and provides students with international academic opportunities in the framework of a California State University degree program. With a special focus on academic year studies, IP is a unique part of the spectrum of study abroad opportunities available to CSU students, and Cal Maritime has taken advantage of this system-wide program.

Additionally, Cal Maritime has entered into exchange agreements with a number of Maritime Universities across the world. The full terms of each memorandum of understanding, including faculty, staff, and student exchanges, can be accessed at <http://www.csum.edu/visitingexchange/>. Figure 4.2, located in Appendix VIII lists the memoranda of understanding held with these institutions.

Over the past five years Cal Maritime students have completed study abroad programs at the following institutions: Dalian Maritime University, China ; Université de Provence (Aix-en-Provence), France ; University of Bradford, UK; University of Granada, Spain; University of Hull, UK; University of Portsmouth, UK; University of Swansea, UK; Yonsei University, Korea; and Waseda University, Japan. Due to the specialized nature of several of Cal Maritime’s academic programs and the restriction placed on the academic calendar by training cruise schedules, the majority of general study abroad programs are unsuitable for many students. Despite these obstacles, many students do take advantage of these opportunities.

D. CO-OPS, INTERNSHIPS, AND THE COMMERCIAL CRUISE

Global awareness is an integral component of the program in ABS School of Maritime Policy and Management. This objective is met in many ways, including through the completion of a mandatory internship that is fulfilled via CEP 330: GSMA Co-Op. A list of CEP 330 placements is attached as Figure 4.3 in Appendix VIII. As can be seen, many of these assignments are fundamentally linked to global awareness. GSMA interns have worked with the US Agency for International Development, with the USCG Bureau of International Affairs (where they assisted in the production of Area Contingency Plans), and with foreign governments and NGOs (in Costa Rica and Peru). More than a few of these assignments deal with issues of cross-cultural affairs, international relations, and the achievement of global awareness through practices that provide a real-world experience to classroom lessons.

The Commercial Cruise. All students in maritime licensing programs sail on a commercial vessel in partial fulfillment of their certification requirements. Not only do many of these vessels visit several international ports, but students must reflect upon their commercial cruise experience in a comprehensive written report which is graded by faculty in the department of Marine Transportation.

E. ADDITIONAL INTERNATIONAL EXPERIENCES

Cal Maritime participates in several external programs, exchanges, and activities that greatly enhance and reinforce the university's commitment to global awareness.

International Association of Maritime Universities. As an active member of the International Association of Maritime Universities (IAMU), Cal Maritime sends several faculty and students to IAMU Conferences each year abroad and hosted the 2008 IAMU Conference.

International Faculty Conferences. Many faculty publish in international journals and present at international conferences other than IAMU. A partial list of conferences includes The International Studies Conference, The Maritime Simulation Conference, and The Ocean Policy Research Foundation. The connections made across the globe with associates produces a community of scholars and instructors which in turn enhances the visibility of Cal Maritime.

Visiting Scholar Programs In this spirit of global awareness, Cal Maritime welcomes international scholars at those universities with which we have memoranda of agreement who wish to discuss mutually beneficial opportunities for teaching and research. Between 2004 to the present, Cal Maritime has hosted eight visiting scholars from five different universities. Currently, a Fullbright Scholar from the Vietnam Maritime Academy is in residence on campus through an invitation from the Department of Maritime Policy and Management.

Figure 4.4 International Scholars 2004-2011

<i>Visiting Scholar</i>	<i>University</i>
Dr. Min Seon Chi (2004-2005)	Mokpo National Maritime University, <i>Republic of Korea</i>
Dr. Jin-Soo Park (2004-2005)	Korea Maritime University, Busan, Republic of Korea
Dr. Yusuf Zorba (2005-2006)	Dokuz Eylul Univeristy, Izmir, Turkey
Dr. Pavel Novikov (2004-2006)	Admiral Makarov State Maritime Academy, St. Petersburg, Russia
Mr. Na Chunguang (2009)	Dalian Maritime University, Dalian, China
Dr. Yejin Lin (2009-2010)	Dalian Maritime University, Dalian, China
Mr. Yaoliang Huang (2009-2010)	Dalian Maritime University, Dalian, China

International, Visiting, and Exchange Students at Cal Maritime. Additionally, Cal Maritime has a record of attracting international and exchange students to campus. In the past few years, students from China, Japan, Korea, Egypt, Russia and other countries have helped to create a diverse student body.

Peace Corps. Students have taken their calls to service and opportunities for international stewardship seriously. Many licensed graduates have taken positions with agencies specializing in humanitarian relief, and at least three GSMA graduates have accepted billets as Peace Corps Volunteers, with assignments that span the globe from Asia to Africa and Latin America. Others have dedicated themselves to agencies such as Learn-and-Serve America, and have applied their training and experiences in a variety of areas within and outside of the maritime realm.

Assessment

The assessment of Global Awareness at Cal Maritime is an evolving process that includes continuous assessment of relevant academic course content, the summer cruise, and affiliated co-curricular activities. What follows is a selection of the assessment tools and practices starting in 2008 with the first assessment of the impact of summer cruise. During academic year 2009-2010, the Department of Global Studies and Maritime Affairs (GSMA) assessed Discipline Specific Knowledge as part of its program review cycle. A representative exhibit of this data is located in Appendix VII, Section J. The GSMA program assessment provides important data relative to our understanding of Global Awareness. During summer cruise 2010, a second assessment of Global Awareness was conducted to provide additional data for assessment. Finally, the IW-SLO “Global Stewardship” will be assessed through a formal rubric during 2010-2011. The Rubric for this assessment is located in Figure 4.7.

A. CROSS-CULTURAL ASSESSMENT OF SUMMER CRUISE, 2008

With the understanding that the maritime industries are among the most diverse and global, an assessment of the “cultural intelligence” (CQ) is periodically conducted at Cal Maritime. Cultural intelligence is delivered through coursework in instruction in history, comparative world religions, cultures of globalization and foreign language study, as well as the experiential opportunity afforded by TSGB. In 2008, everyone participating in training cruises was asked to complete a survey designed by the original CQ developers, with attention drawn to pre and post cruise experiences. Figure 4.5 showcases the results Section One of the Survey: Metacognitive CQ, whereas students were asked to respond to a series of questions and select the answer that best describes as they “really are” with 1= “strongly disagree” and 5 = “strongly agree. It was found that for Part One (the evaluation of meta-cognitive CQ), post-cruise cadets scored themselves significantly higher in assessing their consciousness of cultural knowledge in cross-cultural interactions. An aggregate score of 33.3% of cadets ranked themselves as “strongly agreeing” with the statements regarding their high level of meta-cognitive act before cruise, whereas post-cruise scores averaged 51.6%. In the section evaluating Behavioral CQ, initial pre-cruise aggregate scores for the highest level averaged 34.7% and post-cruise scores for the same category measured 43.4%. An even more dramatic increase was found for motivational CQ: pre-cruise numbers (using the same formula as above) measured 12.6% and post cruise numbers more than doubled to 26.6%.

Figure 4.5 Sample of Survey on Metacognitive CQ for Cross-Cultural Awareness

**California Maritime
CQ Survey
Golden Bear, First Cruise, 2006**

Section One: Meta-Cognitive CQ

(MC1) I am conscious of the cultural knowledge I use when interacting with people with different cultural backgrounds.

	1	2	3	4	5
Pre-Cruise %	3.7	3.7	40.7	22.2	29.6
Post-Cruise %	0.0	0.0	13.3	40.0	46.6
% Change	-3.7	-3.7	-27.4	17.8	17.0

(MC2) I am conscious of the cultural knowledge I apply to cross-cultural interactions.

	1	2	3	4	5
Pre-Cruise %	7.4	0.0	44.4	29.6	18.5
Post-Cruise %	0.0	6.6	13.3	26.6	53.3
% Change	-7.4	6.6	-31.1	-3.0	34.8

(MC3) I adjust my cultural knowledge as I interact with people from a culture that is unfamiliar to me.

	1	2	3	4	5
Pre-Cruise %	3.7	3.7	18.5	33.3	40.7
Post-Cruise %	0.0	0.0	13.3	26.6	60.0
% Change	-3.7	-3.7	-5.2	-6.7	19.3

(MC4) I check the accuracy of my cultural knowledge as I interact with people from different cultures.

	1	2	3	4	5
Pre-Cruise %	7.4	11.1	22.2	25.9	33.3
Post-Cruise %	0.0	6.6	13.3	33.3	46.6
% Change	-7.4	-4.5	-8.9	7.4	13.3

The complete assessment of this project is embedded in the published article “Globalization, Cultural Intelligence and Maritime Education” and can be downloaded at <http://iamu-demo.annex.jp/Portals/5/book/AGA07.html#/8>

B. ASSESSMENT OF GLOBAL AWARENESS ON SUMMER CRUISE, 2010

The second assessment of global awareness for Cal Maritime students participating in summer cruise aboard the TGSB was conducted in 2010. Following a pre-test/post-test format, students aboard the TGSB were asked a series of questions pertaining to their awareness of and interest in foreign cultures and practices. The goal of this approach was to assess the impact of Cal Maritime’s summer cruise experience on the overall level of Global Awareness across all academic majors.

The results of the 2010 Summer Cruise assessment, shown in Figure 4.6 in Appendix VIII, indicate that the Global Awareness of Cal Maritime students is indeed enhanced by their experiences aboard the TGSB.

C. ASSESSMENT OF GLOBAL STEWARDSHIP ON INSTITUTIONAL AND PROGRAM LEVEL

As noted in the first essay of the Educational Effectiveness Review, Cal Maritime has developed, through the Institution-Wide Assessment Council, an assessment plan of the Institution-Wide Student Learning Outcomes. Outcome K. speaks directly to the mission of Global Awareness, and more specifically to the concept of Global Stewardship. This outcome – “to demonstrate an awareness of diversity in the global culture and environment as well as the responsibilities associated with promoting the welfare of state, country, and whole of humanity and planet” - is being assessed in the current academic year, and a copy of this is located in Appendix VIII, as Figure 4.7. A rubric has been developed and is distributed across the disciplines. The information will be gathered and analyzed by the IWAC in the summer of 2011.

Additionally, within the Department of Global Studies and Maritime Affairs, data are collected and processed according to program review guidelines. In 2009-2010, faculty assessed coursework for discipline specific knowledge, and the results are located as a key exhibit in Appendix VII.

Discovery

The implementation of the assessment tools for Global Awareness detailed above has uncovered a number of important issues. In general terms, we have learned that Global Awareness is enhanced for Cal Maritime students by their experience aboard TGSB. The data generated from both the 2008 and 2010 summer cruise assessments indicate that, on average, student’s awareness of and interest in foreign cultures and practices is enhanced by their cruise experience. The time that Cal Maritime students have off the TGSB while in port offers an opportunity to experience numerous cultures different than their own and interact with individuals and organizations in those cultures.

The ABS School of Maritime Policy and Management offers a wide variety of courses that incorporate global awareness across its curriculum. Both academic majors in the ABS School offer courses open to all Cal Maritime students and have greatly enhanced Global Awareness campus-wide. The recent growth of each major not only increases the number of Cal Maritime students who focus their studies on global issues but also has increased the number of courses available to the broader student community. We have discovered that the demand for coursework in these issue areas is high for both incoming freshman that choose the majors and the number of non-majors who register for classes in the ABS School.

Actions

From the findings based upon various assessment processes listed above, a number of steps have been taken that increase the level and efficacy of Global Awareness and its practices on campus. Since our previous Educational Effectiveness Report submitted to WASC in 2002, the Cal Maritime community has:

- Created a new major in Global Studies and Maritime Affairs (GSMA) that absorbed a large portion of the former General Studies Department now defined as the Culture and Communications program.
- Refined and expanded the GSMA major which resulted in a \$3 million gift from ABS in fall 2009 to establish the ABS School of Maritime Policy and Management.

- Reorganized and redefined the major in Business Administration resulting in the new major of Business Administration: Focus in International Business and Logistics (BA/IBL) housed in the newly formed ABS School.
- Hired several new full-time, tenure track faculty in the ABS School whose primary pedagogical and scholarship focuses are:
 - International Business
 - Global Logistics and Supply Chain Management
 - International Maritime Issues and Maritime Piracy
 - International Environmental and Energy Issues
 - Maritime History
 - Globalization and the Pacific Rim

Since the creation of the Department of Global Studies and Maritime Affairs and its affiliated curriculum Cal Maritime has:

- Created a position of International Coordinator responsible for managing and advising on student study abroad opportunities.
- Created a position of Director of Faculty Affairs to oversee International Scholars Program.
- Created a Foreign Languages Program and instilled requirements for a year of foreign language study for two of its six majors.
- Created a Committee on Unity and Diversity whose charges include a consideration of cultural diversity and tolerance.

Based on student evaluations of the TSGB cruise experience and discussions among students and faculty, Cal Maritime took direct action to enhance student learning and Global Awareness for students in the ABS School of Maritime Policy and Management during summer cruise 2010. For the first time, students in GSMA and BA/IBL disembarked the TSGB for a 10-day period to gain increased real-world experience on the ground in foreign nations. Because their career trajectory is not licensed-track and unlikely to result in employment aboard a ocean-going vessel, GSMA and BA/IBL students disembarked the TGSB in Busan, Korea and took a 10-day journey, along with a faculty member, and rejoined the TGSB in Kobe, Japan. The off-ship excursion was filled with a wealth experiences and interactions with businesses, organizations, and individuals in South Asia that could not have been achieved in one or two days in port.

Additionally, in an effort to assess the impact and quality of coursework that addresses issues under the broad category of Global Awareness, the Institution-Wide Student Learning Outcome (IW-SLO) of Global Stewardship is being assessed during academic year 2010-2011. Because students must be aware of an issue before they can be a steward of it, we hope the assessment of Global Stewardship will provide further insight into the campus-wide efforts to increase Global Awareness generally and its application as a steward more specifically.

Integrative Chapter

At a small institution of higher education such as Cal Maritime, the multiple demands placed on faculty, staff and administration to ensure the delivery of a quality education to our students often leaves little time and resources to self-reflexively evaluate the very mechanisms and procedures which comprise that process. It has been, therefore, extremely valuable to put together the Educational Effectiveness Review Report as this has given us the opportunity to critically reflect upon the system as a whole. We are pleased with what we have accomplished; however, we acknowledge the areas which still need improvement.

When the Institutional Proposal was submitted to WASC in February of 2007, a series of objectives were aligned with the mission of the institution on one hand and with specific outcomes and the corresponding WASC Criteria for Review on the other. For the most part, those objectives have been met. Likewise, in the early stages of drafting the EER Report, the Educational Effectiveness Framework Rubric was distributed to key faculty, staff, and administrators, and was then re-submitted at the conclusion. Significant improvement has been made.

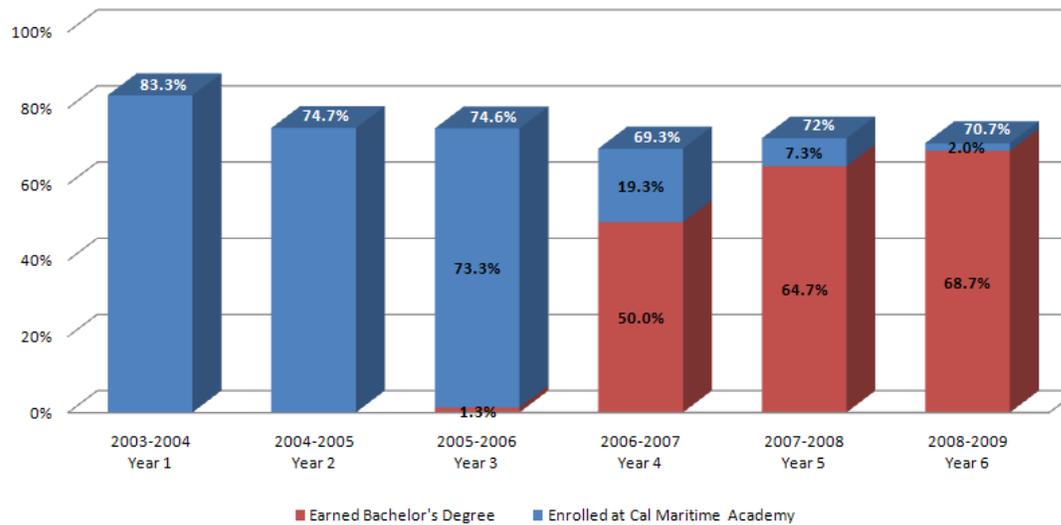
It should be noted that in the Commission's June 26, 2009 letter to President Eisenhardt, WASC President and Executive Director Ralph Wolf wrote that Cal Maritime should include in its EER Report "campus-wide engagement and reflection on the general state of learning at the institution." We believe that our report does indeed reflect engagement and reflection on the state of learning, and, in fact, the very act of the re-accreditation process itself has elevated the awareness of our teaching and learning engagements, including in particular the creation of the Institution-Wide Student Learning Outcomes and their alignment with Program Outcomes and the creation of a comprehensive Assessment Council.

In the future, the Institution-Wide Assessment Council will take up those Student Learning Outcomes with cross-disciplinary, cross-mission components, and the assessment results will shape decision making. The IWAC, too, it should be noted, has secured annual funding, and through its competitive application process and procedures outlined in its founding documents should be able to sustain the institutional assessment for years to come. The Program Review Calendar included in Essay One and the Program Review Conduit and Timeline located in Appendix VII also clearly chart the path for the timely future evaluations.

The mission-oriented entities of intellectual learning, applied technology, leadership development and global awareness are parsed out in this Report as separate essays in order to better evaluate our strengths and weaknesses as these categories impact educational effectiveness. However, as noted in the introduction they are by no means discrete categories, and when examining and measuring student success through a variety of mechanisms, it is important to understand that these components, too, are thoroughly integrated. The sustainability of both the mission of the institution and the measurement of educational effectiveness lies in the alignment of these quadrants of the compass. We have shown how this is accomplished in the individual chapters, and we plan to continue to improve upon this objective. In Leadership Development, for example, a new integrative committee of faculty, staff, and administrators will meet on a permanent basis as part of the Provost's Council in order to facilitate and drive Leadership Development objectives. As another example of integration, in the CPR WASC had made several recommendations related to issues of diversity: these recommendations are not only addressed explicitly in Appendix II, but as issues of multiculturalism can be recognized and embedded in any formulation of Global Awareness, they are also acknowledged in Essay Four.

The combination of the four points of the mission, we believe, clearly lays a solid foundation for student success, and graduation/retention and job placement data bear this out. Cal Maritime has the highest graduation and persistence rates in the Cal State System, with a 68.7% graduation rate for 6-year full time freshmen, versus the system-wide average of 51.3% for the same cohort.¹⁴

Figure 5.1
Cal Maritime Academy 6-Year Full-Time Freshmen Graduation and Persistence Rates (2003-2009 Cohort)



Our students, furthermore, continue to secure employment upon graduation because of the education and hands-on training they receive at Cal Maritime. This can be seen in Figure 5.2, which documents placement in jobs requiring the skills of the major for the most recent graduating class of 2010.

Figure 5.2 Graduate class 2010 graduated as of May, 2010

Program	2007 Graduates	2008 Graduates	2009 Graduates	2010 Graduates	Placement in Jobs Requiring Skills of the Major Class of 2010
Marine Transportation	44/50	61/63	54/62	61/63	60/61
Marine Engineering Technology	23/25	29/31	10/11	28/29	27/28
Facilities Engineering Technology	3/6	2/3	3/5	10/10	9/10
Global Studies and Maritime Affairs	9/11	13/13	26/30	21/23	19/21
International Business and Logistics	10/10	12/12	11/13	17/17	16/17
Mechanical Engineering (License)	15/20	22/23	26/27	10/11	9/10
Mechanical Engineering	*	*	*	12/13	11/12

*Prior to 2009, data on license and non-license track Mechanical Engineering alumni was not disaggregated.

Cal Maritime has grown and changed immensely: from its initial incarnation as the California Nautical School through its incorporation into the California State University and forward into the twenty-first century, the institution has risen to the challenge of rapidly changing times without losing sight of the mission which has been a guiding beacon for so long.

The challenges and opportunities provided by a maritime academy are manifold. On the one hand, the specialized nature of our institution sets us apart from other institutions of higher learning, but this very uniqueness –the combination of experiential learning with a commitment to intellectual development to shape future leaders in a globalized arena – is what ultimately enables us to meet the needs of students, industry, and society through superior, up-to-date, and visionary educational programs.

¹⁴ Consortium for Student Retention Data Exchange <http://www.asd.calstate.edu/csrde/index.shtml>