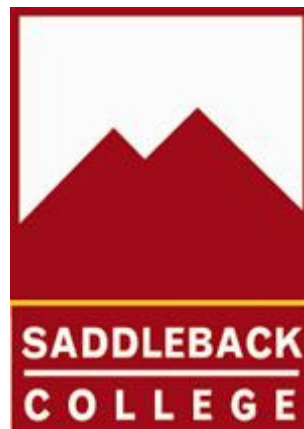


# **Saddleback College Program Review**

## **Marine Science Technology**



**Submitted January 2012**

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## **Program Review Team Members and Approvals**

Program Review Team Chair:

**Morgan E. Barrows**

Program Review Team Members:

**Morgan E. Barrows**

**John Richards**

**Don Taylor**

## Program Review Checklist

Date Completed	Action
Fall 2011	Contact EPA Chair for orientation
Fall 2011	Form Program Review Team (PRT)
Fall 2011	Gather documents (Org Chart/Staffing Profile/SLO Assessment Forms/Data Sets)
Fall 2011	Solicit input from faculty and students
Fall 2011	Determine if additional research is needed
NA	Contact College Research Specialist if necessary
Spring 2012	Write Program Review report
Spring 2012	Submit report to Dean and EPA Chair for review
Spring 2012	Report submitted to Academic Senate for acceptance
Spring 2012	Report submitted to the President and the Vice President of Instruction
TBD	Report posted to the EPA website
TBD	Presentation to the Consultation Council

## **Section I: Program Overview**

### **A. The Mission of the Program and its Link to the College's Mission and Goals**

#### **A1. Overview**

The mission, philosophy, functions and goals of the South Orange County Community College District require that a systematic review of all Programs/Curricula be conducted to ensure quality and relevance, and the effective and efficient use of resources. This systematic review is the process of Program Review and Improvement, which must be a cooperative process, utilizing the knowledge and expertise of faculty, administrators, current and former students, employers and advisory committee members.

The results of program review will be incorporated into the strategic planning processes that the college Budget and Planning Council presents to the college. Program Review will also support the Western Association of Schools and Colleges (WASC) accreditation standards, interface with the college Enrollment Management Plan and most importantly, provide information for program planning and improvement. The major objectives of Program Review are to measure and improve the quality of instructional programs, support services and student learning

An overview of the Marine Science Technology Department and key recommendations are presented in this section. The overview details the mission and goals of Saddleback College, the Advanced Technology and Applied Science Division (ATAS), and the Marine Science Technology Department. The main document provides recommendations for the: curriculum, instruction, student success, staffing and resources, staff development, community outreach, articulation, and accreditation.

The Marine Science Technology Department offers three certificates: Seamanship; Marine Science Technician; and Aquarium and Aquaculture Science. It is important to note that this Program Review does not cover the Aquarium and Aquaculture certificate, which has been proposed for deletion.

#### **A2. College Mission and Goals**

##### Mission Statement of Saddleback College

Saddleback College enriches its students and the south Orange County community by providing a comprehensive array of high-quality courses and programs that foster student learning and success in the attainment of academic degrees and career technical certificates, transfer to four-year institutions, improvement of basic skills, and lifelong learning.

## Values of Saddleback College

Saddleback College offers a comprehensive postsecondary education and a full range of student services. Emphasis is placed on open access to all students, including a changing and diverse student population. Academic success and student achievement are joint responsibilities of the students, the staff, and the College. To this end, the College embraces:

- **Commitment**  
We commit to fulfilling our mission to serve the south Orange County community.
- **Excellence**  
We dedicate ourselves to excellence in academics, student support, and community service.
- **Collegiality**  
We foster a climate of integrity, honesty, and respect.
- **Success**  
We place our highest priority on student learning and delivering comprehensive support for student success.
- **Partnership**  
We strive to develop strong and lasting partnerships among students, faculty, staff, and the community.
- **Innovation**  
We anticipate and welcome change by encouraging innovation and creativity.
- **Academic Freedom**  
We endorse academic freedom and the open exchange of ideas.
- **Sustainability**  
We promote environmental sustainability and use our resources responsibly to reduce our ecological impact.
- **Inclusiveness**  
We cultivate equity and diversity by embracing all cultures, ideas, and perspectives.
- **Global Awareness**  
We recognize the importance of global awareness and prepare our students to live and work in an increasingly interconnected world.

### **A3. Mission Statement of the Advanced Technology and Applied Science Division**

To provide quality technical instruction and career preparation to our students and to participate in the vision and mission of Saddleback College.

### **A4. Goals of the Marine Science Technology Department**

The goal of the Marine Science Technology Department is to provide quality instruction leading to an AS degree, certificate, or successful employment in the ocean related environment. The Marine Science Technology program is designed to train individuals

as crew and operators of marine vessels, and technicians to assist scientists, engineers, and research personnel both aboard ship and ashore. It may also prepare students for Coast Guard licensing while developing marketable skills in the technical areas of navigation, marine electronics, and sails and rigging. In the past, the program has trained students in marine coatings, fiberglass materials technology, engines and power trains and other marine systems.

The Marine Science Technology program relates directly to the larger mission of the College by providing learning opportunities that promote student success, and preparing individuals for their roles in an ocean oriented occupation.

## **B. Historical Background and Unique Characteristics of the Program**

The Marine Science Technology program was inaugurated in the early 1970s to encourage and provide the knowledge and skills needed for the safe operation of marine vessels both as crew and as captain. At the same time, a Marine Science Technician program was developed to encourage and provide knowledge and skills needed by those employed on vessels studying ocean science. These two programs ran parallel utilizing facilities offered by the Floating Laboratory Programs of the Orange County Department of Education, donated KC 40 foot ketches, and various marine laboratory and diving programs offered by Saddleback College. Over the following two decades, many students graduated to jobs made possible by their Marine Science Technician training. Many courses were developed, the certificate programs came into being, and all was accomplished using a group of part-time instructors.

In May of 1990, the Advanced Technology and Applied Science Division generated a three-year plan with the mission of:

- A strong transfer program providing an important transition between high schools and upper division course work at four-year institutions.
- A highly developed occupational and technical curriculum serving business and industry by providing well-trained personnel in a rapidly expanding economy.
- A flexible continuing education program to assist students to retrain and maintain competencies in a very competitive and complex society.
- A highly developed articulation program that deals effectively with local high schools, regional occupational programs, and four-year institutions.

The Marine Science Technology portion of this mission was described as follows:

Located within 7 miles of one of the fastest growing commercial and pleasure harbors in Southern California, Marine Science Technology is charged with preparing individuals for their roles in an ocean oriented community. Divided into three certificate options, Marine Science Technology is designed to train individuals as crew and operators of

marine vessels, divers, and technicians to assist scientists and engineers and research personnel. Training in all areas includes classroom and laboratory work both on campus and on college operated vessels.

At the dawn of a new decade, the operative phrase was "rapidly expanding"; the economy, technology, and the demands of both students and industry were expanding rapidly. An active Advisory Committee instituted expansion of the diving program, a program to prepare students for Coast Guard licensing, the development of new modular classes such as sails and rigging, marine coatings, fiberglass materials technology, engines and power trains and other marine systems such as marine electronics/electrical and marine plumbing.

A full-time Marine science instructor was recommended, and it was felt that such a position would be critical if expansion of the program were to develop efficiently and effectively. Unfortunately, the Marine Science Technology Department has never had a full-time faculty member

In the fall of 1990, expansion came to an end. During an advisory committee meeting, the Division Dean announced that there was no money to implement any of the plans we had developed and indeed currently offered courses would perforce be reduced or eliminated. At this time, most four-unit classes became three unit classes and several were eliminated entirely. During the mid to late 1990s, the Marine Science Technician Certificate was emasculated; the requirements degenerated into a hodgepodge of miscellaneous classes with no apparent cohesiveness or value. The Marine Science Technician certificate was generally ignored except when a student realized they could receive it as part of their aquarium certificate course work. There was even talk of eliminating the certificate entirely.

The only program to survive was Seamanship with its expanded goal of obtaining a Coast Guard Vessel Operators License. While many earlier students in the Seamanship program had gone on to apply for and receive their Coast Guard license, it now became an avowed goal of the certificate program.

During the spring of 2004, there was discussion among faculty of making changes in the Seamanship Certificate program to reflect more accurately the needs of students wanting employment, and perhaps careers in seagoing vessel operation. There was also a rebirth of interest in reviving the Marine Science Technician certificate to make it of real interest and value for students desiring employment in seagoing scientific endeavors. The concept was developed of having a core of required courses with a number of choices between more specialized classes in addition to the required courses.

During the fall of 2004, some progress was made in organizing courses and certificates, but it was not until the fall of 2005 that major design changes, curricular additions, and marketing decisions were implemented. Employers were surveyed, the programs of

other schools were analyzed, and our own faculty's sense of advances in the technology of maritime trades was added to the process.

In summary, organizational changes implemented in 2005 and brought to fruition over the intervening years have made exciting new curriculum choices and opportunities available to students. Extremely effective marketing instruments have been developed and employed including an excellent short video showcasing the programs. Much larger numbers of students are entering the programs with a view to earning a Marine Science Certificate and/or employment on the seas. Tolerance by the College of low enrollment in specialized classes, together with greater flexibility within specific course requirements, has produced the possibility for students to earn their certificate in less than two years. This has been viewed favorably by both students and their prospective industry employers.

In conclusion, after considerable effort to respond to industry request, student interest, and new technology in a rapidly changing maritime universe, major additions, revisions, and reorganization were made to the Marine Science Technology Certificate programs during the fall of 2005 to take effect in the fall of 2006.

### **C. Progress Since the Last Program Review**

The Marine Science Technology Department has updated its entire curriculum and has even added new courses, including Marine Ecological Survey/GIS and Electronic Aids to Navigation. Most of the changes have focused on incorporating new technology into the curriculum.

The department has also restructured the certificates allowing students greater flexibility in course selection, which allows student to custom design an educational path that best meets their needs. This change has also made it easier for students to obtain certificates.

### **D. Utilization of Student Learning Outcomes**

Since the implementation of program-level student learning outcomes, the department has surveyed the students in the marine science technology classes to determine if they were satisfied with the information and concepts they gained from each class in the program. The results of the survey indicated that 100% of the students were in fact satisfied with the information and concepts gained from the classes. The Marine Science Technology Department has also utilized student learning outcomes for improvement to all of the courses. At this time there are a minimum of three student learning outcomes for each course in the department. These outcomes are evaluated and used to make positive changes within each course. These changes allow for course modifications that will review the student learning process. All of these improvements over the past four years have allowed our students to meet the expanded technical expertise to meet current industry requirements.

## **E. Current Strengths, Opportunities, and Challenges**

### **E1. Strengths**

The greatest strength this department has is its faculty. The associate faculty have an incredible depth and breadth of knowledge that is brought into the classroom to be shared with the students. The faculty also showcase their skills and commitment to innovative instruction despite the many challenges they face.

This program provides students with a great variety of classes, including very technical classes, and gives students access to lots of different boats inexpensively. In addition, Lab classes are often taught at Dana Point Harbor, which is minutes away from campus. This proximity to Dana Point Harbor allows students to learn in real world settings. Students are also in close proximity to the Dana Point Ocean Institute and its Marine Aquarium, Marine Life Refuge and Floating Laboratory, which are incorporated into the curriculum.

### **E2. Opportunities**

While students frequently enroll in the marine science technology classes to learn how to sail, the department has the opportunity to expand the program to encourage students to gain skills for employment in the field. Also, with the addition of new more technical classes, such as geographical information systems (GIS) and sub-sea remote observational vehicles, students will be better prepared for a career in the marine science field. Since employment opportunities in this arena generally involve one or more of: a.) vessel operations or b.) vessel service and support or c.) technical marine expertise associated with seagoing maritime research, the Marine Science Technology program has an opportunity to strengthen its offerings to address this fact.

Another opportunity is to close the loop in the license preparation offering by conducting Coast Guard license examinations on campus. Incorporating this aspect of the licensing process makes the Seamanship program a one-stop shop and will attract a far greater number of students, produce a far greater number of licensed mariners, and increase the odds of their long-term success.

### **E3. Challenges**

There are many challenges that must be resolved for this program to be successful and accomplish its mission and prepare students for employment opportunities. First and foremost, is to hire a full-time Marine Science Technology instructor who then could be a full-time champion for the Marine Science Technology program's efficient and effective expansion and development. It is incredibly difficult to run a program successfully without a full-time instructor.

Not only does the department not have a full-time faculty member, but it does not have any classified support. This an enormous challenge since there is no support staff for

the part-time faculty members, who are in despite need for help. There is also no one to oversee, maintain, and ensure safe and proper working equipment. This presents a problem because most of the equipment, including the boats, are housed at Dana Point harbor and if there is not a laboratory technician, or a full-time faculty member then that equipment is not monitored on a regular basis.

Another challenge the program faces is low enrolled classes. Although the actual sailing classes can meet enrollment criteria, the other classes still have difficulties. The exact reason for the low enrollment is unknown at this time, and can actually be due to a variety of reasons, but it is believed the primary reason is the lack of a full-time faculty member focusing on the development of the program. Regardless, it is not practical to run classes with less than 10 students on a regular basis.

Not only does the program suffer from low enrolled classes, but very few students earn a certificate in Marine Science Technology. Therefore, the department needs to indentify methods for increasing certificate completion. This can be difficult when 18% of the students taking marine science technology classes have an educational goal of personal development (Table 3).

An additional challenge is maintaining the department's fleet of 15 boats. Currently, there are only five part-time instructors in the department and they try to look after the boats, but there really needs to be someone who can maintain them on a regular basis. The boats need regular maintenance to ensure safe operations, which is very expensive.

The boats are also aging and it is predicted that in the next few years the department will need to start replacing its fleet of boats. This will be incredibly expensive and a decision will have to be made to determine if the college is willing to make that investment.

The department uses classroom facilities at the OC Sailing and Events Center, but there has been a recent turnover of management there and now they want to renegotiate its contract with the college. Although, the Saddleback College campus is near the harbor, it is much more convenient for faculty and students to hold lectures at the harbor so they can use the harbor for demonstrations and there is no loss of time commuting from campus for lecture to the harbor for labs, including actual vessel time.

Overall, the Marine Science Technology Department faces many challenges including no full-time faculty, no classified staff, low enrolled classes, and increasing costs to run and maintain the fleet of boats. With no resolutions to these challenges, the fate of the program is in severe jeopardy.

## Section II: Review Report

### A. Faculty and Staff

- a. 0 full-time faculty members
- b. 5 part-time (associate) faculty members
- c. 0 part-time/full-time classified staff
- d. 1 Dean (administrator)

The Marine Science Technology program faculty is 100% part-time. This ratio negatively affects the program's ability to fulfill its mission because very simply, a full-time instructor is what the programs needs. Part-time instructors cannot put in the time or energy to develop the program.

Therefore, the principal change needed to make this program more effective is the hiring of a full-time Marine Science technology instructor. This is essential for the program's efficient and effective expansion and development.

There is also a great need for classified staffing. It is extremely difficult to run and maintain a program, especially one that is primarily off campus, without staff and a full time faculty member. There is no one to oversee the boats to make sure they are maintained and are operating properly and safely. Therefore, it is absolutely critical to have support staff of at least 20 hours.

The Marine Science Technology Department is fortunate to have a Dean that supports the program and needs of its students. Therefore, it is believed that there does not currently need to be a change in administration. In terms of faculty, it is believed that recruiting new associate faculty members with diverse technical qualifications may breathe new life into the low enrolled or unoffered marine science technology classes. The department will also have to hire more associate faculty members if it plans on growing and adding more classes.

### B. Curriculum and Instruction

The Marine Science Technology Department offers three certificates: Marine Science Technician (Table 1); Seamanship (Table 2); and Aquarium and Aquaculture Science, which is proposed for deletion. The courses are designed to give students the practical seamanship skills of navigation, vessel operation, marine systems and equipment maintenance as well as scientific expertise.

Classroom work in oceanographic disciplines is combined with seagoing laboratory experience aboard marine research vessels, both sail and power. The program is designed to develop a solid educational foundation so that graduates will be prepared to work closely with scientists, researchers, engineers, marine survey and operations

personnel as they endeavor to manage this enormous resource for the good of mankind.

**Table 1 – Marine Science Technician Certificate**

<b>Course ID</b>	<b>Title</b>	<b>Units</b>
ENV 18 OR ENV 19/BIO 19* OR MS 4	Intro to Ecology  Marine Biology  Southern California Coastal Ecology	4
MS 20	Introduction to Oceanography	4
<b>Select 15 units from Restricted Electives</b>		
MST 100** AND MST 101**	Aquarium Systems  Aquarium Management	3  1.5
MST 201	Marlinspike Seamanship	2
MST 202	Marine Weather	3
MST 205**	Water Quality and Toxicity of Captive Aquatic Systems	3
MST 210	Coastal Navigation	3
MST 211	Celestial Navigation	3
MST 212	Sailing, Seamanship, and Boating Safety	3
MST 214A	Intermediate Ocean Sailing	3
MST 214B	Advanced Cruising Under Sail	3
MST 215	Vessel Command and Organization	3
MST 216	USCG Master License and Examination Preparation Course	3
MST 217**	Sub Sea Technology: Remotely Operated Vehicle	3
MST 218	Electronic Aids to Navigation	3
MST 219	Marine Ecological Survey/GIS	3
MST 289	Special Topics	1
<b>Total</b>		<b>23</b>

\*In Fall 2012, Bio 19 will no longer be cross-listed with environmental studies.

\*\*Proposed deletion

**Table 2 – Seamanship Certificate**

<b>Course ID</b>	<b>Title</b>	<b>Units</b>
MST 201	Marlinspike Seamanship	2
MST 202	Marine Weather	3
MST 210	Coastal Navigation	3
MST 214B	Advanced Cruising Under Sail	3
MST 215	Vessel Command and Organization	3
<b>Select 9 units from Restricted Electives</b>		
MST 211	Celestial Navigation	3
MST 212	Sailing, Seamanship, and Boating Safety	3
MST 214A	Intermediate Ocean Sailing	3
MST 216	USCG Master License and Examination Preparation Course	3
MST 217**	Sub Sea Technology: Remotely Operated Vehicle	3
MST 218	Electronic Aids to Navigation	3
MST 219	Marine Ecological Survey/GIS	3
MST 224	Channel Islands	1.5
<b>Total</b>		<b>23</b>

\*\*Proposed deletion

Marine science technology classes are tied directly to the mission of Saddleback College as the department offers a comprehensive array of high-quality courses and programs that foster student learning and success in the attainment of an academic degree, a career technical certificate, transfer to four-year institutions, and/or lifelong learning.

The Marine Science Technology Department offers courses for a variety of educational paths. Most of the classes are designed to satisfy certificate requirements in the three programs. The department does not offer transfer, general education, and information competency courses, but students can earn an A.S. degree if they complete the certificate requirements and take a minimum of 60 units including general education requirements with an overall GPA of 2.0. The majority of the students (29%) taking marine science technology classes have an educational goal of transferring to earn career technical certificate or to acquire/update job skills (Table 3). Approximately 24% of the marine science technology students take classes to a four year university (Table 3). However, 18% of the students taking marine science technology classes have an educational goal of personal development (Table 3). Therefore, it is necessary to offer a variety of classes that meet the different needs of the students.

**Table 3 – Summary of Educational Goals by Year/Term**

<b>Educational Goal</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>	<b>2009-10</b>	<b>2010-11</b>
Obtain a Bachelor's degree after Assoc.	17	27	41	34	28	19
Personal Development	35	32	31	22	19	23
Undecided on goal	20	22	26	31	25	20
Improve basic skills	8	19	20	28	23	17
Prepare for a new career	25	16	22	18	14	9
Obtain a Bachelor's degree w/o Assoc.	11	9	17	13	13	10
Discover/develop career interests	11	10	8	14	6	7
Advance in current job/career	8	6	9	11	6	4
Obtain a voc certificate w/o transfer	3	8	8	9	8	7
Obtain a voc certificate and transfer	4	6	6	4	7	2
Obtain two-year voc. degree w/o transfer	3	5	6	6	3	1
Maintain license		1	3	3	2	2
4 yr col std taking crs to meet 4 yr requirements				1	5	5
Obtain a non-voc degree w/o transfer		1	2	2	4	1
Complete credits for HS diploma or GED			1			
<b>Total Students</b>	145	162	200	196	163	127

Data Source: SOCCCD InForm December 2011

Over the last six years, the department has offered an average of 13 sections each year and two sections in the summer (Table 4). The average enrollment per section ranged from 16 to 22 students (Table 4). It is important to note that the rise in marine science technology course sections offered was primarily due to the increase in demand for aquarium and aquaculture classes. It was decided in the Summer 2009 to delete the

Aquarium and Aquaculture program and therefore, those courses were no longer offered starting in the Fall 2009.

**Table 4 – Access and Productivity**

	Academic Year					
	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Number of Course Sections Offered	9	11	16	17	13	9
End of Term Headcount	180	244	285	299	202	181
Average Enrollment per Section	20	22	18	18	16	20

Data Source: SOCCCD InForm December 2011

All courses in the Marine Science Technology Department are reviewed by faculty and presented to the College Curriculum Committee. The department chair, advisory committee, and the associate faculty work together to make sure that the program continues to offer appropriate classes in the marine science technology field. Not only are businesses asked what classes and information they would like to see our students learning, but curriculum at other colleges and universities are evaluated. Curriculum is reviewed every two years and it is at that time necessary changes are made, including adding and deleting classes.

Instructional goals and objectives are documented in the course curriculum. The faculty use a variety of methods to assess student success including hands on labs and demonstrations, quizzes, exams, homework, projects, reviews of notebooks and journals, and research papers. All instructors follow the adopted topical course outline, although each instructor may place special emphasis on selected topics in which he/she is especially versed.

In conjunction with this program review, department faculty are further developing Student Learning Outcomes (SLO) for each course of instruction. The data collected from the assessment of the SLO-based instruction will allow faculty to explore correlations and success rates for specific competency attainment, thus being able to better measure and document objective indicators of student success and competency.

Technology has now been incorporated into classes that are offered in the Marine Science Technology program.

### **C. Student Success**

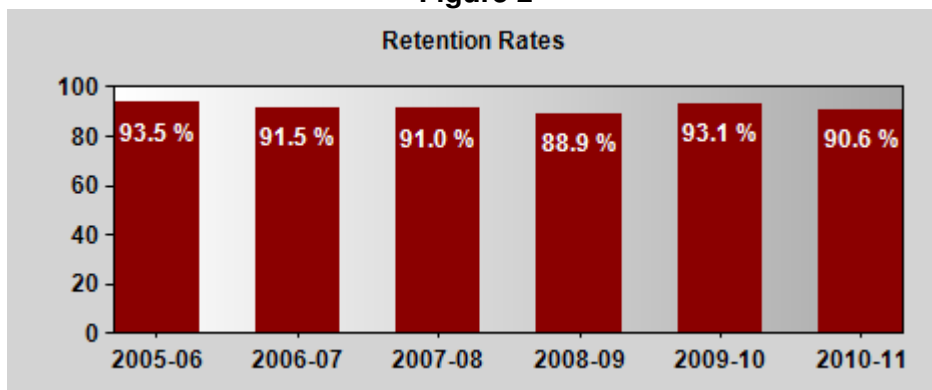
Over the last six years, the Marine Science Technology Department has an average successful course completion rate of 79% (Figure 1) with a high 91% average course retention rate (Figure 2), both of which are higher than the College rates. These rates indicate that the majority of students who enroll in the marine science classes complete the course successfully. The department will focus on not only increasing student enrollment, but also improving the average successful course completion rate. The department will also continue to maintain its high retention rates.

**Figure 1**



Data Source: SOCCCD InForm December 2011

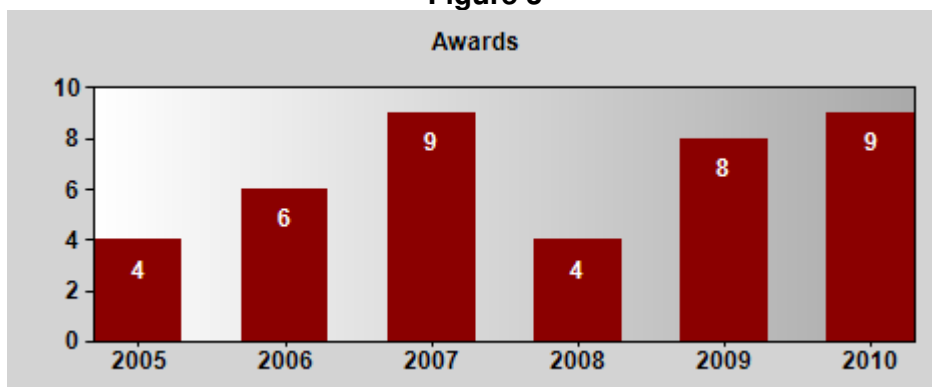
**Figure 2**



Data Source: SOCCCD InForm December 2011

The Marine Science Technology Department has a very low completion rate for certificates (Figure 3). Between 2005 and 2010, only sixteen students earned a certificate in the Marine Science Technician program and Seamanship program (Table 5). A lot of our students are interested in personal educational development and are not actually interested in obtaining a degree or certificate. Also, low enrolled classes have had to be canceled and this is believed to have had an impact on the number of certificates earned by students. As the program grows, it is believed the number or degrees and certificates obtained will also increase. Faculty members are encouraging marine science technology students to get their degrees and/or their certificates. For example, it has been pointed out to the faculty and the students that in order to obtain a certificate, it is not enough to take the classes, but in fact the student has to apply for the certificate. Knowing that, faculty members are handing out the certificate form to their students at the end of the semester. Regardless, the low completion rate of certificates is a concern for the department and concerted efforts will be made to increase these numbers as well as documenting the number of Coast Guard licenses earned.

**Figure 3**



Data Source: SOCCCD InForm December 2011

**Table 5 – Awards by Major**

Awards by Major	2005	2006	2007	2008	2009	2010
Aquarium and Aquaculture Science				2	7	1
Aquarium and Aquaculture Technology						2
MARINE SCIENCE TECHNICIAN	1	4	1	2		2
MARINE SCIENCE TECHNOLOGY: SEAMANSHIP			1		1	4
OCEAN TECHNOLOGY: AQUARIUM AND AQUACULTURE TECHNOL	3	2	7			
<b>Total Awards</b>	4	6	9	4	8	9

Data Source: SOCCCD InForm December 2011

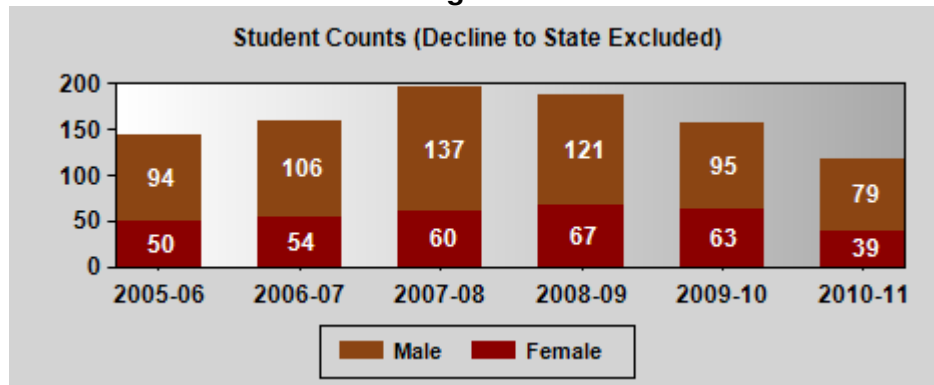
Although many of the marine science technology students do not earn certificates, a lot of them have taken many of our marine science technology courses and the knowledge/skills acquired have led to new and/or upgraded employment in the Marine Industry. The following are just a few examples of what former students are doing:

- Blake Taylor (2008) - A student in good standing at California Maritime who will receive Engineering degree and USCG Engineer License, Unlimited Tonnage, and immediate employment
- James Baldwin (2010) - Has enlisted in Coast Guard
- Elizabeth Zeiger (2009) - Paid crew and Biology tech (Pacific voyaging)
- Helen Tam (2010) - Paid crew and Physician (Pacific voyaging)
- Amanda Calkins (2009) - Sells her knot work at Hobie Surf
- John Dahl (2010) - Irvine Company Marina Manager (also writing a book on history of Boating on Lake Arrowhead)
- Cindy Wynne (2009) - Yacht racer with trophies/Skipper for hire
- Jeff McCroy (2009) - Manages Church Marine Program and Activities
- Eric Gritzmacher (2010) - USCG Auxiliary Safety Officer (upgraded)

- Ryon Engle (2009) Qualified for and employed as Life Guard (San Clemente)
- Boris Buzan (2010) - USCG Auxiliary Safety Officer (has upgraded to Instructor)
- Eric Stoller (2010) - Paid crew on sail yachts, Saddleback College "Volunteer" (pursuing Sea Time for USCG License)
- Brad Hughes (2008) -Marine Program Coordinator at UCI
- Michael Dickinson (2007) - Qualified for and has become a full time SAMS Marine Surveyor
- Frank Dority (2007) - Passed USCG License Exam, received 100-Ton license, now a charter/delivery Captain
- Joanne Neidenhauer (2007) - Passed USCG Exam, now a Charter Captain
- Patrick Larson (2008) - Yacht Charter and Marine maintenance business
- Lou Mennicino (2008) - Yacht Sales (has upgraded to sea trials and vessel inspections to improve business (South Mountain Yacht Sales)
- Britt Gorrall (2007) Has enlisted in Coast Guard
- Dan Clifford (2008) - Yacht Sales and upgraded to Sea Trials
- Ken Westcott (2007) Applied for and obtained employment ast Newport Harbor Shipyard

Looking at the gender breakdown for Maine Science Technology for the last five years, it was 34% female and 66% male (Figure 4). Department faculty members intend to increase promotional efforts to attract female students to enroll in our classes to make it more evenly distributed. As the statistics show, the majority of the students enrolled in marine science technology classes are White (62%), Hispanic (7%), and Asian (4%) (Table 6). Upon reviewing this information, the department will try to identify new methods to increase the underrepresented ethnicities in the classes. It is extremely important to the department to promote diversity in all of the classes.

**Figure 4**



Data Source: SOCCCD InForm December 2011

**Table 6 – Ethnicity by Year**

<b>Ethnicity</b>	<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>	<b>2009-10</b>	<b>2010-11</b>
White, Non-Hispanic	72	91	112	120	106	79
Decline to state	47	49	51	42	22	15
Mexican, Chicano, Mexican-American	7	6	11	14	8	8
Mixed Ethnicity	1	3	4	4	14	13
Chinese	2	4	3	2	1	3
American Indian, Alaskan Native	2	1	3	3	3	2
Filipino	3	3	4	1	2	1
Other Non-White	1	2	1	1	2	2
Other Hispanic	2		1	2	1	1
South American	3	2	1		1	
Japanese	3		1	1	1	
Vietnamese	2	1	2			
Black, African-American			3	2		
Other Asian			1	1		1
Middle Eastern			1			1
Central American				1	1	
Korean				2		
Pacific Islander; Samoan					1	1
Other Pacific Islander			1			
<b>Total Students</b>	<b>145</b>	<b>162</b>	<b>200</b>	<b>196</b>	<b>163</b>	<b>127</b>

Data Source: SOCCCD InForm December 2011

## **D. Facilities, Technical Infrastructure, and Resources**

### **D1. Facilities**

The Marine Science Technology Department does not have dedicated classroom space. While on campus, classes are generally held in TAS 116 or a computer classroom. Classes are also held at the OC Sailing and Events Center at Dana Point Harbor. The biggest challenge has been scheduling classes down at the center because of the recent turnover of management. Not knowing where classes will be taught is incredibly nerve-racking not only for the faculty but for the students as well.

Another challenge deals with boat storage and supply space. There is limited storage space for equipment and supplies in TAS 116, including maps, charts, ropes, tools, and safety equipment. As for the boats and trailer, they have to be stored down at Dana Point Harbor where there is little supervision. There is no one down at the Harbor who oversees the boats on a regular basis. The associate faculty do monitor them, but during times when classes are not in session then it becomes a problem.

## **D2. Technical infrastructure**

Currently, the technical infrastructure is adequate for completion of the instructional mission of providing a high quality teaching environment for marine science technology students. Over the last six years, the department has received additional money to purchase equipment, including the necessary technology to run the Marine Ecological survey and the Electronic Aids to Navigation classes. In the future, the department would like to invest in more electronics and GIS technology.

## **D3. Resources**

The operational budget of the Marine Science Technology Department (approx. \$6000) has remained constant despite rising costs due to inflation and is provided by the college. Unfortunately, the department's budget must be supplemented with funds from other sources including use of (1) Non-Competitive Equipment funds, (2) Competitive Equipment funds, (3) grants from the Saddleback College Foundation, (4) Marine Science Technology Foundation funds, (5) Technology funds, (6) ASG funds, and (7) ATAS Division supply budget

The biggest budget constraint is the ongoing maintenance requirements of the fleet of boats. The boats need regular maintenance and repairs. There is simply not enough money in the budget to run the program. More money is desperately needed to maintain the boats, motors, and related equipment. The Marine Science Technology program operation is very expensive.

The boats are also aging and it is predicted that in the next few years the department will need to start replacing its fleet of boats. This will be incredibly expensive and a decision will have to be made to determine if the college is willing to make that investment.

Although, it can be a challenge to obtain funds for purchasing needed equipment, the Marine Science Technology Department has been fortunate to have a Dean that is actively trying to find money to support the department and its needs.

## **E. Service, Community Outreach, and Economic Development**

The Marine Science Technology Department participates in community service and outreach. For example, the cooperation with public agencies and sailing associations is deep with the existing faculty.

The Marine Science Technology faculty have used their professional expertise and networking ability to come up with instructional material and opportunities for Saddleback College students.

The department has also created a video that promotes the certificates offered in Marine Science Technology. The video has been burned onto CDs where they have been handed out at outreach events and it is streamed on the department's website.

The department also participates in activities such as Senior Day, Family Night, and Welcome Day to help promote the classes and get people interested in the marine environment. The department also participates by doing an open house in campus tours for local high school students throughout the school year.

The biggest challenge to community service and outreach is time. There simply is not enough time to get everything done. For example, it would be nice for a faculty member to personally contact all of the local high schools and talk about the program, but that is quite difficult so instead brochures are sent out. The associate faculty in the department takes on this recruiting effort.

## **Section III: Needs Assessment**

### **A. Human Resource Needs**

A full-time faculty member is needed to strengthen the program and continue to build on the momentum of a new program. The program's success relies on a leader for the program and is an absolute must to build strength and develop cohesiveness within the instructional delivery. It is amazing that the program has come to fruition without a full-time faculty member to take lead. A fulltime faculty member is needed to coordinate the efforts currently performed by informal meetings between part time faculty members and advisory board members in reviewing curriculum, improving existing courses, adding additional courses and developing learning outcomes. The program will be more successful if there is full-time faculty member

The department does not have any classified support. Ideally, the department would like to hire a 20 hour per week laboratory technician to oversee the needs of the Marine Science Technology program. This an enormous challenge since there is no support staff for the part-time faculty members, who are in despite need for help. There is also no one to oversee, maintain, and ensure safe and proper working equipment. This presents a problem because most of the equipment, including the boats, are housed at Dana Point harbor and if there is not a laboratory technician, or a full-time faculty member then that equipment is not monitored on a regular basis.

### **B. Instructional Needs**

The Marine Science Technology Department has been very fortunate with obtaining instructional equipment; however, the department could still use more to help continue to make the boats state of the art. It is important that the needs continue to be met and all equipment remain working properly and kept current and maintained. Also, as the field becomes more technologically advanced, the department will want to invest in technology, such as GIS electronic navigation systems and other related hardware and software.

The biggest budget constraint is the ongoing maintenance requirements of the fleet of boats. The boats need regular maintenance and repairs. There is simply not enough money in the budget to run the program. More money is desperately needed to maintain the boats, motors, and related equipment. The Marine Science Technology program operation is very expensive.

It is also likely in the near future that the department will have to replace the aging boats, and this will be a costly endeavor. However, the department cannot operate without safe, well functioning boats.

Additional money may be needed if the department is to develop a program that would allow students to take the US Coast Guard exam. Currently, the department only

prepares students to take the exam, but it has been discussed that if the department was to actually administer the exam then the program would be much more successful.

### **C. Research Needs**

Even after this program review, the department will continue to research its institutional effectiveness and identify needed improvements or areas of concern. In addition, the department will continue to maintain and further develop Student Learning Outcomes and use this information to help with future program reviews.

More research will also need to be done in order for the programs and classes to remain current. As technology continues to evolve and new issues emerge, it will be important that the department incorporate those changes into the curriculum. It is also essential to continue to research the needs of businesses and the community in general. Finally, continual research is necessary to help with the recruitment process of associate faculty and students.

### **D. Technical, Equipment and Other Resource Needs**

In order to modernize the department, updated equipment and technology will be essential and this will take money, which currently is limited. Furthermore, maintaining proper running boats safely will require additional funds as supplies, equipment, and technology needs to be maintained, replaced, or added.

### **E. Facilities Needs**

The biggest need is a classroom located at OC Sailing and Events Center at Dana Point Harbor. Hopefully, the challenges that have occurred at the center will be resolved in the near future. Another concern is the remodeling of the ATAS building. It is imperative that marine science technology classes have a classroom that can meet its needs for instruction and storage of equipment.

### **F. Marketing and Outreach Needs**

The Marine Science Technology program is marketed in various ways since the students vary from recent high school graduates to people seeking to change careers or upgrade their skills in their existing careers or professions. The department needs to reach out to the community and promote the programs to increase interest in marine science technology classes. In order to do this, the department needs either faculty, staff, or students to attend local events, but money and time limit this from happening.

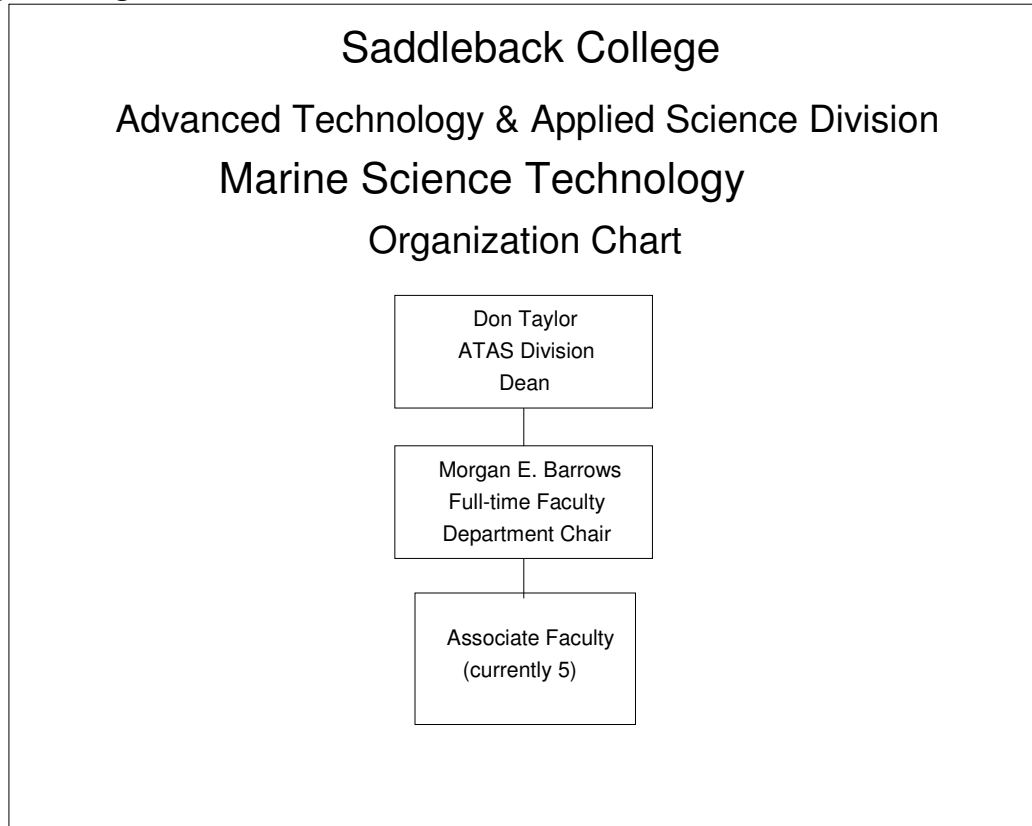
It is also important to have to have a website that is accessible to students. The department is currently working updating its website, but money is needed to buy the necessary program and to maintain the website.

Resources are also needed to purchase marketing materials that can be handed out at events. This includes brochures, flyers, and giveaways.

It would also be great to have an updated short video produced that advertises the department's offerings. This video could be handed out at events and posted on the department's website.

## Section IV: Appendices

### A. Program Organizational Chart



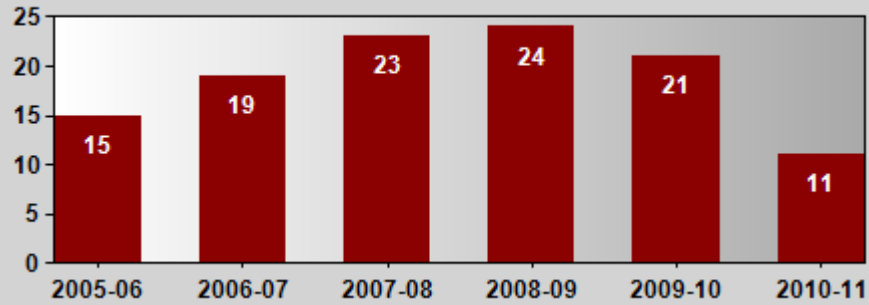
## B. Five-Year Program Staffing Profile

Marine Science Technology Department						
Position	Staffing Levels in the Past 5 Years					% Change from Year 1 to Year 5
	2006-07	2007-08	2008-09	2009-10	2010-11	
Administration	1	1	1	1	1	0
Classified FT	0	0	0	0	0	0
Classified PT	0	0	0	0	0	0
Faculty FT	0	0	0	0	0	0
Faculty PT	5	4	5	4	5	0

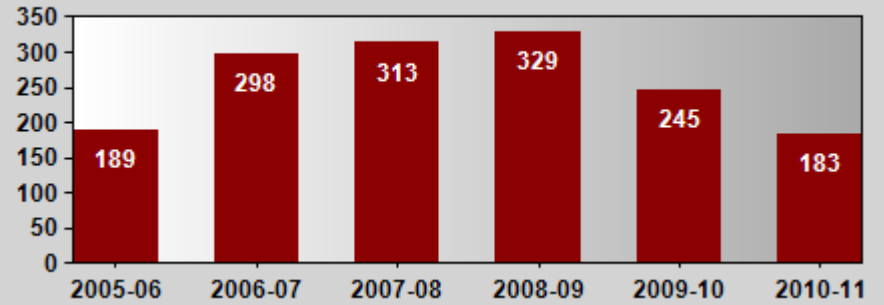
# **Marine Science Technology**

## **Seamanship Certificate and Marine Science Technician Certificate Program Review Data Set December 2011**

Section Counts (D-G Tickets Excluded)



Enrollment Counts (Section Census)



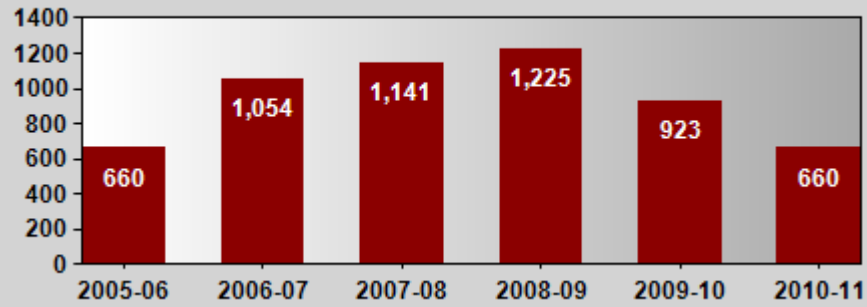
Course ID	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
CWE 168	2	2	2			
CWE 169	2	1				
CWE 180				2	3	1
MST 10	1	1	1	1	1	1
MST 100	1	2	2	2	2	
MST 101	1	1	2	1	2	
MST 201		1	1	1	1	1
MST 202	1		1	1		1
MST 203		1	1	1	1	
MST 204		1	1	1	1	
MST 205		1	1	1	1	
MST 206		1	1	1	1	
MST 207	1	1	1	1	1	
MST 210	1		1	1	1	1
MST 211		1		1	1	
MST 212	2	2	2	3	3	3
MST 214 A	1		1	1		1
MST 214 B	1	1	1	1	1	1
MST 215						

Course ID	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
CWE 168	5		3			
CWE 169		8				
CWE 180				4	1	2
MST 10	11	11	13	8	2	2
MST 100	19	42	28	37	5	
MST 101	9	10	10	8	6	
MST 201		22	17	15	22	17
MST 202	16		10	12		13
MST 203		12	8	7	13	
MST 204		15	5	9	17	
MST 205		11	11	8	11	
MST 206		12	9	5	10	
MST 207	4	7	3	5	2	
MST 210	10		14	18	20	16
MST 211		19		19	24	
MST 212	59	61	49	71	69	66
MST 214 A	12		29	17		20
MST 214 B	20	23	20	20	18	18
MST 215	3	6	8	7	6	3
MST 216			22	8		

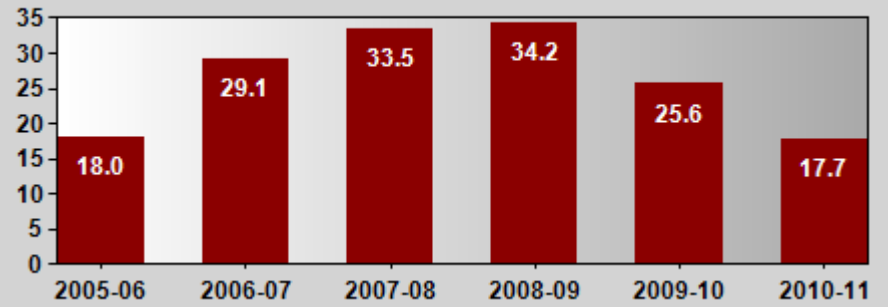
MST 216			1	1		
MST 217			1			
MST 218				1		
MST 219		1	1	1		
MST 224				1	1	1
MST 289	1	1	1			
<b>Total Sections</b>	15	19	23	24	21	11

MST 217			7			
MST 218				13		
MST 219		6	9	9		
MST 224				29	19	26
MST 289	21	33	38			
<b>Total Enrollments</b>	189	298	313	329	245	183

Weekly Student Contact Hours (Section Census)



FT Equivalent Students (Section Census)



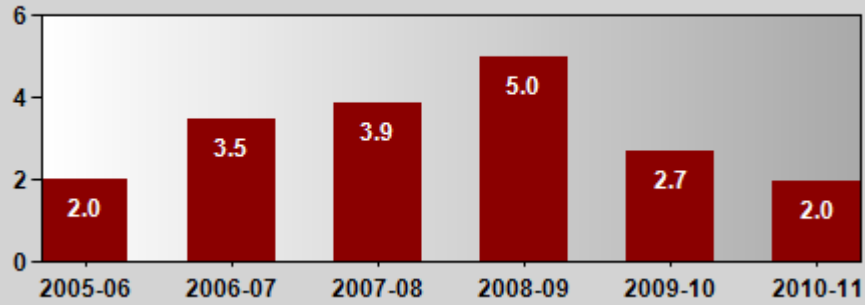
Course ID	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
CWE 168	23		14			
CWE 169		36				
CWE 180				18	9	18
MST 10	44	44	52	32	8	8
MST 100	57	126	112	148	20	
MST 101	41	45	45	36	27	
MST 201		66	51	45	66	51
MST 202	32		30	36		39
MST 203		48	32	28	52	
MST 204		60	20	36	68	
MST 205		44	44	32	44	
MST 206		48	36	20	40	
MST 207	6	11	5	8	3	
MST 210	40		56	72	80	64
MST 211		76		76	96	
MST 212	236	244	196	284	276	264
MST 214 A	48		116	68		80
MST 214 B	92	116	112	108	96	84
MST 215						
MST 216			88	32		

Course ID	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
CWE 168	.2		.1			
CWE 169		.3				
CWE 180				.1	.1	.1
MST 10	1.5	1.5	1.7	1.1	.2	.2
MST 100	1.9	3.6	3.3	3.9	.5	
MST 101	1	1	1.2	1.1	.3	
MST 201		2.2	1.7	1.5	2.2	1.7
MST 202	1.1		1	1.2		1.3
MST 203		1.6	.8	.7	1.3	
MST 204		2	.7	1.2	2.3	
MST 205		1.5	1.5	.1	1.5	
MST 206		1.6	1.2	.7	1.3	
MST 207	.2	.3	.1	.3	.1	
MST 210	1.3		1.9	2.4	2.7	2.1
MST 211		2.5		2.5	3.2	
MST 212	5.1	4.8	4.4	6.5	5.8	6
MST 214 A	1.6		3.9	2.3		2.7
MST 214 B	2.3	2.8	2.1	2.6	2.3	1.7
MST 215	.4	.7	.9	.9	.7	.4
MST 216			2.9	1.1		

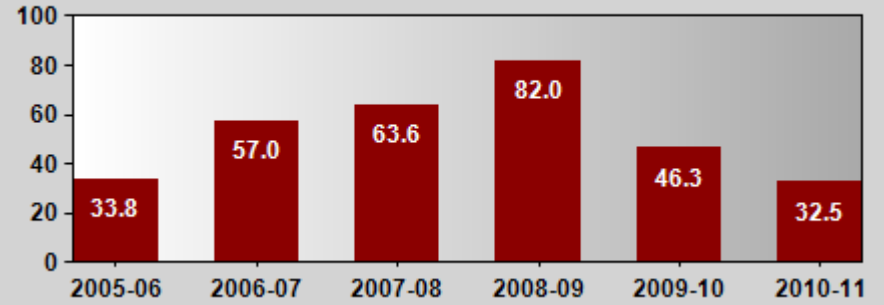
MST 217			21			
MST 218				52		
MST 219		24	36	36		
MST 224				58	38	52
MST 289	42	66	76			
<b>Total WSCH</b>	660	1,054	1,141	1,225	923	660

MST 217			.7			
MST 218				1.7		
MST 219		.8	1.2	.7		
MST 224				1.8	1.2	1.5
MST 289	1.5	2	2.2			
<b>Total FTES</b>	18.0	29.1	33.5	34.2	25.6	17.7

FT Equivalent Faculty



Non-Contract Hours (OSH)

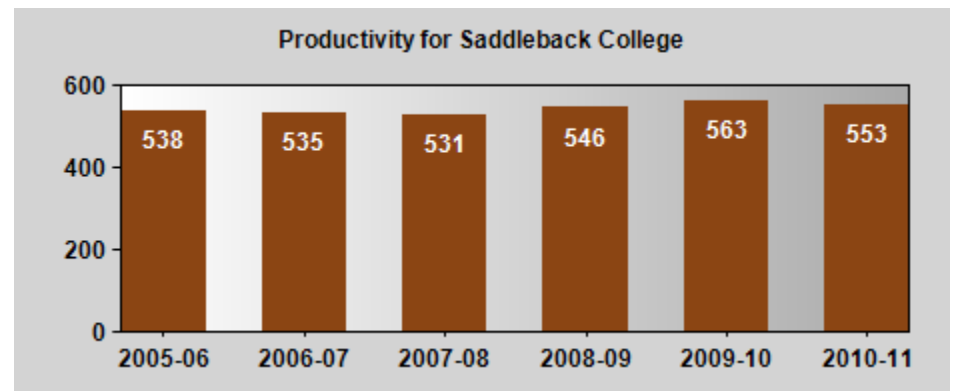
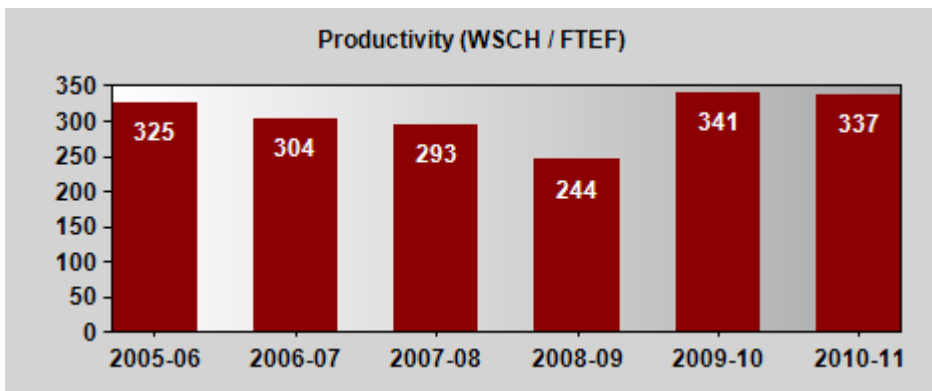


Course ID	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
CWE 168						
CWE 169						
CWE 180						
MST 10	.25	.25	.25	.25	.02	.02
MST 100	.18	.36	.5	.5	.05	
MST 101	.12	.26	.14	.26	.01	
MST 201		.18	.18	.18	.18	.18
MST 202	.13		.2	.2		.2
MST 203		.25	.25	.25	.25	
MST 204		.25	.07	.25	.25	
MST 205		.25	.15	.25	.25	
MST 206		.25	.25	.25	.25	
MST 207	.03	.1	.03	.1	.02	
MST 210	.24		.24	.24	.24	.24
MST 211		.24		.24	.24	
MST 212	.48	.48	.48	.72	.59	.72
MST 214 A	.24		.24	.24		.24
MST 214 B	.24	.24	.24	.24	.24	.24
MST 215						
MST 216			.24	.24		

Course ID	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
CWE 168						
CWE 169						
CWE 180						
MST 10	4	4	4	4		1
MST 100	3	6	8	8	1	
MST 101	2	5	2	5	1	
MST 201		3	3	3	3	3
MST 202	2		3	3		3
MST 203		4	4	4	4	
MST 204		4	1	4	4	
MST 205		4	2	4	4	
MST 206		4	4	4	4	
MST 207	1	2	1	2		
MST 210	4		4	4	4	4
MST 211		4		4	4	
MST 212	8	8	8	12	10	12
MST 214 A	4		4	4		4
MST 214 B	4	4	4	4	4	4
MST 215						
MST 216			4	4		

MST 217			.07			
MST 218				.24		
MST 219		.24	.24	.24		
MST 224				.12	.12	.12
MST 289	.12	.12	.12			
<b>Total FTEF</b>	2.03	3.47	3.89	5.01	2.71	1.96

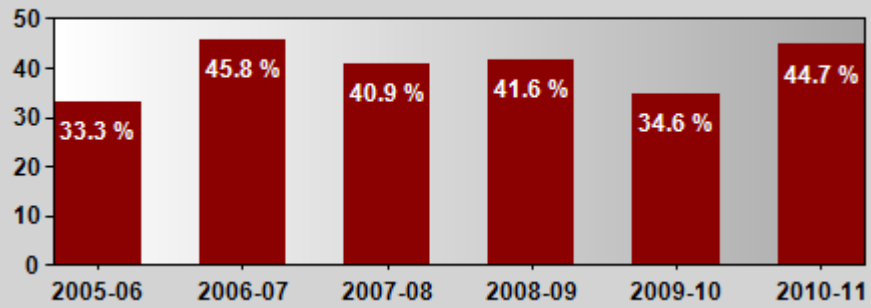
MST 217				1		
MST 218					4	
MST 219			4	4	4	
MST 224					2	2
MST 289	2	2	2			
<b>Total OSH</b>	34	57	64	82	46	33



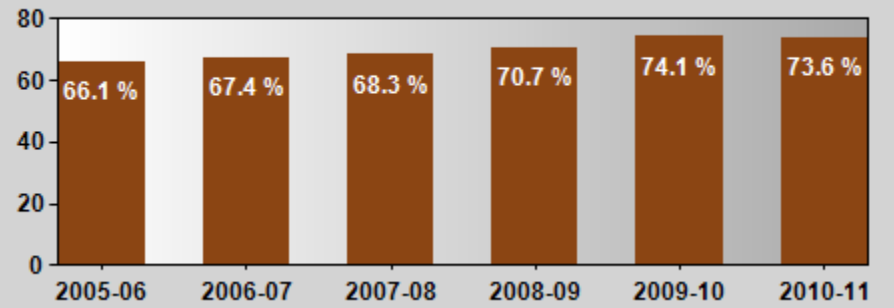
Course ID	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
CWE 168						
CWE 169						
CWE 180						
MST 10	176	176	208	128	400	400
MST 100	317	350	224	296	400	
MST 101	338	173	321	138	2,700	
MST 201		367	283	250	367	283
MST 202	246		150	180		195
MST 203		192	128	112	208	
MST 204		240	286	144	272	
MST 205		176	293	128	176	
MST 206		192	144	80	160	
MST 207	200	105	150	75	150	
MST 210	167		233	300	333	267
MST 211		317		317	400	
MST 212	492	508	408	394	468	367
MST 214 A	200		483	283		333
MST 214 B	383	483	467	450	400	350
MST 215						
MST 216			367	133		

MST 217			300			
MST 218				217		
MST 219		100	150	150		
MST 224				483	317	433
MST 289	350	550	633			
<b>Productivity</b>	325	304	293	244	341	337

Course Fill Rates at Section Census



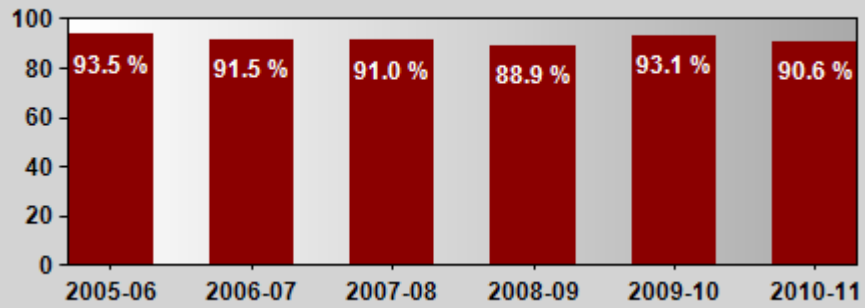
Course Fill Rates for Saddleback College



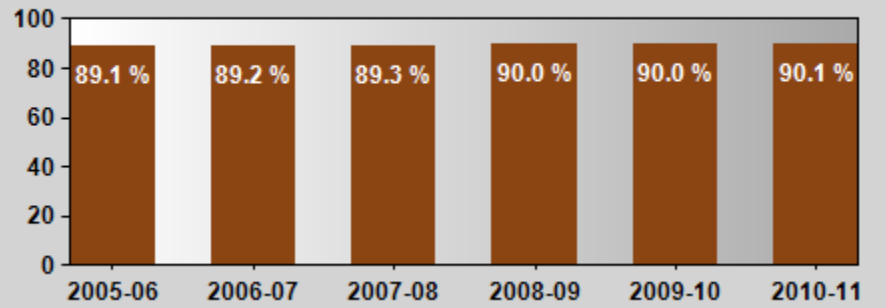
Course ID	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
CWE 168	5.6		3.3			
CWE 169		17.8				
CWE 180				4.4	.7	4.4
MST 10	36.7	36.7	43.3	26.7	6.7	6.7
MST 100	63.3	70	46.7	61.7	8.3	
MST 101	50	55.6	27.8	44.4	16.7	
MST 201		91.7	70.8	62.5	91.7	70.8
MST 202	45.7		28.6	34.3		37.1
MST 203		36.4	24.2	21.2	39.4	
MST 204		50	16.7	30	56.7	
MST 205		36.7	36.7	26.7	36.7	
MST 206		40	30	16.7	33.3	
MST 207	13.3	23.3	10	16.7	6.7	
MST 210	28.6		40	51.4	57.1	45.7
MST 211		95		95	120	
MST 212	98.3	101.7	81.7	78.9	76.7	73.3
MST 214 A	48		116	68		80
MST 214 B	44.4	51.1	44.4	44.4	40	40
MST 215	6.7	13.3	17.8	15.6	13.3	6.7
MST 216			62.9	22.9		

MST 217			21.2			
MST 218				52		
MST 219		24	36	36		
MST 224				82.9	54.3	74.3
MST 289	60	94.3	108.6			
<b>Course Fill Rates</b>	33.3	45.8	40.9	41.6	34.6	44.7

Retention Rates



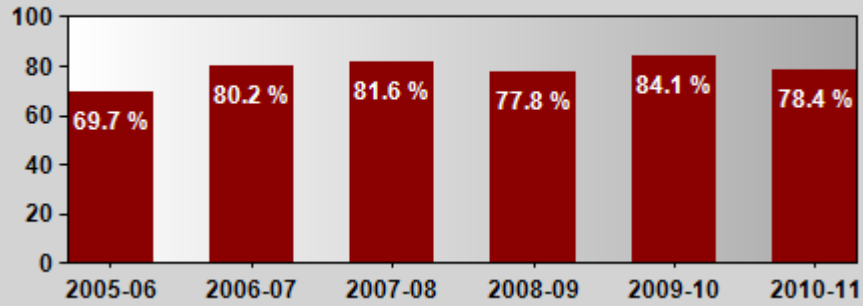
Retention Rates for Saddleback College



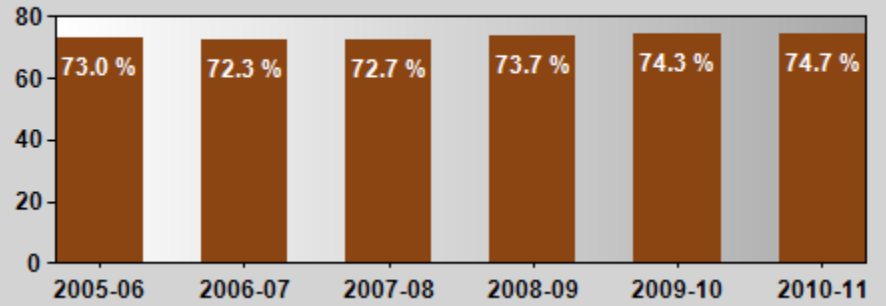
Course ID	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
CWE 168	80	100	100			
CWE 169		100				
CWE 180				100	100	100
MST 10	90.9	83.3	92.3	100	50	100
MST 100	100	75.7	84.6	89.2	100	
MST 101	100	88.9	100	100	83.3	
MST 201		95.5	100	100	90	92.9
MST 202	75		90	75		70
MST 203		91.7	100	66.7	83.3	
MST 204		100	80	75	82.4	
MST 205		90.9	100	87.5	80	
MST 206		91.7	77.8	80	100	
MST 207	100	87.5	100	100	100	
MST 210	90		92.9	76.5	85	86.7
MST 211		88.9		100	95.8	
MST 212	100	96.7	92.2	90	98.4	87.1
MST 214 A	72.7		85.7	83.3		95
MST 214 B	95	95.7	80	100	100	94.1
MST 215	100	100	100	100	100	100
MST 216			90.9	75		

MST 217			100			
MST 218				69.2		
MST 219		66.7	50	62.5		
MST 224				100	100	100
MST 289	96	97	100			
<b>Retention Rate</b>	93.5	91.5	91.0	88.9	93.1	90.6

**Success Rates**

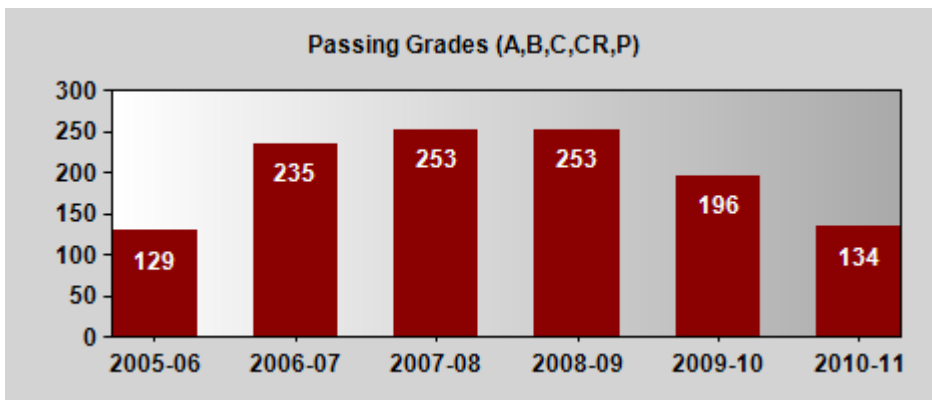


**Success Rates for Saddleback College**

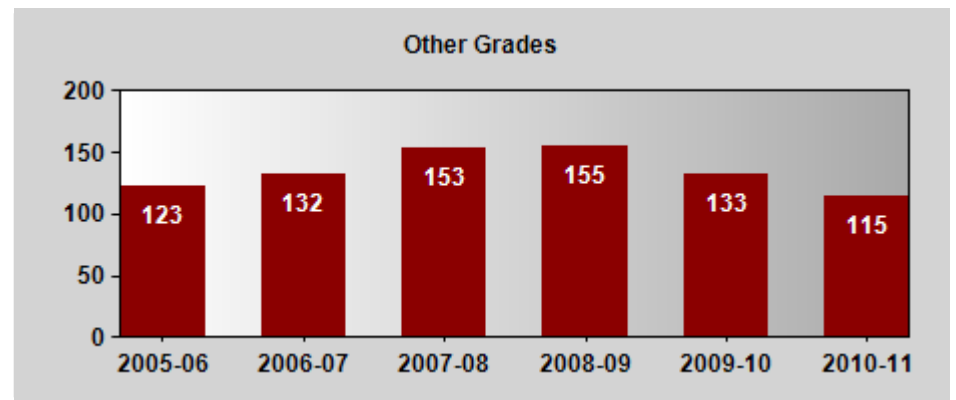


Course ID	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
CWE 168	60.0	100.0	100.0	0.0	0.0	0.0
CWE 169	0.0	100.0	0.0	0.0	0.0	0.0
CWE 180	0.0	0.0	0.0	100.0	100.0	100.0
MST 10	36.4	75.0	69.2	42.9	50.0	100.0
MST 100	33.3	54.1	65.4	67.6	100.0	0.0
MST 101	100.0	77.8	88.9	87.5	83.3	0.0
MST 201	0.0	90.9	100.0	100.0	90.0	85.7
MST 202	56.3	0.0	80.0	50.0	0.0	40.0
MST 203	0.0	58.3	50.0	50.0	75.0	0.0
MST 204	0.0	73.3	40.0	75.0	70.6	0.0
MST 205	0.0	90.9	80.0	75.0	50.0	0.0
MST 206	0.0	75.0	66.7	60.0	90.0	0.0
MST 207	75.0	87.5	66.7	100.0	100.0	0.0
MST 210	80.0	0.0	92.9	76.5	85.0	80.0
MST 211	0.0	88.9	0.0	100.0	95.8	0.0
MST 212	80.7	83.6	86.3	77.1	80.3	80.6
MST 214 A	27.3	0.0	71.4	66.7	0.0	75.0
MST 214 B	70.0	78.3	75.0	85.0	83.3	52.9
MST 215	66.7	100.0	100.0	100.0	100.0	100.0
MST 216	0.0	0.0	90.9	75.0	0.0	0.0
MST 217	0.0	0.0	100.0	0.0	0.0	0.0
MST 218	0.0	0.0	0.0	61.5	0.0	0.0
MST 219	0.0	66.7	37.5	50.0	0.0	0.0
MST 224	0.0	0.0	0.0	100.0	100.0	96.2

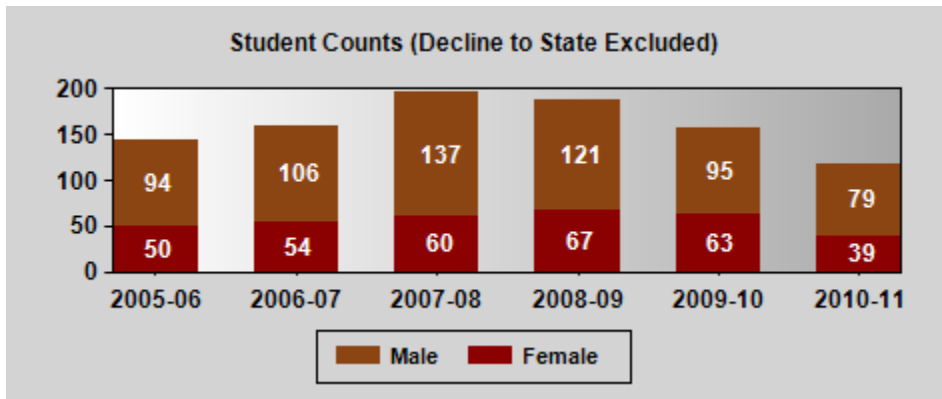
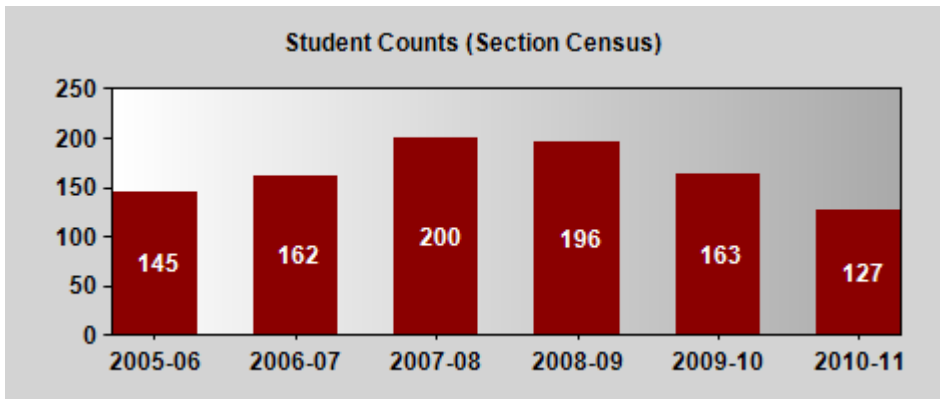
MST 289	96.0	97.0	100.0	0.0	0.0	0.0
<b>Success Rate</b>	69.7	80.2	81.6	77.8	84.1	78.4



Passing Grades	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
A	65	118	124	125	104	73
B	27	63	66	73	48	32
C	14	26	26	26	23	14
CR	23	28	37	29		
P					21	15
<b>Total</b>	<b>129</b>	<b>235</b>	<b>253</b>	<b>253</b>	<b>196</b>	<b>134</b>



Other Grades	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
D	5	5	4	5	4	4
DR	67	74	96	83	96	78
F	22	24	20	26	16	7
NC	17	4	5	5		
NP					1	10
W	12	25	28	36	16	16
<b>Total</b>	<b>123</b>	<b>132</b>	<b>153</b>	<b>155</b>	<b>133</b>	<b>115</b>



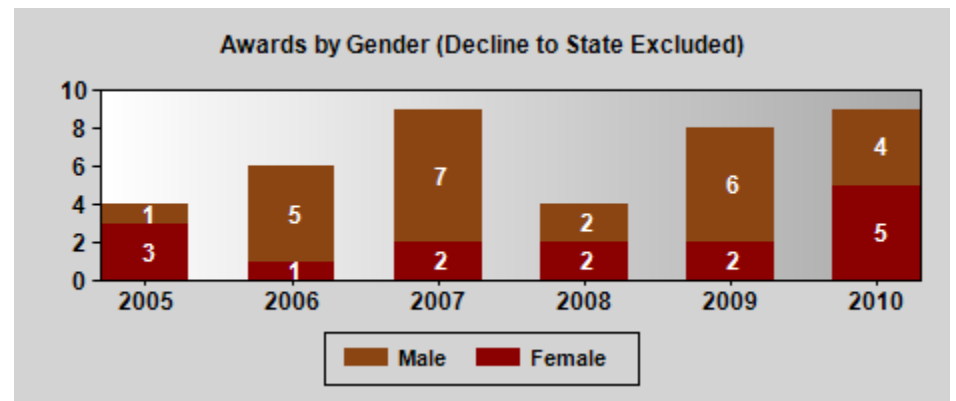
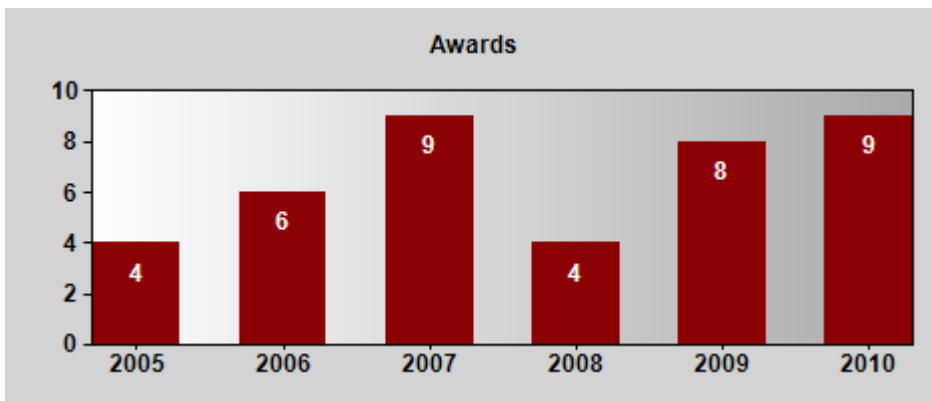
Age Group	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
1. Below 18		1	3	2	3	
2. 18-21	36	35	51	44	37	19
3. 22-29	25	30	43	40	46	30
4. 30-39	27	35	33	34	19	19
5. 40-49	32	31	35	36	24	19
6. 50-59	17	25	22	31	21	25
7. Over 59	8	5	13	9	13	15
<b>Total Students</b>	145	162	200	196	163	127

### Student Counts by Ethnicity

Ethnicity	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
White, Non-Hispanic	72	91	112	120	106	79
Decline to state	47	49	51	42	22	15
Mexican, Chicano, Mexican-American	7	6	11	14	8	8
Mixed Ethnicity	1	3	4	4	14	13
Chinese	2	4	3	2	1	3
American Indian, Alaskan Native	2	1	3	3	3	2
Filipino	3	3	4	1	2	1
Other Non-White	1	2	1	1	2	2
Other Hispanic	2		1	2	1	1
South American	3	2	1		1	
Japanese	3		1	1	1	
Vietnamese	2	1	2			
Black, African-American			3	2		
Other Asian			1	1		1
Middle Eastern			1			1
Central American				1	1	
Korean				2		
Pacific Islander; Samoan					1	1
Other Pacific Islander			1			
<b>Total Students</b>	145	162	200	196	163	127

## Student Counts by Educational Goal

Educational Goal	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11
Obtain a Bachelor's degree after Assoc.	17	27	41	34	28	19
Personal Development	35	32	31	22	19	23
Undecided on goal	20	22	26	31	25	20
Improve basic skills	8	19	20	28	23	17
Prepare for a new career	25	16	22	18	14	9
Obtain a Bachelor's degree w/o Assoc.	11	9	17	13	13	10
Discover/develop career interests	11	10	8	14	6	7
Advance in current job/career	8	6	9	11	6	4
Obtain a voc certificate w/o transfer	3	8	8	9	8	7
Obtain a voc certificate and transfer	4	6	6	4	7	2
Obtain two-year voc. degree w/o transfer	3	5	6	6	3	1
Maintain license		1	3	3	2	2
4 yr col std taking crs to meet 4 yr requirements				1	5	5
Obtain a non-voc degree w/o transfer		1	2	2	4	1
Complete credits for HS diploma or GED			1			
<b>Total Students</b>	145	162	200	196	163	127



Awards by Age Group	2005	2006	2007	2008	2009	2010
2.18-21	1		1	1		
3.22-29	2	4	4	2	2	2
4.30-39		2			2	
5.40-49	1		1	1	2	2
6.50-59			3		1	3
7.Over 59					1	2
<b>Total Awards</b>	4	6	9	4	8	9

Awards by Major	2005	2006	2007	2008	2009	2010
Aquarium and Aquaculture Science				2	7	1
Aquarium and Aquaculture Technology						2
MARINE SCIENCE TECHNICIAN	1	4	1	2		2
MARINE SCIENCE TECHNOLOGY: SEAMANSHIP			1		1	4
OCEAN TECHNOLOGY: AQUARIUM AND AQUACULTURE TECHNOL	3	2	7			
<b>Total Awards</b>	4	6	9	4	8	9

Award Type	2005	2006	2007	2008	2009	2010
Associate in Arts				1		
Associate in Science		2	2			2

Certificate of Achievement	4	4	7	3	8	7
<b>Total Awards</b>	4	6	9	4	8	9

**Staffing Counts (Instructors Assigned to D-G Tickets Only Have Been Excluded)**

<b>Employee Type</b>		<b>2005-06</b>	<b>2006-07</b>	<b>2007-08</b>	<b>2008-09</b>	<b>2009-10</b>	<b>2010-11</b>
PART-TIME	Anderson, Julie	1	1	1	1	1	1
	Curtis, Paul	1	1	1	1	1	1
	Dahlin, Richard						1
	Grant, Ron	1	1	1	1	1	1
	Howe, Mark	1	1	1	1	1	1
	Hughston, Marc	1	1	1	1	1	
	Keith, John	1	1				
	Paquette, Michael		1	1	1	1	
	Richards, John		1	1			
	Sheriff, David				1		
	Tackett, Ed			1			
	Trautwein, Sandra		1	1	1		
	Wenzel, Diane		1	1	1	1	1
	<b>Total</b>	6	10	10	9	7	6
<b>Total</b>	6	10	10	9	7	6	