



Instructional Program Review Horticulture and Landscape Design Saddleback College

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Program: Horticulture and Landscape Design

Division: Advanced Technology and Applied Science

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1.0 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 Horticulture and Landscape Design 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 Horticulture and Landscape Design Department. The main document provides recommendations for the: curriculum, instruction, student success, staffing and resources, staff development, community outreach, articulation, and accreditation.

1.1 College Mission and Goals

Mission Statement of Saddleback College

To provide access to learning opportunities that promote student success; to foster intellectual growth, individual expression, and character development; and support a dynamic environment of innovation and collegiality.

Goals of Saddleback College

The primary goal of Saddleback College is to provide a comprehensive post secondary 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 will:

- provide educational programs leading to the Associate in Arts and Associates in Science degrees
- provide a comprehensive, broad range of high quality courses and programs to enable students to pursue their educational objectives and career goals
- provide a meaningful general education program including baccalaureate-level transfer and occupational curricula

- provide necessary developmental, remedial, and basic skills instruction so that students may be successful in their chosen course of study
- provide access for the community to the educational, cultural, and recreational resources of the college
- provide counseling and other support services, which are responsive to the needs of students
- provide opportunities in continuing education and community services, including courses for skill upgrading, retraining for professionals, and life long learning for older adults

1.2 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.

1.3 Goals of the Horticulture and Landscape Design Department

The goals of the Horticulture and Landscape Design Department are:

- to prepare students with the knowledge, skills, and hands-on experience needed for both entry-level and advanced employment in the ornamental horticulture and landscape industries
- to provide skill-upgrading for professionals already at work in the ornamental horticulture field
- to prepare students of Horticulture and Landscape Design for transfer to 4-year institutions through articulated course offerings and AA and AS degree programs
- to provide a general education class in Introduction to Horticultural Sciences
- to provide specialized courses and mini-courses to the professional and lay public in areas of special concern
- to develop sources of alternative funding

1.4 Unique Characteristics

While each of the Community Colleges in Southern California that offers a Horticulture program has a unique emphasis and curriculum, all are involved in the education of students who are taking classes for skill-upgrading, certificates and degrees, transfer and personal knowledge. Over the past 30 years, the Horticulture and Landscape Design department at Saddleback College has progressively focused on the areas of (1) general Horticulture and (2) Landscape Design. While many students enrolled in our General Education classes plan on transferring to a 4-year college, an equal number of vocational students have indicated that they are taking classes to upgrade their job skills or to prepare for a new career (Educational Goals, Appendix 4.1, p. 30).

The Horticulture curriculum utilizes a new, 10,000 sq. ft, state-of-the-art greenhouse located on a one-acre plot. Also present at the facility are an additional 10,000 sq. ft. of shade area, garden plots, and an outdoor lecture/demonstration area with seating for 75. Students and instructors use the facility and equipment for hands-on learning experiences.

Average enrollment has been approximately 30 students per class over the past 5 years (Table 1, p. 7). Certificated instructors rather than laboratory assistants teach all lectures and labs. While our evening vocational classes are typically full, the class size allows instructors to become familiar with individual student goals and needs which can facilitate the movement of students into the job market.

Student profiles show that over the past 5 years enrollment has been 37% male and 63% female (Student Distribution by gender, Appendix 4.2, p. 31). Age distribution data shows that the majority of our students fall into two ranges: 18-21 and 36-50. From undocumented observation, we feel that the younger group is primarily enrolled in our GE classes while the older group attends mostly vocational programs associated with our two certificate programs.

1.5 Program Statistics

Horticulture and Landscape Design Department Statistics are presented in Table I below for the 2000/01 through 2003/04 academic years. (Detailed data is supplied in Appendix 3, p. 26). The data is divided into access and productivity, student success and student characteristics and combines information for all of our classes. The following tables provide a breakdown for the Horticulture and Landscape Design certificate curricula.

Table 1 – Summary of Horticulture and Landscape Design Department Statistics***

		Academic Year				
Benchmarks		2000/01	2001/02	2002/03	2003/04	2004/05
Access and Productivity (Fall semester counts)						
Number of Course Sections Offered		16	17	15	16	16
C 1 Duplicated Headcount		476	490	446	452	458
Average WSCH per FTE Faculty		525	470	502	518	498
Fill Rate (C1 Enrollment/Course Cap)	84% (Program)	84%	94%	80%	78%	79%
Average Enrollment per Section	30.1% (Program)	29.8	28.8	29.6	30.8	31.6
Total Reported (normalized) WSCH		2252	2061	1999	1938	2073
Success & Retention (full year)						
Average Course Term Retention Rate	93% (Program)	93%	93%	93%	94%	n/a**
Average Successful Course Completion Rate	75% (Program)	77%	76%	72%	71%	n/a**
Number of Degrees & Certificates Awarded*		16	18	13	19	n/a**
Number of Occupational Skills Awards		n/a	n/a	n/a	10	
Student Characteristics (full year)						
Education Goal	AA & Transfer	27%	26%	28%	23%	n/a**
	Voc Degree/Certificate	13%	15%	13%	16%	n/a**
	Upgrade Skills	6%	5%	4%	6%	n/a**
	Prepare for New Career/Discover Career Interests	19%	20%	21%	20%	n/a**
	Other	35%	34%	34%	35%	n/a**
Out-of-District Students	In District	82%	80%	77%	76%	n/a**
	Irvine/Tustin	4%	4%	6%	6%	n/a**
	Out-of-District	14%	16%	18%	19%	n/a**

Several of the courses required for the certificate in Horticulture are also required for the certificate in Landscape Design. The data presented in Table 1 show the combined profile of the full Horticulture and Landscape Design department course offerings.

Table 2 – Summary of Statistics Comparing the Programs in Horticulture and Landscape Design

		Academic Year			
		2000/01	2001/02	2002/03	2003/04
Access and Productivity (End of Academic Year)					
Average WSCH per FTE Faculty	All courses other than Landscape Design	525	470	502	518
Average WSCH per FTE Faculty	Landscape Design Courses	416	450	523	556
Average Enrollment per Section	All courses other than Landscape Design	30.9	36.9	29.0	30.5
Average Enrollment per Section	Landscape Design Courses	26.3	27.7	32.0	35.7
Degrees and Certificates Awarded (End of Academic Year)					
Number of Degrees & Certificates Awarded*	Horticulture	8	9	8	8
Number of Degrees & Certificates Awarded*	Landscape Design	8	9	5	11
Total Certificates Awarded		16	18	13	19
Occupational Skills Awards	All Areas	n/a	n/a	n/a	10

*Indicates degrees and certificates for both General Horticulture and Landscape Design Certificates. In 1999/00 there were 7 certificates awarded in General Horticulture but data for the Landscape Design Certificate is not available for this year from the MIS Data Warehouse. In order to make comparisons between academic years and also between our two certificate programs, it was necessary to begin the review with the 2000/2001 academic year.

**These statistics for full academic years will not be available until after this study is completed.

***Source: SOCCCD MIS Data Warehouse October 4, 2004

Access and Productivity – Average class size has remained nearly constant over the review period (about 30 students per section). Total census enrollment varies slightly and, as would be expected, increases as more sections are offered. While most of the department's numbers have been relatively stable, there has been an increase in WSCH/FTE during the past three years, especially in classes associated with the Landscape Design Certificate. The data reflect a stable program in terms of access and productivity. Our vocational classes (offered primarily in the evening) have become impacted and are fully enrolled.

The certificate programs in Horticulture and Landscape Design compliment each other and share many course requirements. Therefore, the award statistics reflect achievement of students in two related areas rather than two separate areas where each would require unique financial support and resources. The Occupational Skills Awards (OSAs) were introduced by the department in the 2003-2004 academic year. Along with one other division (Business Science) ours were the first programs to recognize student achievement as coursework advanced towards a certificate. Our intention was, and is, to provide recognition of completed coursework and to encourage students to strengthen their vocational education by completing an entire certificate. While any student who completes a certificate would automatically qualify for an OSA, the data shows that only half of the students earning a certificate in 2003-2004 applied for the OSA. Students need to be better informed so that they acquire all of the achievement awards to which they are entitled and so that our data accurately reflects the numbers of students who qualify for these awards.

Student Success – The Average Student Retention rate was 93% during the review period. Student Success was measured at an average of 75%. During the same period the Average Student Retention rate at Saddleback College was 82% and the Success rate was 71%. Our numbers are indicative of courses that students will complete and in which most are successful.

Student Characteristics – One-fourth of our students are transfer students. Forty-percent indicate that they are taking classes to receive a certificate or AA degree, to upgrade skills, to explore employment opportunities, or to prepare for a new career. This diversity is consistent with our stated goal to provide General Education within a discipline that is basically vocational in nature. The department is successfully serving populations of student with distinctly different educational objectives.

1.6 Staffing

The Horticulture and Landscape Design Department has two full-time faculty and seven Associate Faculty at this time. One full-time faculty member is eligible for retirement and the second will also be eligible within a year.

The percentages of classroom hours assigned to full-time and associate faculty are 70% and 30%, respectively (Fall 2004, LIS report). Each full-time instructor currently accepts 9-10 hours overload and if overload were not carried by these instructors, the department would have a 55% - 45% balance. In order for the program to maintain its current level of offerings and to approach a 75%-25% split, it will be necessary to keep at least two full-time instructors in the department and three would be required if even one of the full-time instructors chose to work without overload .

The two full-time faculty have backgrounds primarily in Ornamental Horticulture. If a new or replacement instructor were added to the department, it would be desirable that that person have a strong background in landscape design and/or landscape construction.

All instructors have appropriate teaching credentials on file with Human Resources.

The Horticulture and Landscape Design Department is also supported by two classified staff and a student project clerk. The full-time ATAS Laboratory Technician assigned to Horticulture and Landscape Design maintains the Horticulture Unit, orders supplies, propagates plants and assists with laboratory activities and fundraising events. The Greenhouse Assistant works 19 hours per week and maintains stock plants and assists the ATAS Laboratory Technician in all activities. Both staff members assist faculty individually with their instructional requests. The student Project Clerk is utilized on an as-needed basis to maintain plants and help with other activities.

It is not possible to have technical help present during all laboratories (Monday-Saturday including evenings) with this amount of classified staffing. Full coverage would be possible if the position of Greenhouse Assistant were made full-time.

1.7 Facilities

The Horticulture and Landscape Design Department has one classroom for assignment (TAS* 228) and must rely on the availability of other rooms to house its courses. These additional classrooms are often located in different buildings which separates our course offerings physically and often makes laboratory set-up difficult. When available, the department utilizes TAS 225 (assigned to Environmental Studies), TAS 218 (assigned to Architecture and Drafting), SM** 202 (assigned to Biology), and BGS*** 111 (assigned to Family and Consumer Sciences). BGS 115, a general classroom, is also used for large lecture classes. Even when TAS 228 is available, it is often necessary to utilize other classrooms because of limited seating capacity or the need for specialized equipment and/or furnishings (such as drafting tables, multiple computer terminals, and expensive equipment). Funding for instructional supplies and equipment for TAS 228 comes from the department's Instructional Supply Budget, Equipment Requests (competitive and non-competitive), and Foundation funds raised through plant sales. (*TAS, Technology and Applied Science Building, **SM, Science, Math, and Engineering Building, ***BGS, Business and General Studies Building)

The department operates a newly completed Horticulture Unit located across from the TAS building and near the classroom. The Unit (dedicated in September, 2003) consists of a 10,000 sq. ft. state-of-the-art greenhouse, 10,000 sq. ft. of shade structure, 50 raised beds for gardening (approximately 100 sq. ft. each), soil bins, storage sheds, 12 demonstration plots, a demonstration area with seating for 75, and a combination office/storage unit with telephone and internet access.

Technology utilized by the department includes computers for Landscape CADD classes, general classroom computers, computer projection equipment, computerized video microscopes and video dissection scopes for displaying and photographing plant and insect specimens, an automated weather station, and automated greenhouse control systems.

Acquisition of new Equipment to enhance the program has been accomplished in various ways including use of (1) Non-Competitive Equipment Funds, (2) Competitive Equipment Funds, (3) A grant from the Saddleback College Foundation, (4) Horticulture and Landscape Design Foundation Funds, and (5) purchases directly from the department budget.

1.8 Budget

The operational budget of the Horticulture and Landscape Design department is provided by the college and supplemented with funds from Horticulture and Landscape Design Foundation plant sales, grants, and student fees. Except for a recent increase of \$1500 in the category of Equipment Repair, the budget allocation (approx. \$6500) has remained constant over the past 10 years despite rising costs due to inflation. While our budget allows us to present classes at an acceptable level it does not permit us to address the College's goal for increased enrollments as we would need to fund additional courses in order to attract and educate more students. Our outlook for future growth and/or re-organization is closely tied to our budget and its constraints. Additional funds for the budget have recently come from:

- the Horticulture and Landscape Design Foundation
- college competitive and non-instructional Equipment Requests
- a grant from Staff Development for a conference request
- a grant from the Saddleback College Foundation

2.0 Program Review

2.1 Curriculum

The courses offered in the Horticulture and Landscape Design Department are listed in Table 3. The dates of the last department/curriculum committee review and applicability toward Certificate, Occupational Skill Award, AA/AS degree, General Ed, and transferability to CSU and UC are also noted.

Table 3 – Horticulture and Landscape Design Courses Offered at Saddleback College

Course	Course Outline Update/Review	Degree Support and Transferability					
		Certificate	AA/AS	OSA	General Ed	CSU	UC
Hort 7 Intro to Landscape Design	Fall 2004	YES	YES	YES		YES	YES
Hort 10 Plant Materials- Herbaceous Plants	Fall 2004	YES	YES	YES		YES	YES
Hort 11 Plant Materials- Trees & Shrubs	Fall 2004	YES	YES	YES		YES	YES
Hort 20 Intro to Horticultural Sciences	Fall 2004	YES	YES	YES	YES	YES	YES
Hort 29 Ornamental Native Plants	Fall 2004	YES	YES	YES		YES	YES
Hort 106 Landscape CADD	Fall 2003	YES	YES			YES	
Hort 109 Introduction to Planting Design	Fall 2004	YES	YES	YES		YES	
Hort 112 Plant Propagation	Fall 2003	YES	YES	YES		YES	
Hort 113 Soils & Fertilizers	Fall 2002	YES	YES	YES		YES	
Hort 115 History of Landscape Architecture	Fall 2003	YES	YES		YES	YES	

Course	Course Outline Update/Review	Degree Support and Transferability					
		Certificate	AA/AS	OSA	General Ed	CSU	UC
Hort 116 Irrigation Practices	Fall 2004	YES	YES			YES	
Hort 120 Integrated Pest Management	Fall 2004	YES	YES			YES	
Hort 131 Weed Identification	Fall 2004		YES			YES	
Hort 160 Native Ornamental Plants/Morro Bay	Fall 2004	YES	YES			YES	
Hort 161 Horticulture Field Studies – Grand Canyon	Fall 2004	YES	YES			YES	
Hort 162 Horticulture Field Studies – Yosemite	Fall 2004	YES	YES			YES	
Hort 163 Horticulture Field Studies – Sequoia National Park	Fall 2004	YES	YES			YES	
Hort 164 Horticulture Field Studies – Zion National Park	Fall 2004	YES	YES			YES	
Hort 165 Horticulture Field Studies – National Parks of the Southwest	Fall 2004	YES	YES			YES	
Hort 130 Hardscape and Construction Materials	Fall 2004	YES	YES	YES		YES	
Hort 189 Special Topics	Fall 2004		YES			YES	
Hort 208 Floral Arrangements	Fall 2004		YES				

Course	Course Outline Update/Review	Degree Support and Transferability					
		Certificate	AA/AS	OSA	General Ed	CSU	UC
Hort 209 Advanced Floral Arrangements	Fall 2004		YES				
CWE 168/169 Cooperative Work Experience		YES					

All courses in the Horticulture and Landscape Design department have been reviewed by faculty and presented to the college Curriculum Committee within the last 2 years. None of the courses have pre-requisites or co-requisites. Cooperative Work Experience (CWE) will become a part of both certificates offered by the department beginning with the 2005-2006 catalog. All classes with numbers from 1-99 have been articulated with UC and CSU while classes numbered 100-199 have been articulated with CSU only. Floral Arrangements (Hort 208) and Advanced Floral Arrangements (Hort 209) are the only courses not articulated with UC or CSU, although they are allied with the Regional Occupational Programs (ROP).

Hort 131 (Weed Identification), Hort 208, and Hort 209 are the only stand-alone classes at this time. They represent a total of 5 units. Hort 189 short courses are not permitted to be incorporated into certificates and are not considered stand-alone classes when calculating units of classes not linked to a certificate.

Certificate Programs

Two certificate programs have been developed with the assistance of the Horticulture and Landscape Design Advisory Committee. These course sequences are intended to provide students with skills necessary to find employment in the horticulture and landscape design industry at entry level or higher. These certificates are reviewed yearly with the Horticulture Advisory Committee. The most recent updates to the certificates were made in January, 2005 and will take effect in Fall 2005. The certificates are outlined in the Table 4 (p. 14).

Occupational Skill Awards (OSAs)

Three OSAs were developed in the areas of (1) basic horticulture, (2) basic landscape design, and (3) plant identification. These awards, first given in the 2003-2004 academic year, are outlined in Table 5 (p. 14). Students who have not completed a full certificate may qualify for one or more of these awards based on successful completion of selected coursework. All students who complete a certificate also qualify for one or more of these OSAs.

Table 4 - Certificates Offered by the Horticulture and Landscape Design Department

Horticulture Certificate Program		Landscape Design Certificate Program	
Hort 10	3.0 units	Hort 7	3.0 units
Hort 11	3.0 units	Hort 10	3.0 units
Hort 112	3.0 units	Hort 11	3.0 units
Hort 113	3.0 units	Hort 106	3.0 units
Hort 116	3.0 units	Hort 109	3.0 units
		Hort 116	3.0 units
and one course from each group below:		Hort 130	3.0 units
		and one of the following:	
Hort 20	4.0 units		
Hort 115	3.0 units	CWE 168/169	1.0 units
		Hort 29	3.0 units
Group II		Hort 160	1.0 units
Hort 7	3.0 units	Hort 161	1.5 units
Hort 120	3.0 units	Hort 162	1.5 units
		Hort 163	1.5 units
Group III		Hort 164	1.5 units
CWE 168/169	1.0 units	Hort 165	2.5 units
Hort 29	3.0 units		
Hort 160	1.0 units		
Hort 161	1.5 units		
Hort 162	1.5 units		
Hort 163	1.5 units		
Hort 164	1.5 units		
Hort 165	2.5 units		
22.0 – 25.0 Units		22.0 – 24.0 Units	

*See Table 3 for course titles

Table 5 - Occupational Skill Awards offered by the Horticulture and Landscape Design Department

Basic Horticulture		Basic Landscape Design		Plant Identification	
Hort 20	4.0 units	Hort 7	3.0 units	Hort 10	3.0 units
Hort 112	3.0 units	Hort 109	3.0 units	Hort 11	3.0 units
Hort 113	3.0 units	Hort 130	3.0 units	Hort 29	3.0 units
10.0 units		9.0 units		9.0 units	

*See Table 3 for course titles

2.2 Instruction and Assessment

Instructional goals and objectives are documented in the course curriculum. The faculty uses a variety of methods to assess students and determine if learning outcomes and objectives are met. The methods include: quizzes, exams, homework, and reviews of notebooks, journals, and lab projects.

Horticulture 20, Introduction to Horticultural Sciences, is the only course in the department that has multiple sections. Each section employs the same textbook. 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.

Technology is used throughout the Horticulture and Landscape Design Programs.

- computers are used in all classroom for lecture (PowerPoint) and demonstration
- landscape design students use AutoCAD and prepare computer generated designs in Hort 106
- websites are maintained by the department and individual faculty
- distance Ed courses (Hort 11, Hort 112 and Hort 115) use computers and the Internet extensively
- a computerized weather station is being set up at the Horticulture Unit
- a digital, computerized dissection scope is used in Hort 20 and Hort 120
- the automated, state-of-the-art environmental control system of the greenhouse is demonstrated in all classes with laboratories at the Horticulture Unit
- horticulture field studies utilize a portable notebook and projection system

The Internet

The Internet is used heavily in Horticulture and Landscape Design. The department maintains a website with current information on courses, enrollment procedures, scholarships, certificates, Occupational Skill Awards, as well as general announcements and links to instructor homepages. Full-time faculty maintain websites with current information including syllabi, assignments, lecture outlines, and other course materials.

Distance Education

Distance Education has been utilized for three of our courses to date: Hort 115, History of Landscape Architecture; Hort 11, Plant Materials – Trees and Shrubs; and Hort 112, Plant Propagation. This is a hybrid format and students still meet in the classroom and/or laboratory while using the internet in part for lecture and testing. The success of this endeavor cannot be determined at this point as only one course offered in the hybrid DE mode has been completed. We expect to carefully evaluate the effectiveness of this teaching method as we complete more classes.

Student Learning Outcomes (SLO's)

Student Learning Outcomes are developed and collected for every course. These are reviewed by the course instructor and the Department Chair. All instructors participate in developing and implementing SLO's. At this time (April, 2005) college-wide standards have not been adopted for SLO's, although many discussions have taken place in efforts to define and outline the process. Since the Horticulture and Landscape Design Department has been collecting SLO's for the past three semesters in the absence of adopted templates, each instructor has had to make a meaningful attempt at developing a format that would work for his/her class. We expect to adopt standard templates when they are agreed upon as requested by the most recent Accreditation Team.

There is no formal, standardized assessment test for Horticulture and Landscape Design programs. National Occupational Competency Testing Institute (NOTCI) tests measure achievement in Horticulture programs but unfortunately any single NOTCI test covers a diverse range of subjects some of which are not part of our curriculum. An examination of the curricula offered by Southern California community college horticulture departments shows that each school has different course offerings. No version of the current NOTCI tests would be appropriate for testing and comparing student achievement in horticulture or landscape design. The Horticulture and Landscape Design Advisory Committee at Saddleback College suggested at its Spring 2004 meeting that we consider using the test administered by the California Association of Nurseries and Plant Growers as a measure of achievement. The department is investigating this option.

2.3 Staff Development

All full-time faculty in Horticulture and Landscape Design participate in staff development through a number of avenues that permit them to remain current in their discipline and to upgrade their teaching techniques. Thirty-eight hours of flex activity related to program or instructional improvement are required of each faculty member as a minimum. This threshold is regularly exceeded through conference attendance or travel to areas of horticultural interest. Staff development funds have been utilized and all faculty are incorporating modern techniques in their classroom presentations.

2.4 Horticulture and Landscape Design Advisory Committee

The Horticulture and Landscape Design Advisory Committee consists of professionals within the landscape architecture, landscape construction, landscape maintenance, wholesale nursery, retail nursery and floriculture industries. It provides valuable and important insight to the department relating to issues, needs and trends within the industry. The committee meets annually with department staff to discuss topics that are pertinent to the industry and how those topics impact the education and training of current and future horticulture and landscape design professionals for successful careers.

The Advisory Committee has been a component of the department since its establishment in 1975. The committee is a principal link between the college and the industry, providing a conduit of communication and information. It is the desire of the department to maintain consistent representation of all aspects of the industry on the committee. Over the years, membership on the committee has ebbed and flowed. When the committee is fully represented with industry professionals, it operates very successfully. The meetings are a noteworthy forum for strategic planning, exchange of ideas, and dealing with current/problems. Minutes are recorded for all meetings of the committee.

2.5 Scheduling

Classes are scheduled every day of the week and Saturdays. Evening courses are in session Monday through Friday. Horticulture 20, a GE course, is offered during the day as well as the evening and on weekends. Courses designed primarily for certificate or degree-bound students or students seeking skill-upgrading are offered in the evening or on Saturday. Horticulture Field Studies are scheduled over weekends and during Spring break. None of these courses is scheduled in a way that would cause interference with another required course in a certificate sequence. It is significant to note that during the past two semesters (Fall 2004, Spring 2005) all evening courses considered to be "majors' courses" filled to capacity.

Working students are accommodated by our schedule of predominantly evening classes. Students seeking a GE class that satisfies the need for a natural science with a lab are able to select a section of Hort 20 that is convenient to them.

A statistic often reviewed is the percent fill rate. Typically, classes that have limited seating are assigned a course capacity based on the maximum number of students that can be accommodated. In large-lecture courses and courses where seating does not present a problem (such as Hort 29), a higher course capacity is usually assigned. Courses such as Hort 20 have fluctuating enrollments from semester to semester and year to year. Consequently, in order to enroll the maximum number of students possible, a course capacity higher than the historical average is set. Percent fill rate may sometimes suffer because of this strategy but the department feels that this is often more acceptable and productive than having students not enroll because of CLOSED classes.

Scheduling of our majors (vocational) courses primarily in the evening has proved successful. Course capacity for evening vocational classes in Fall 2004 was 107% (source: Dept. Chair's records).

Table 6 – Horticulture and Landscape Design Scheduling Model

Course*	Schedule	Comments
Hort 20	- Morning lecture, Afternoon lab - Evening lecture and lab - Saturday	- Weekday and evening classes are large-lecture; two meetings per week - Saturday has one long meeting - Scheduled to be available to most transfer students seeking GE
Hort 29	- Saturday	- Field trips at each meeting - Sufficient enrollment only expected on a Saturday
Hort 115	- Variable - Only offered in Summer - Offered one time to date	- Distance Ed class (hybrid) - Students have asked for summer class - Good enrollment first time offered
Hort 120	- Offered every other Spring - Currently offered on Saturday	- Scheduled to attract working students needing Continuing Ed hours - Scheduled not to overlap other Hort classes
Hort 160-165	- One section offered per semester	- Hort Field Studies
Hort 189	- Friday evenings	- Special interest topics - Enrollment dependent upon actual interest to students
Hort 208/209	- Day and evening sections	- Floral Arranging class scheduled to accommodate both day and evening students - Not expected to compete for enrollment with other Horticulture classes
Hort 7 Hort 10 Hort 11 Hort 106 Hort 109 Hort 112 Hort 113 Hort 116 Hort 130	- Weekday evening classes	- Classes are part of a Certificate - Enrollment expected primarily from majors and skill-upgraders - Evening schedule to accommodate working students

*See Table 3 for course titles

Student Retention and Success

Since Fall 2000 the Average Course Term Retention Rate has been 93% and the Average Successful Course Completion Rate has been 75% (Summary of Horticulture and Landscape Design Program Statistics, Table 1). While these numbers are higher than those achieved by the college as a whole, we strive to improve them. The following actions are a part of our attempts to improve success and retention:

- instructors develop and implement a Student Learning Outcome (SLO) for each class
- SLO's are reviewed by the faculty member and received by the Department Chair for review and filing
- in-class surveys and questionnaires are distributed by many instructors
- instructors individually counsel students, as needed
- success and retention rates are forwarded to each instructor for individual review
- success and retention rates are reviewed by the Program Review Committee and areas of concern, if any, are identified

The Program Review Committee examined the Success rate for all Horticulture and Landscape Design classes. In the absence of any guidelines, the committee decided to ask for instructor-examination of all classes with Success rates of less than 70%. While this may be a rather high percentage to subject to examination it is important to a quality program to examine all of its courses. Consequently, all instructors have been asked to examine their success rates and, if possible, to implement strategies to improve them.

As a group, the Horticulture Field Studies courses (Hort 160-165) have had low Success rates since Fall 2000 even though the Retention rate is 100%. Student interest in these courses is great as evidenced by consistently high enrollments and quick fill rates. Both full time faculty believe that the field experience is very valuable to the student. Reasons identified as possibly causing the low Success rate include:

- students are willing to receive a non-passing grade in order to repeat the course (the courses are non-repeatable at this time)
- some students take the course but are not concerned about a grade and do not finish assignments

Possible actions taken or discussed to improve Success include:

- incorporation of the Horticulture Field Studies in the certificate programs (passed by Saddleback College Curriculum Committee, January, 2005)
- possible pre-trip assignment(s) that, coupled with the field trip experience, would insure the minimum passing grade
- students would not be permitted to attend the field study without completing the pre-trip assignment(s)

The attention given to improving the Success Rate of the Horticultural Field Studies is an example of the review that all instructors have been asked to undertake with their courses, regardless of their Success Rate.

2.7 Horticulture and Landscape Design Foundation

The Horticulture and Landscape Design Foundation Account is administered by the Saddleback College Foundation. Department faculty, the ATAS dean, and the Horticulture and Landscape Design advisory committee determine the goals and activities of the Horticulture Foundation and oversee the use of collected funds. These activities include

- accepting contributions
- coordinating fund-raising events (Plant Sales)
- ensuring appropriate use of funds and gifts

During the last 5 years, Horticulture Foundation funds have been used to

- provide scholarships totaling \$4000-\$6000 yearly to Horticulture and Landscape Design students at Saddleback College
- purchase new equipment and supplies to enhance our classroom instruction
- support marketing efforts through the purchase of banners and displays
- purchase new equipment, supplies, and maintenance items for the Horticulture Unit

The Horticulture Foundation is not dependent on outside donations. On the contrary, the foundation is self-perpetuating, receiving the majority of its deposits from bi-annual Plant Sales at the Horticulture Unit. These sales are open to the entire campus community as well as the general public. The sales not only generate income but they are a major effort in community outreach and student recruitment.

2.8 Marketing Efforts

The programs of the Horticulture and Landscape Design Department are marketed in many ways. Most department vocational students are many years out of high school. Many are seeking to change careers or upgrade their skills in their existing profession. Our marketing efforts include:

- the Saddleback College schedule of classes
- department brochures produced by the ATAS division
- plant sales open to the public and the campus community
- advertising on Channel 39, KSBR, and college marquees
- fliers to local garden centers
- participation in Senior Day, Career Day, and Counselors' Day
- a departmental website
- participation in garden shows
- participation in Tech Prep day
- participation in Family Night
- publication of monthly events and achievements in the ATAS division "Good Stuff" electronic newsletter
- public speaking engagements by faculty
- presentation of scholarships at the annual Saddleback College Awards Ceremony
- participation in the Master Gardeners program
- alliances with local garden clubs
- tours of the Horticulture Unit
- presentations to Saddleback College Counselors

- articles in the campus newspaper, the Lariat
- a Special Topics series targeted at the Ladera Ranch community

One of our most successful recruitment tools is “word-of-mouth” from students satisfied with their coursework and the Horticulture and Landscape Department.

2.9 Planning Efforts

The Horticulture and Landscape Design Department has gathered input from many sources in planning its present and future curriculum as well as its scheduling patterns. These sources include:

- enrollment and Productivity reports
- success and Completion reports
- advisory Committee input
- department Meetings
- discussions with all department faculty and staff
- discussions with the division Dean
- in-class questionnaires
- an online survey of all horticulture students, all faculty, and industry contacts (conducted in Fall 2004)

The online survey mentioned above was an ambitious project that netted mixed results. All of our faculty participated fully as did most of our students. We learned, however, that this method of obtaining feedback does not work with the local horticulture industry as fewer than 10% of the individuals and companies contacted responded. In-person communication, telephone, mailings, and participation in Advisory Committees have given us closer contact with industry professionals.

The results of the online surveys completed by Faculty and students indicate that they agree that the topics we are presenting are relevant. Both groups suggest that we should consider adding more in the areas of retail sales and turfgrass management. We point this out as an example of one of the methods we are using for continuing self-assessment.

Additional documents directed at planning and self-assessment within the Horticulture and Landscape Design department include:

- the Five-Year Educational and Facilities Master Plan for Horticulture
- the Five-Year Educational and Facilities Master Plan for Landscape Design
- the Goals Action Plan – Horticulture 2004-2005

2.10 Accreditation

The Horticulture and Landscape Design Department is familiar with the three themes presented in the latest Evaluation Report prepared for Saddleback College by the WASC Accreditation Team. The department is involved in implementing each of these themes as follows:

Theme One: **Engage in ongoing institutional evaluation and improvement efforts.**

The department is currently engaged in program review.

Theme Two: **Develop Student Learning Outcomes**

At the department level, all instructors have prepared and executed SLO's. The faculty is striving to improve these and is hopeful that campuswide standards for SLO's will be adopted and distributed. Until then, each instructor will continue to construct identify and evaluate SLO's that seem relevant to the class being taught.

Theme Three: **Develop Campuswide Dialogue and Communication**

While this theme is more institutional than departmental, the Horticulture and Landscape Design Department hopes that the involvement of its members in Curriculum, Sabbatical Leave, Scholarship, and Faculty Hiring Prioritization Committees as well congenial input into the decision-making process will help the campus reach this goal.

3.0 Horticulture and Landscape Design Department Statistics

The Horticulture and Landscape Design Department statistics (year 2000/2001 to 2004/2005) are summarized in Table 1. The statistical data is supplied in the attached appendices (1-4). The data is divided into access and productivity, student success and student characteristics.

Access and Productivity – Average class size has remained nearly constant over the review period (about 30 students per section). Total census enrollment varies slightly and, as would be expected, increases as more sections are offered. While most of the department's numbers have been relatively stable, there has been an increase in WSCH/FTE during the past three years, especially in classes associated with the Landscape Design Certificate. The data reflect a stable program in terms of access and productivity. Additional data show that our vocational classes (offered primarily in the evening) have become impacted and are fully enrolled.

Student Success – The Average Student Retention rate was 93% during the review period. Student Success was measured at an average of 75%. During the same period the Average Student Retention rate at Saddleback College was 82% and the Success rate was 71%. Our numbers are indicative of courses that students will complete and in which most are successful.

Student Characteristics – One-fourth of our students are transfer students. Forty-percent indicate that they are taking classes to receive a certificate or AA degree, to upgrade skills, to explore employment opportunities, or to prepare for a new career. This diversity is consistent with our stated goal to provide General Education within a discipline that is basically vocational in nature. The department is successfully serving populations of student with distinctly different educational objectives.

Table 1 – Summary of Horticulture and Landscape Design Department Statistics***

		Academic Year				
	Benchmarks	2000/01	2001/02	2002/03	2003/04	2004/05
Access and Productivity (Fall semesters)						
Number of Course Sections Offered		16	17	15	16	16
C 1 Duplicated Headcount		476	490	446	452	458
Average WSCH per FTE Faculty		525	470	502	518	498
Fill Rate (C1 Enrollment/Course Cap)	84% (Program)	84%	94%	80%	78%	79%
Average Enrollment per Section	30.1% (Program)	29.8	28.8	29.6	30.8	31.6
Total Reported (normalized) WSCH		2252	2061	1999	1938	2073
Success & Retention (full year)						
Average Course Term Retention Rate	93% (Program)	93%	93%	93%	94%	n/a**
Average Successful Course Completion Rate	75% (Program)	77%	76%	72%	71%	n/a**
Number of Degrees & Certificates Awarded*		16	18	13	19	n/a**
Student Characteristics (full year)						
Education Goal	AA & Transfer	27%	26%	28%	23%	n/a**
	Voc Degree/Certificate	13%	15%	13%	16%	n/a**
	Upgrade Skills	6%	5%	4%	6%	n/a**
	Prepare for New Career/Discover Career Interests	19%	20%	21%	20%	n/a**
	Other	35%	34%	34%	35%	n/a**
Out-of-District Students	In District	82%	80%	77%	76%	n/a**
	Irvine/Tustin	4%	4%	6%	6%	n/a**
	Out-of-District	14%	16%	18%	19%	n/a**

*Indicates degrees and certificates for both General Horticulture and Landscape Design Certificates. In 1999/00 there were 7 certificates awarded in General Horticulture but data for the Landscape Design Certificate is not available for this year from the MIS Data Warehouse.

**These statistics for full academic years will not be available until after this study is completed.

***Source: SOCCCD MIS Data Warehouse October 4, 2004

Several of the courses required for the certificate in Horticulture are also required for the certificate in Landscape Design. The data presented in Table 1 and Appendix 1 show the combined profile of the full Horticulture and Landscape Design department course offerings.

Appendix 1 - Access and Productivity

Academic Year	Term	Total Secs	Lec WFCH	Lab WFCH	Other WFCH	CTR WFCH	OL WFCH	LL WFCH	PT WFCH	Other WFCH	Total WFCH	Total FTE
2000-2001	Fall	16	38.0	31.0	.0	29	10	2	23	0	71	4.40
2000-2001	Spring	14	35.0	30.0	.0	24	8	2	67	0	72	4.41
2001-2002	Fall	17	39.0	31.0	.0	30	10	4	23	0	74	4.60
2001-2002	Spring	16	35.5	29.5	.0	26	8	2	24	0	67	4.16
2002-2003	Fall	15	34.5	28.0	.0	29	10	2	17	0	63	3.87
2002-2003	Spring	15	36.5	33.0	.0	27	7	2	28	0	72	4.41
2003-2004	Fall	16	37.5	31.5	.0	30	9	0	23	0	69	4.27
2003-2004	Spring	14	33.5	30.0	.0	24	10	2	23	0	66	4.05
2004-2005	Fall	16	37.5	29.5	.0	20	na	na	20	0	67	4.16
2004-2005	Spring	15	36.5	32.5	.0	25	10	2	28	0	71	4.38

Academic Year	Term	Course Cap	C1 Enrl	Cur Enrl	Rpt Enrl	Current WSCH	Reported WSCH	WSCH/ FTE	Enrl/ WFCH	Enrl/ Sec
2000-2001	Fall	592	510	476	472	2252	2312	525	6.7	29.8
2000-2001	Spring	547	449	449	453	2108	2190	497	6.3	30.2
2001-2002	Fall	607	512	469	512	2061	2196	477	6.9	30.1
2001-2002	Spring	597	481	433	481	4935	2273	546	7.2	30.1
2002-2003	Fall	560	503	503	521	2303	2321	502	8.3	34.7
2002-2003	Spring	547	446	386	446	1832	2214	478	6.2	29.7
2003-2004	Fall	592	454	435	468	1929	1994	467	6.8	29.3
2003-2004	Spring	507	431	375	431	1732	2098	518	6.6	30.8
2004-2005	Fall	582	457	447	457	1926	1926	463	6.8	28.6
2004-2005	Spring	537	453	413	423	1850	1995	458	6.0	28.2

Appendix 2 - Success and Retention

The Success and Retention in Horticulture and Landscape Design classes is tabulated below. During the preparation of this Program Review, two sets of data were provided by the Data Analyst at different times. The first set of data received is shown in Table I below and is the data that is referred to throughout this document. The method for determining Retention for the first data set is defined as:

Retention Rate: Percent of students retained in courses out of total students enrolled in courses (RP Group, 1996). The retention rate is calculated by dividing the numerator (number of students with A, B, C, D, F, CR, NC, I*) by the denominator (number of students with (A, B, C, D, F, CR, NC, W, I*))

Appendix 2.1 Success and Retention (2000-2004) as defined prior to December 2004

YEAR	A	B	C	CR	D	F	IB	IC	ID	IF	NC	RD	UD	W	XX	Total	Success	Retention
2000-2001	385	230	126	42	47	92		5		1	4	2	1	71	18	1024	76%	93%
2001-2002	401	175	116	31	41	78		1		4	24	1		67	16	955	76%	93%
2002-2003	385	194	114	53	42	78		3		4	49			62	17	1001	74%	93%
2003-2004	358	187	116	34	46	93	1	1		2	30			57	33	958	73%	94%
Totals	1529	786	472	160	176	341	1	10	0	11	107	3	1	257	84	3938	75%	93%

In December, 2004 (well after the data from Table I had been incorporated into the Program Review), a new set of data was received with Retention being re-defined. The data is shown in Table II

Appendix 2.2 Success and Retention (2000-2004) as defined in December 2004

YEAR	A	B	C	CR	D	F	IB	IC	ID	IF	NC	RD	UD	W	XX	Total	Success	Redefined Retention
2000-2001	385	230	126	42	47	92		5		1	4	2	1	71	18	1024	76%	77%
2001-2002	401	175	116	31	41	78		1		4	24	1		67	16	955	76%	79%
2002-2003	385	194	114	53	42	78		3		4	49			62	17	1001	74%	80%
2003-2004	358	187	116	34	46	93	1	1		2	30			57	33	958	73%	76%
Totals	1529	786	472	160	176	341	1	10	0	11	107	3	1	257	84	3938	75%	78%

Retention Rate: Percent of students retained in courses out of total students enrolled in courses (RP Group, 1996). The retention rate is calculated by dividing the numerator (number of students with A, B, C, CR, NC, I*) by the denominator (number of students with (A, B, C, D, F, CR, NC, W, I*))

This definition of Retention makes the values recorded almost identical to % Success since it only differs from the Success formula by including NC in the numerator. It is unclear to the Program Review Committee why the NC grade is retained in the formula when the D and F grades are removed (NC indicates a grade equivalent of D or F). If the NC grade were removed from the numerator then the resulting formula would be identical to the one used for % Success and it would serve just as well to have one formula for both Success and Retention

Appendix 3 – Grades by Section

2000-01 Grades by Section

Semester	Course	Section	A	B	C	CR	D	F	IB	IC	ID	IF	NC	W	XX	Total	Success	Retention
Fall	Hort 209	19200D	4				1									5	80.0%	100.0%
Fall	Hort 209	19205D	2			1		1								4	75.0%	100.0%
Fall	Hort 208	19200A	9	2	1	1		1								14	92.9%	100.0%
Fall	Hort 208	19205A	5		1	1	2	2						1		12	58.3%	91.7%
Fall	Hort 130	19190	14	4		1		1		1				2		23	82.6%	91.3%
Fall	Hort 20	19140	13	15	12	1	5	6						3		55	74.5%	94.5%
Fall	Hort 20	19145	9	11	2		1	3						1	1	28	78.6%	96.3%
Fall	Hort 20	19150	7	9	9		5	5						4	1	40	62.5%	89.7%
Fall	Hort 20	19155	12	15	11		1	1						3	2	45	84.4%	93.0%
Fall	Hort 20	19160	8	9	8		1	1						2	1	30	83.3%	93.1%
Fall	Hort 20	19165	7	10	10		5	5						4	1	42	64.3%	90.2%
Fall	Hort 7	19175	19	5										4	2	30	80.0%	85.7%
Fall	Hort 116	19185	5	9	3			2					1	6		26	65.4%	76.9%
Fall	Hort 29	19170	4	4	1	9		4							1	23	78.3%	100.0%
Fall	Hort 10	19135	26	3	2	1						1		3	2	38	84.2%	91.7%
Fall	Hort 112	19180	9	5	4			4						2		24	75.0%	91.7%
Fall	Hort 189	20785	10	3		2		8								23	65.2%	100.0%
Spring	Hort 209	16960D	6		1	1		1					1			10	80.0%	100.0%
Spring	Hort 208	16960A	9	3		1		1						1		15	86.7%	93.3%
Spring	Hort 120	20935	25	4	5									1		35	97.1%	100.0%
Spring	Hort 20	16905	8	3			1	1						3		16	68.8%	81.3%
Spring	Hort 20	16910	17	18	9		2	3						1		50	88.0%	98.0%
Spring	Hort 20	16915	12	8	10	1	3	3						4		41	75.6%	90.2%
Spring	Hort 20	16920	4	6	4		6	1						2		23	60.9%	91.3%
Spring	Hort 20	16925	9	10	5		4	7						6	1	42	57.1%	85.4%
Spring	Hort 20	16930	7	8	7		1	1						2	1	27	81.5%	92.3%
Spring	Hort 109	16945	17	7	2	3	5	3		1				2		40	72.5%	95.0%
Spring	Hort 106	16940	11	5		1				3						20	85.0%	100.0%
Spring	Hort 29	16935	15	6	5	2								3		31	90.3%	90.3%
Spring	Hort 11	16900	18	10		1		8						6	2	45	64.4%	86.0%
Spring	Hort 113	16950	9	5	4			1						3	2	24	75.0%	86.4%
Spring	Hort 189	80440	13	7		1										21	100.0%	100.0%
Spring	HFS	20665	19	7		5		7					1			39	79.5%	100.0%
Summer	Hort 20	11855	6	8	5		2	2						3		26	73.1%	88.5%
Summer	Hort 20	11860	8	11	5		2	3								29	82.8%	100.0%
Summer	HFS	12540	9			9		6					1			25	72.0%	100.0%
			385	230	126	42	47	92		5	0	1	4	71	18	1021	76.7%	92.9%

Source: SOCCCD Research Data Warehouse.

Success Rate: Percent of students successful in courses out of total enrolled in courses (RP Group, 1996). The success rate is calculated by dividing the numerator (number of students duplicated with A, B, C, CR) by the denominator (number of students with A, B, C, D, F, CR, NC, W, I*)

Retention Rate: Percent of students retained in courses out of total students enrolled in courses (RP Group, 1996). The retention rate is calculated by dividing the numerator (number of students with A, B, C, D, F, CR, NC, I*) by the denominator (number of students with (A, B, C, D, F, CR, NC, W, I*)

Grade XX – None of the above/unknown. The grade is only allowed when a valid drop date is reported. The drop date might be before the class meets for the first time. While grade XX is not included in the calculation of success and retention rates, it might be useful in looking how many people drop courses trying to adjust their schedules.

2001-02 Grades by Section

Semester	Course	Section	A	B	C	CR	D	F	IB	IC	ID	IF	NC	W	XX	Total	Success	Retention
Fall	Hort 209	19795D	1	1		1								1		4	75.0%	75.0%
Fall	Hort 209	19800D	3	1												4	100.0%	100.0%
Fall	Hort 208	19795A	12	1									1	2		16	81.3%	87.5%
Fall	Hort 208	19800A	9	2	1	2		3					3			20	70.0%	100.0%
Fall	Hort 130	19790	17	4	3									2	1	27	88.9%	92.3%
Fall	Hort 20	19735	21	12	10		2	6						3	1	55	78.2%	94.4%
Fall	Hort 20	19740	4	8	5			1						1		19	89.5%	94.7%
Fall	Hort 20	19745	14	9	11		2	3						1	1	41	82.9%	97.5%
Fall	Hort 20	19750	3	2	5		1	6						6		23	43.5%	73.9%
Fall	Hort 20	19755	12	5	4			4						5		30	70.0%	83.3%
Fall	Hort 20	19760	5	11	9			6						2		33	75.8%	93.9%
Fall	Hort 7	19775	15	5	1		2			1				1	3	28	75.0%	96.0%
Fall	Hort 116	19785	7	7	2		1	2				2		3		24	66.7%	87.5%
Fall	Hort 29	19765	8	5	3	11		1								28	96.4%	100.0%
Fall	Hort 10	19730	16	2	1	1	1	1						11	1	34	58.8%	66.7%
Fall	Hort 112	19780	10	4			1	1						1		17	82.4%	94.1%
Spring	Hort 209	19505D	10	2		1		1					2	1		17	76.5%	94.1%
Spring	Hort 208	19505A	6	2		1		2						1		12	75.0%	91.7%
Spring	Hort 20	19440	4	14	12		3	6						3	3	45	66.7%	92.9%
Spring	Hort 20	19445	7	5	9	1	3	3						3	2	33	66.7%	90.3%
Spring	Hort 20	19450	14	7	5		1	5						1	1	34	76.5%	97.0%
Spring	Hort 20	19455	15	11	7		4	4						2		43	76.7%	95.3%
Spring	Hort 20	19460	17	12	12		10	5						4		60	68.3%	93.3%
Spring	Hort 20	19465	7	9	2		1							1		20	90.0%	95.0%
Spring	Hort 29	19470	13	3	3	4		1				2	1	3	1	31	74.2%	90.0%
Spring	Hort 11	19435	7	2	2		4	1					1	4	1	22	50.0%	81.0%
Spring	Hort 113	19485	15	2	2	1		1						1		22	90.9%	95.5%
Spring	Hort 189	24810	17					4					1			22	77.3%	100.0%
Spring	HFS	25035	11	5		1		3					11			31	54.8%	100.0%
Spring	Hort 189	24835	15			1										16	100.0%	100.0%
Spring	Hort 131	24055	17			1										18	100.0%	100.0%
Spring	Hort 109	19480	11	4		1	2	1						4	1	24	66.7%	82.6%
Spring	Hort 106	19475	10	4		3										17	100.0%	100.0%
Summer	Hort 20	12105	11	6	5		3	2								27	81.5%	100.0%
Summer	Hort 20	12110	20	8	2			2								32	93.8%	100.0%
Summer	HFS	13010	17			1		3					4			25	72.0%	100.0%
			401	175	116	31	41	78		1		4	24	67	16	954	75.8%	92.9%

Source: SOCCCD Research Data Warehouse.

Success Rate: Percent of students successful in courses out of total enrolled in courses (RP Group, 1996). The success rate is calculated by dividing the numerator (number of students duplicated with A, B, C, CR) by the denominator (number of students with A, B, C, D, F, CR, NC, W, I*)

Retention Rate: Percent of students retained in courses out of total students enrolled in courses (RP Group, 1996). The retention rate is calculated by dividing the numerator (number of students with A, B, C, D, F, CR, NC, I*) by the denominator (number of students with (A, B, C, D, F, CR, NC, W, I*))

Grade XX = None of the above/unknown. The grade is only allowed when a valid drop date is reported. The drop date might be before the class meets for the first time. While grade XX is not included in the calculation of success and retention rates, it might be useful in looking how many people drop courses trying to adjust their schedules.

2002-03 Grades by Section

Semester	Course	Section	A	B	C	CR	D	F	IB	IC	ID	IF	NC	W	XX	Total	Success	Retention
Fall	Hort 209	23250D	5									1				6	83.3%	100.0%
Fall	Hort 209	23255D	3										1			4	75.0%	100.0%
Fall	Hort 208	23250A	6	1	1	1		2				1	1	2		15	60.0%	86.7%
Fall	Hort 208	23255A	9	2	2	2	2	1				2	1		1	22	81.8%	81.8%
Fall	Hort 20	23195	12	15	7		2	2						5		43	79.1%	88.4%
Fall	Hort 20	23200	13	14	11		2	4						4	2	50	76.0%	91.7%
Fall	Hort 20	23205	5	5	14		3	12					1	6	3	49	49.0%	87.0%
Fall	Hort 20	23210	5	3	8		6	3						5	1	31	51.6%	83.3%
Fall	Hort 20	25265	15	22	14		4	3						3		61	83.6%	95.1%
Fall	Hort 29	23225	12	8		22		1					1	1		45	93.3%	97.8%
Fall	Hort 10	23190	14	3				3						5		25	68.0%	80.0%
Fall	Hort 112	23230	4	1	1	1	2	1						1	1	12	58.3%	90.9%
Fall	Hort 189	25245	33			2									2	37	94.6%	100.0%
Fall	Hort 189	25255	5	5		3		4					12			29	44.8%	100.0%
Fall	Hort 130	23270	14	1	1								1	1	1	19	84.2%	94.4%
Fall	Hort 7	23260	15	9	1		3									28	89.3%	100.0%
Fall	Hort 116	23265	23	3	1			2						1		30	90.0%	96.7%
Spring	Hort 209	16575D	1					1								2	50.0%	100.0%
Spring	Hort 208	16575A	8	4	2	2		2					3			21	76.2%	100.0%
Spring	HFS	21570	5			2		5					11	1		24	29.2%	95.8%
Spring	Hort 120	21515	11			1								3		15	80.0%	80.0%
Spring	Hort 20	16515	13	10	2			1						3		29	86.2%	89.7%
Spring	Hort 20	16520	12	15	9	1	8	3						4	1	53	69.8%	92.3%
Spring	Hort 20	16525	18	6	2			5						4		35	74.3%	88.6%
Spring	Hort 20	16530	10	8	4		2	4						1		29	75.9%	96.6%
Spring	Hort 20	16535	1	9	12		1	4							1	28	78.6%	100.0%
Spring	Hort 20	16540	4	6			1	2						1	1	15	66.7%	92.9%
Spring	Hort 29	16545	12	3	2	7	1	1					1	1		28	85.7%	96.4%
Spring	Hort 11	16510	13	8	4		3	2						8		38	65.8%	78.9%
Spring	Hort 113	16550	9	4	2			1						1	3	20	75.0%	94.1%
Spring	Hort 189	20475	9			6		3					1			19	78.9%	100.0%
Spring	Hort 109	16585	20	5	1	1		1						1		29	93.1%	96.6%
Spring	Hort 106	22540	8	13		1				3						25	88.0%	100.0%
Summer	HFS	12750	13			1		3					15			32	43.8%	100.0%
Summer	Hort 20	12470	9	4	5		2	1								21	100.0%	100.0%
Summer	Hort 20	12475	15	7	8			1								31	96.8%	100.0%
			384	194	114	53	42	78		3		4	49	62	17	1000	74.5%	93.7%

Source: SOCCCD Research Data Warehouse.

Success Rate: Percent of students successful in courses out of total enrolled in courses (RP Group, 1996). The success rate is calculated by dividing the numerator (number of students duplicated with A, B, C, CR) by the denominator (number of students with A, B, C, D, F, CR, NC, W, I*)

Retention Rate: Percent of students retained in courses out of total students enrolled in courses (RP Group, 1996). The retention rate is calculated by dividing the numerator (number of students with A, B, C, D, F, CR, NC, I*) by the denominator (number of students with (A, B, C, D, F, CR, NC, W, I*))

Grade XX = None of the above/unknown. The grade is only allowed when a valid drop date is reported. The drop date might be before the class meets for the first time. While grade XX is not included in the calculation of success and retention rates, it might be useful in looking how many people drop courses trying to adjust their schedules.

2003-04 Grades by Section

Semester	Course	Section ID	A	B	C	CR	D	F	IB	IC	ID	IF	NC	W	XX	Total	Success	Retention
Fall	Hort 209	19460D	2					1								3	66.7%	100.0%
Fall	Hort 209	19465D	4	2				2					1			9	66.7%	100.0%
Fall	Hort 208	19460A	10	3	1	5						1	1	1	1	23	82.6%	95.5%
Fall	Hort 208	19465A	10	2	1	1		1								15	93.3%	100.0%
Fall	Hort 20	19415	9	9	9		7	5					1	4	1	45	60.0%	90.9%
Fall	Hort 20	19420	11	5	3		3	3					1	1	1	27	70.4%	96.2%
Fall	Hort 20	19425	2	6	6		3	3						4	1	25	56.0%	83.3%
Fall	Hort 20	19430	3	2	5		3	3					1	1		18	55.6%	94.1%
Fall	Hort 20	19435	15	14	12		3	7					1			52	78.8%	98.1%
Fall	Hort 20	22025	5	8	6		2	1						1		23	82.6%	100.0%
Fall	HFS	20810	7					7					10			24	29.2%	100.0%
Fall	Hort 29	19440	4	4		8		1								17	94.1%	100.0%
Fall	Hort 10	19410	27	2	2	1		5						3	2	42	76.2%	92.5%
Fall	Hort 112	19445	3	1	2			8								14	42.9%	100.0%
Fall	Hort 189	21260	14	3		2		4								23	82.6%	100.0%
Fall	Hort 130	19480	20	4	1	1		2						3		31	83.9%	90.3%
Fall	Hort 7	19470	20	8	1	1		4		1				2	2	39	76.9%	94.6%
Fall	Hort 116	19475	6	5	3		2	2						6	2	26	53.8%	75.0%
Spring	Hort 209	16800D	6	1								1				8	87.5%	100.0%
Spring	Hort 208	16800A	7	3	1	3		1								15	93.3%	100.0%
Spring	HFS	16790	6	1				2					12			21	33.3%	100.0%
Spring	Hort 20	16745	4	15	12		4	3							2	40	77.5%	100.0%
Spring	Hort 20	16750	2	6	9	1		1						10		29	62.1%	65.5%
Spring	Hort 20	16755	8	9	4		7	1						2	1	32	65.6%	93.5%
Spring	Hort 20	16760	12	9	3			2							1	27	88.9%	100.0%
Spring	Hort 20	16765	14	15	17	1	4	2						2		55	85.5%	96.4%
Spring	Hort 20	16770	6	5	1									1	1	14	85.7%	92.3%
Spring	Hort 29	16775	15	3	1	2	1							2	1	25	84.0%	91.7%
Spring	Hort 11	16740	9	5	4	2		1						6	3	30	66.7%	77.8%
Spring	Hort 113	16780	13	5	3	1	3	2							2	29	75.9%	100.0%
Spring	Hort 189	21910	17	2		1		6					1			27	74.1%	100.0%
Spring	Hort 123	18785D													1	1	0.0%	#DIV/0!
Spring	Hort 109	16815	21	10	1	1	2		1					2	1	39	84.6%	94.7%
Spring	Hort 106	16805	9	11		1										21	100.0%	100.0%
Summer	Hort 115	13005	11	3		1		7						5	8	35	42.9%	81.5%
Summer	HFS	11645	8	1				4					4			17	52.9%	100.0%
Summer	Hort 20	11635	10	3	2		2	1								18	83.3%	100.0%
Summer	Hort 20	11640	8	2	6	1		1						1		19	89.5%	94.7%
			358	187	116	34	46	93	1	1		2	30	57	33	958	72.5%	93.8%

Source: SOCCCD Research Data Warehouse.

Success Rate: Percent of students successful in courses out of total enrolled in courses (RP Group, 1996). The success rate is calculated by dividing the numerator (number of students duplicated with A, B, C, CR) by the denominator (number of students with A, B, C, D, F, CR, NC, W, I*)

Retention Rate: Percent of students retained in courses out of total students enrolled in courses (RP Group, 1996). The retention rate is calculated by dividing the numerator (number of students with A, B, C, D, F, CR, NC, I*) by the denominator (number of students with (A, B, C, D, F, CR, NC, W, I*))

Grade XX = None of the above/unknown. The grade is only allowed when a valid drop date is reported. The drop date might be before the class meets for the first time. While grade XX is not included in the calculation of success and retention rates, it might be useful in looking how many people drop courses trying to adjust their schedules.

Appendix 4 – Student Characteristics

Appendix 4.1 - Educational Goals for Students Enrolled in Horticulture Courses 2000-2004

	2000		2001		2002		2003		2004	
	Count	%	Count	%	Count	%	Count	%	Count	%
AA and transfer	210	27%	195	26%	246	28%	162	23%	120	27%
Educational Development	112	15%	98	13%	110	13%	110	15%	61	14%
Prepare for new career	92	12%	92	12%	105	12%	96	14%	60	14%
Undecided on goal	88	12%	88	12%	97	11%	90	13%	53	12%
Voc Degree w/o Transfer	68	9%	81	11%	88	10%	70	10%	42	10%
Discover career interests	53	7%	58	8%	72	8%	56	8%	34	8%
Transfer to 4 year w/o AA	45	6%	56	7%	71	8%	42	6%	30	7%
Advance in job - Skill upgrade	44	6%	40	5%	39	4%	40	6%	16	4%
2 year voc voc deg w/o transfer	29	4%	28	4%	22	3%	23	3%	15	3%
2 year assoc. deg. w/o transfer	16	2%	6	1%	11	1%	10	1%	3	1%
Improve skills in eng., math, or reading	4	1%	5	1%	8	1%	8	1%	2	0%
Maintain certificate or license	2	0%	2	0%	3	0%	2	0%	1	0%
Complete credits for H.S. diploma/GED	1	0%	2	0%	3	0%	1	0%	0	0%
Uncollected/Unreported	0	0%	0	0%	1	0%	1	0%	0	0%
Count Distinct	764	100%	751	100%	876	100%	711	100%	437*	100%

*Count for Fall 2004 Semester only

Appendix 4.2 – Student Distribution by Gender

**Horticulture Program
Gender by Year/Term
Duplicated Headcount**

		Female		Male		Unknown		Total	
		Count	Row %	Count	Row %	Count	Row %	Count	Row %
1999	Spring	288	56.7%	220	43.3%	0	.0%	508	100.0%
	Fall	253	59.5%	172	40.5%	0	.0%	425	100.0%
2000	Spring	279	64.3%	155	35.7%	0	.0%	434	100.0%
	Summer	54	58.1%	39	41.9%	0	.0%	93	100.0%
	Fall	265	57.1%	199	42.9%	0	.0%	464	100.0%
2001	Spring	277	57.7%	203	42.3%	0	.0%	480	100.0%
	Summer	52	65.0%	28	35.0%	0	.0%	80	100.0%
	Fall	260	64.4%	144	35.6%	0	.0%	404	100.0%
2002	Spring	246	57.7%	180	42.3%	0	.0%	426	100.0%
	Summer	50	59.5%	34	40.5%	0	.0%	84	100.0%
	Fall	271	63.2%	158	36.8%	0	.0%	429	100.0%
2003	Spring	202	56.7%	154	43.3%	0	.0%	356	100.0%
	Summer	46	54.8%	38	45.2%	0	.0%	84	100.0%
	Fall	227	63.1%	133	36.9%	0	.0%	360	100.0%
2004	Spring	203	57.5%	149	42.2%	1	.3%	353	100.0%
	Summer	57	64.0%	32	36.0%	0	.0%	89	100.0%
	Fall	190	55.6%	152	44.4%	0	.0%	342	100.0%

Average over entire period: Male, 37%; Female, 63%

Appendix 4.3 – Student Distribution by Age

**Horticulture Program
Age Group Distribution by Year/Term
Duplicated Headcount**

	Age Groups																
	Under 18 years		Age 18-21		Age 22-25		Age 26-35		Age 36-50		Age 51-65		Over 66 years		Total		
	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	Count	Row %	
1999	Spring	0	.0%	169	33.3%	77	15.2%	91	17.9%	130	25.6%	37	7.3%	4	.8%	508	100.0%
	Fall	0	.0%	122	28.7%	66	15.5%	88	20.7%	113	26.6%	34	8.0%	2	.5%	425	100.0%
2000	Spring	1	.2%	137	31.6%	57	13.1%	84	19.4%	106	24.4%	45	10.4%	4	.9%	434	100.0%
	Summer	0	.0%	37	39.8%	12	12.9%	12	12.9%	17	18.3%	14	15.1%	1	1.1%	93	100.0%
	Fall	3	.6%	164	35.3%	72	15.5%	77	16.6%	109	23.5%	36	7.8%	3	.6%	464	100.0%
2001	Spring	4	.8%	158	32.9%	60	12.5%	88	18.3%	131	27.3%	36	7.5%	3	.6%	480	100.0%
	Summer	0	.0%	26	32.5%	15	18.8%	14	17.5%	14	17.5%	9	11.3%	2	2.5%	80	100.0%
	Fall	2	.5%	141	34.9%	52	12.9%	69	17.1%	95	23.5%	43	10.6%	2	.5%	404	100.0%
2002	Spring	2	.5%	161	37.8%	55	12.9%	72	16.9%	92	21.6%	44	10.3%	0	.0%	426	100.0%
	Summer	3	3.6%	33	39.3%	12	14.3%	13	15.5%	20	23.8%	3	3.6%	0	.0%	84	100.0%
	Fall	4	.9%	192	44.8%	52	12.1%	63	14.7%	80	18.6%	36	8.4%	2	.5%	429	100.0%
2003	Spring	1	.3%	105	29.5%	49	13.8%	69	19.4%	90	25.3%	40	11.2%	2	.6%	356	100.0%
	Summer	2	2.4%	20	23.8%	10	11.9%	13	15.5%	26	31.0%	13	15.5%	0	.0%	84	100.0%
	Fall	6	1.7%	123	34.2%	49	13.6%	48	13.3%	83	23.1%	47	13.1%	4	1.1%	360	100.0%
2004	Spring	3	.8%	134	38.0%	41	11.6%	53	15.0%	80	22.7%	38	10.8%	4	1.1%	353	100.0%
	Summer	0	.0%	26	29.2%	12	13.5%	17	19.1%	22	24.7%	10	11.2%	2	2.2%	89	100.0%
	Fall	4	1.2%	138	40.4%	54	15.8%	50	14.6%	59	17.3%	30	8.8%	7	2.0%	342	100.0%

5.0 Conclusions and Recommendations

The program review process assists the department in focusing its efforts to improve the quality of instruction. Based on this review, the following conclusions and recommendations are made by the Program Review Committee:

Conclusions

- the Horticulture and Landscape Design Department is meeting its goals as outlined in its mission statement
- productivity (WSCH/FTE) at the end of the last academic year was 518 and 546 for the Horticulture program and the Landscape Design program, respectively, and has remained high during the five year period covered by this Program Review
- the largest part of the department's enrollment (42%) is comprised of students seeking new skills, certificates, and/or careers
- transfer students account for 22% of enrollment
- retention and success rates are higher than those for the campus as a whole.
- success rates vary widely from class to class
- enrollments are stable in our vocational classes, which are impacted with numbers over 100% of capacity
- technology needs of the department are adequately met
- academic staffing is adequate at this time if full-time faculty continue to accept overload.
- the quality of the department's classified staff is excellent but since the Greenhouse Assistant position is only part-time, it is not possible to have technical staff on site during all of our laboratories
- the number of sections scheduled per semester has been constant
- fluctuations in the enrollment of students in GE classes is largely responsible for changes in productivity numbers
- the faculty receives adequate opportunity for professional growth
- the department is addressing the concerns of the WASC Accreditation Report
- all classes have been recently reviewed by the Saddleback College Curriculum Committee and articulated as appropriate

Recommendations

- raise productivity through more aggressive marketing of Hort 20 classes
- explore new course offerings, such as turfgrass and water management, to enhance the skills obtained by vocational students in Horticulture and Landscape Design
- continue to review present course offerings with regard to effectiveness in preparing students for job placement or providing General Education and/or transfer credits
- request OSH and budget increases necessary to improve programs and/or develop new course offerings
- continue to develop and implement SLO's using templates provided by the college
- continue in-class assessments in order to maintain retention and improve success rates
- work with Admissions and Records to implement a tracking method to monitor success of certificate students once they leave the program(s)

- explore the development of a testing protocol to measure and compare student success in our courses to similar courses offered at other institutions
- maintain a high level of technology as required by the Horticulture and Landscape Design industries
- continue to monitor the technology needs of the department and request new equipment and software as needed
- assess the need for new courses and/or programs in the Horticulture and Landscape Design Department
- assess the need for an additional or replacement full-time instructor in the area of Landscape Design
- request that the Greenhouse Assistant position become full-time to enable technical support to be present at all laboratories
- continue to review program status and needs with the Horticulture and Landscape Advisory Committee
- increase membership and participation in the Horticulture and Landscape Design Advisory Committee
- investigate the desirability of scheduling additional courses that offer continuing education hours to horticulture and landscape design professionals